Self-Study Report
Academic Programmes
(2015-16 to 2019-2020)

ICAR-Central Institute of Fisheries Education
(University under Sec.3 of UGC Act 1956)
Indian Council of Agricultural Research
Panch Marg, Off Yari Road, Andheri (West), Mumbai - 400061, India

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Master of Fisheries Science (Aquaculture)

6.4.1. Brief History of the Degree Programme:

This degree programme was started in the year 1995 and is one of the oldest programmes of ICAR-CIFE. The programme is aimed to provide field driven knowledge and expertise to the students in order to produce skilled aquaculture professionals through conducting research in basic and applied aspects of aquaculture.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (IAC)	Master of Fisheries Science (Inland Aquaculture)	1995	2 years	--
M.F.Sc (AQC)	Master of Fisheries Science (Aquaculture)	2007	2 Years	13

Only those candidates having their Bachelor's Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	26
Minor courses	06
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Aquaculture)

A	**MAJOR COURSES**		
	A1	**CORE COURSES**	
1.	AQC 501	Fresh water aquaculture and seed production system	2+1
2.	AQC 502	Coastal aquaculture and seed production system	2+1
3.	AQC 503	Aquaculture environment management	2+1
4.	AQC 504	Aquaculture engineering	2+1
5.	AQC 505	Finfish and shellfish physiology	2+1
	A2	**OPTIONAL COURSES**	
1.	AQC 506	Aquaculture of ornamental fishes	1+1
2.	AQC 507	Larval nutrition and live feed	1+1
3.	AQC 508	Integrated fish farming	1+1
4.	AQC 509	Inland saline aquaculture	1+0
5.	AQC 510	Aquaculture for sports and recreational fishing	1+0
6.	AQC 511	Culture based capture fisheries	1+1
7.	AQC 512	Hydrobiology and limnology	1+1
8.	AQC 513	Fish biology	1+1
B	**MINOR COURSES-** (Courses outside major discipline / from disciplines)		other relevant
C	**SUPPORTING COURSES (COMPULSORY)**		
1.	FST 501	Research methodology	1+1
2.	FST 502	Statistical methods	2+1
1.	AQC 599	Masters research (Semester III)	0+10
2.	AQC 599	Masters research (Semester IV)	0+10

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	2		1
2.	Senior Scientist	3		2
3.	Scientist	4		3
	Total	9		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical officer	3	
2.	Skilled support	1	
	Total	**4**	

6.4.4. Classroom and Laboratories

- Well-equipped class room for Master's students (01) is available in the department apart from other common classrooms.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The department has a well-equipped lab for conducting practicals for the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent plagiarism and promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, centrifuge, spectrophotometer, gel documentation unit etc.

List of Equipment

1. UV-spectrophotometer
2. Kjeldahl instrument
3. Water bath shaker
4. Centrifuge
5. Gel doc
6. Elisa reader
7. PCR machine
8. Microscopes
9. Ultra freezer
10. RO plant

6.4.5. Conduct of Practical and Hands-on-Training

The courses are designed to follow the mandate of imparting basic and applied knowledge in aquaculture and are designed with adequate number of credit hours as per the importance of each course to the discipline. The credit hours are designated with 2+1 and 1+1 courses. The labs have all the basic facilities to conduct practical and also a well-equipped wet laboratory, aquaponics unit, seed rearing facilities, aquarium, fish breeding unit and a hatchery for practical exposure to the students and for their research activities. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG programmes

Qualified faculty in relation to intake of students of Masters Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students
		Masters
1.	Professor / Principal Scientist	2
2.	Senior Scientist / Associate Professor	3
3.	Scientist / Assistant Professor	4
	Total	**9**

Thesis supervised/ submitted in PG Programme

Students in Aquaculture discipline are conducting research in different basic, field, and applied aspects.

Details of M.F.Sc students' dissertation (Year: 2014-15)

Name of students	Title	Major Advisor
Mr. Sontakke Ravindra Harish	Effect of different diets on growth and survival of *Notopterus chitala* fry	Dr. C. S Chaturvedi
Ms. Dorothy M.S	Evaluation of growth and survival of *Litopenaeus vannamei* (Boone, 1931) under biofloc based culture system in inland saline water	Dr. Babitha Rani A. M
Mr. Manish Kumar	Comparative performance of *Pangasianodon hypophthalmus* (Sauvage, 1878) culture in cages and ponds	Dr. Kiran D. Rawat
Ms. Harsha Hardis	Evaluation of growth and immune response of gift strain of tilapia in biofloc based systems	Dr. A. K Verma
Mr. Somu Sunder	Evaluation of growth and physiological changes in *Pangasionodon hypophthalmus* under different salinities	Dr. Suresh Babu P. P
Mr. Javed Amiri	Comparative studies on the aquatic productivity through organic manures and inorganic fertilizers	Dr. Chandra Prakash
Mr. Arun V.V	Effect of abiotic factors on hatching rate and cyst production of Indian and exotic stocks of *Artemia franciscana*	Dr. Neelam Saharan
Mr. Jitendra Thakur	Study on production potential and economic viability of crap seed using sugar industry bio-wastewater	Dr. Chandra Prakash
Ms. Poonam Rani	Performance evaluation of red tilapia in inland saline water at various salinity levels with special reference to ionic manipulation	Dr. V. Hari Krishna
Mr. Vinod Kumar Paswan	Effects of salinity and c++/Mg++ ratio on physiological and production parameters of *Litopenaeus vannamei (*Boone, 1931) reared in inland saline water	Dr. V. Hari Krishna
Mr. Mohammad Irshad Khan	Studies on induced breeding and seed production of indigenous carp in captive conditions	Dr. V. K Tiwari

Ms. Jyotismita Thakuria	Responses of water hardness on gonadal development and gene expression of gill Na+/K+-AT Pase of *Oscar Astronotus ocellatus* (cuvier, 1829)	Dr. Paramita B. sawant
Mr. Ashish Upadhyay	Ionic manipulation of inland ground saline water for growth and survival of tilapia	Dr. A. K. Reddy

Year : 2015-16

Name of Student	Topic	Major Advisor
Aquaculture		
Ms. Jess Maria Wilson	Studies on maturation of *Astronotus ocellatus* (cuvier, 1829) through dietary manipulation	Dr. N. K Chadha
Ms. Sherry Abraham	Comparative effect of microalgae and artificial media enriched live feed for the growth and survival of *Amphiprion* spp. During first feeding period.	Dr. Neelam Saharan
Mr. Saikat Kumar Das	Influence of different feeds on growth and digestive enzyme activities of *Symphysodon aequifasciatus* (Pellegrin, 1904) larvae	Dr. P. B. Sawant
Ms. P. Nageswari	Evaluation of growth and immune response of *Etroplus suratensis* (Bloch 1790) in biofloc based system supplemented with different strains of probiotic bacteria	Dr. Neelam Saharan
Mr. R. Dinesh	Effect of tobacco (nicotiana tabacum) leaf dust as sedative for rohu, *Labeo rohita* (Hamilton, 1822) fingerlings transport.	Dr. Chandra Prakash
Ms. Iffat Jahan	Growth and survival of *Litopenaeus vannamei* (Boone, 1931) fed with different dietary potassium (K) and magnesium (Mg) levels and reared in inland ground saline water.	Dr. A. K. Reddy
Mr.V. Ezhilarasi	Evaluation of growth and survival of amur carp, *Cyprinus carpio haematopterus* (Martens 1876) under biofloc system in inland saline groundwater	Dr. A. K. Verma
Mr. R. Vivek	Evaluation of perphyton based cage aquaculture on growth performance of *Labeo rohita* (Hamilton, 1822) fingerlings.	Dr. Kiran Dube Rawat
Mr. R. Siju	Effects of photoperiod on growth and survival of *Clarias batrachus* (Linnaeus, 1758) larvae	Dr. V. K Tiwari
Ms. Sanitha Saseendran	Effect of stocking density on growth and production performance of grow out culture of *Labeo rohita* (Hamilton, 1822) in floating net cages	Dr. Kiran Dube Rawat
Mr. Shyam Kumar	Evaluation of growth and physiological responses in *Labeo rohita* (Hamilton, 1822) supplemented with different protein diets in biofloc system	Dr. Babita Rani
Mr. M. Menaga	Evaluation of relative efficacy of aerobic microbial floc (AMF) driven raceways and lined ponds for the nursery rearing of pacific white shrimp, *Litopenaeus vannamei*	Dr. N. K Chadha

Year: 2016-17

Name of Students	Topic	Major Advisor
Aquaculture		
Ms. Sonia	Effect of pulsed feeding in GIFT strain of tilapia under biofloc technology using inland saline water.	Dr. N. K. Chadha
Ms. Meenu Devassykutty	Evaluation of growth and survival of *Ompok pabda* (Hamilton,1822) larvae under different stocking densities and feeding regimes	Dr. V. K Tiwari
Mr. Syam K. R.	Study on molecular differentiation and colour variation in oscar, *Astronotus ocellatus* (Agassiz, 1831)	Dr. Paramita B. Sawant
Ms. Peersaba Manzoor	Gonadal maturation and physiological response of *Cyprinus carpio* (Linnaeus, 1758) in bio systems fed with varying dietary lipid content	Dr. Babitha Rani A. M.
Mr. Himanshu B.	Study of molecular differentiation and colour variation in discus, *Symphysodon* spp. (Pellegrin, 1904)	Dr. Paramita B. Sawant
Mr. Pranaysree P.Kumar	Photothermal manipulation of gonad recrudescence in *Trichogaster lalius* (Hamilton 1822)	Dr. Subarata Dasgupta
Ms. Hogaina Panmei	Assessment of egg and larval quality of Pabda catfish, *Ompok pabda* (Hamilton, 1822) bred with different inducing agents	Dr. Babitha Rani A. M
Ms. Neethu M	Exogenous methylfarnesoate supplementation and its effect on moulting and maturation of freshwater prawn, *Macrobrachium rosenbergii* (De man,1879)	Dr. Kiran Dube Rawat
Ms. Dasari Mamatha	Zero water exchange system for *Labeo rohita* (Hamilton, 1822) spawn and fingerling production	Dr. A. K.Verma
Mr. Sachin Sahu	Effect of water temperature and pH on growth and survival of *Trichogaster lalius* (Hamilton, 1822) under captivity	Dr. Subhendu Datta

Year 2017-18

Name of students	Topic	Major Advisor
Aquaculture		
Ms. Puja Chakraborty	Utilization of detoxified Jatropha kernel cake in the diet of *Clarias magur* (Hamilton, 1822) fingerlings for growth performance	Dr. Murlidhar P. Ande
Mr. Bullo Angkha	Microbial solubilisation of mineral rocks by *Bacillus s*p. and its effect on plant with tilapia in aquaponics system	Dr. A. K. Verma
Mr. Sandeep Shankar	Dietary incorporation of carotenoid-protein extracted from shrimp shell waste for colour enhancement in Oscar, *Astronotus ocellatus* (Agassiz, 1831)	Dr. P. B. Sawant

Ms. Sunumol P. S.	Biofloc as a dietary ingredient and its impact on growth and physiological response of *Pangasianodon hypophthalmus* (Sauvage, 1878) fingerlings in aquaponic system	Dr. K. Dube Rawat
Ms. Ritty Maria Thomas	Study on bio-integration of fish and plant in low saline inland water	Dr. A. K. Verma
Ms. Sanchita Naskar	Evaluation of organic manures to reduce GHG (greenhouse gas) production from aquaculture at varying salinity level	Dr. G. H. Pailan
Mr. Ajoy Chutia	Chitosan inclusion for biofloc development and its impact on growth and physiological response in GIFT Tilapia	Dr. Babitha Rani A. M.
Ms. Sangavi S.	Effect of dietary incorporation of oil palm kernel meal on growth and physio-metabolic response of Rohu, *Labeo rohita* (Hamilton, 1822) fingerlings	Dr. P. B. Sawant
Mr. Gavin Raplang Nongsiej	Study on growth and survival of *Cyprinus carpio* (Linnaeus, 1758) larvae reared in inland saline water	Dr. V. K. Tiwari
Mr. Chandroshakar Biswal	Effect of temperature on sex differentiation in *Cyprinus carpio* (Linnaeus, 1758)	Dr. S. Dasgupta

Year 2018-2019

Aquaculture		
Ms. P. Abinaya	Water budgeting for *Penaeus vannamei* (Boone, 1931) culture using inland saline water under different management practices	Dr. Chandrakant M. H.
Ms. Abisha R	Integrated aquaculture of ornamental fish, aquatic plants and leafy vegetables in floating net cages	Dr. Kiran Dube Rawat
Mr. Harmanpreet Singh	Comparative growth performance of rainbow trout (*Oncorhynchus mykiss* Walbaum, 1792) in recirculatory aquaculture system and flow through system	Dr. N. N. Pandey
Ms. Jane Jacob	Assessment of freshwater integrated multi-trophic aquaculture (FIMTA) in floating net cages	Dr. Kiran Dube Rawat
Ms. Nahida Rasheed	Effect of 17 β-estradiol on growth, survival and feminization in *M. rosenbergii* (de Man, 1789) larvae	Dr. V. K. Tiwari
Mr. Patil Atul Rajendra	Assessment of growth and physiological responses of *Scylla* sp. fed with different feeds	Dr. N. K. Chadha
Mr. Ramjanul Haque	Utilization of shrimp shell meal for coloration, growth and maturation of Discus, *Symphysodon aequifasciatus* (Pellegrin, 1904)	Dr. Paramita B. Sawant
Ms. A. Sathiya Kala	Evaluation on the effect of herbal antioxidants for milt cryopreservation of an endangered fish *Ompok pabda* (Hamilton, 1822)	Dr. V. K. Tiwari

Mr. Syed Hamza Syed S.	Rearing of genetically improved farmed tilapia fingerlings in inland saline water using microfloc meal based diet.	Dr. Babitha Rani A. M
Mr. Vinayak A Naik	Evaluation of microfloc meal based diet for growth, physiological responses and colour development in juveniles of Oscar, *Astronotus oscellatus* (Agassiz, 1831)	Dr. Paramita B. Sawant
Mr. Tushar Madhukar	Development and evaluation of a novel media for in-situ biofloc rearing of genetically improved farmed tilapia in inland saline water	Dr. Babitha Rani A. M

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

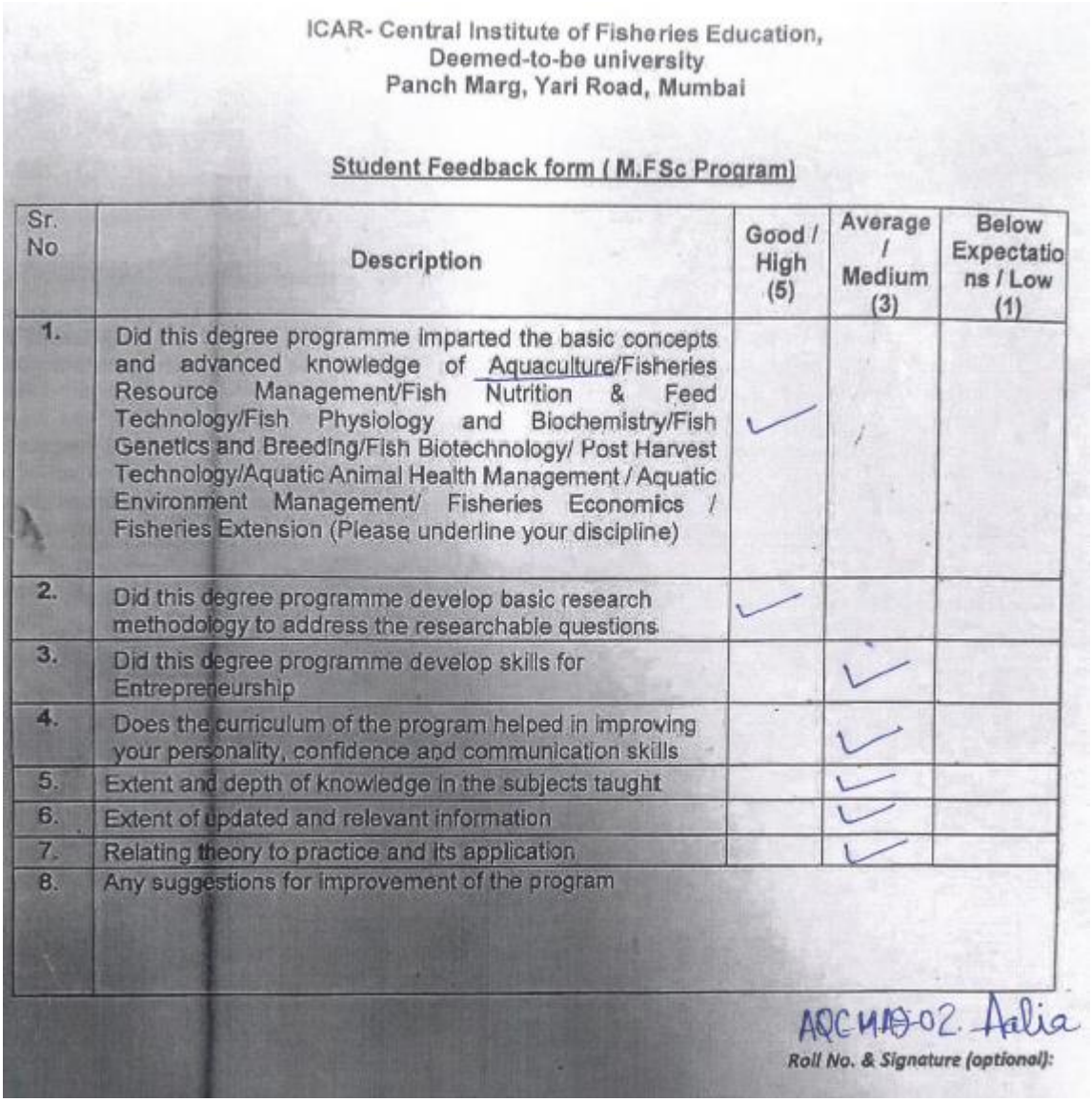
ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program			

AQC-MAD-10.

Roll No. & Signature (optional):



ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program			

AQCH-02. Alia

Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
M.F.Sc	12	13	12	13	13	16.6	23.07	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctor of Philosophy in Aquaculture

6.4.1. Brief History of the Degree Programme:

This degree programme was started in the year 1995 and is one of the oldest programmes of ICAR-CIFE. The programme is aimed to provide field driven knowledge and expertise to the students in order to produce skilled aquaculture professionals through conducting research in basic and applied aspects of aquaculture.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (IAC)	Doctor of Philosophy in Inland Aquaculture	1995	3 Years	Discontinued
Ph.D. (AQC)	Doctor of Philosophy in Aquaculture	2007	3 years	10

Eligibility Criteria
B.F.Sc. & M.F.Sc. (Aquaculture)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	15
Minor courses	08
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Aquaculture

A	**MAJOR COURSES**		
	A1	**CORE COURSES**	
1.	AQC 601	Recent advances in aquaculture production systems	2+0
2.	AQC 602	Recent advances in seed production and hatchery management	2+1
3.	AQC 603	Aquaculture system management	1+1
4.	AQC 604	Engineering of water management for aquaculture	1+1
	A2	**OPTIONAL COURSES**	
1.	AQC 605	Fish and shellfish physiology and endocrinology	1+1
2.	AQC 606	Intensive farming systems	1+1
3.	AQC 607	Enhanced fisheries in open waters	1+1
4.	AQC 608	Breeding & culture of ornamental fishes	1+1
B	**MINOR COURSES** (Courses outside major discipline / from other relevant disciplines)		
C	**SUPPORTING COURSES** (Compulsory)		
1.	FST 601	Advanced statistical methods	2+1
2.	FST 602	Software for fisheries data analysis and management	0+2

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	2		1
2.	Senior Scientist	3		2
3.	Scientist	4		3
	Total	**9**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical officer	3	
2.	Lab technician		
3.	Lab attend		
4.	Skilled support	1	
	Total	**4**	

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The department has a well-equipped lab for conducting practical to the Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.

- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuge, spectrophotometer, gel documentation unit

List of Equipment

1. UV-spectrophotometer
2. Kjeldahl instrument
3. Water bath shaker
4. Centrifuge
5. Gel doc
6. Elisa reader
7. PCR machine
8. Microscopes
9. Ultrafreezer
10. RO plant

6.4.5. Conduct of Practical and Hands-on-Training

The courses are designed to follow the mandate of imparting basic and applied knowledge in aquaculture and are designed with adequate number of credit hours as per the importance of each course to the discipline. The credit hours are designated with 2+1 and 1+1 courses. The labs have all the basic facilities to conduct practical and also a well-equipped wet laboratory, aquaponics unit, seed rearing facilities and aquarium fish breeding unit and a hatchery for practical exposure to the students and for their research activities. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students in Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students
		Ph.D.
1.	Professor / Principal Scientist	2
2.	Senior Scientist / Associate Professor	3
3.	Scientist / Assistant Professor	
	Total	**5**

Thesis supervised/ submitted in PG/PhD Programme

Students in Aquaculture discipline are conducting research in different basic, field, and applied aspects. Different fields of research have been depicted in following figure.

Research programme of Ph.D. Scholars (2015 to 2020)

Provide year-wise list of Ph.D. dissertations along with the student and guide

2012-15		
Ms. Neha Saxena	Gonadal development and captive breeding of hill stream fish, *Barilliusbendelisis* (Hamilton, 1807)	Dr. Kiran D. Rawat
Mr. Mukesh Kumar Bairwa	Study on physiological responses of Koi carp, *Cyprinus carpio* (Linnaeus, 1758) exposed to different light spectra and photoperiod cycles	Dr. V. K Tiwari
Ms. J. Raymond Jani Angel	Effect of handling on the hormonal profile and reproductive performance of *Pengba, Osteobrama belangeri* (Valenciennes, 1844)	Dr. V. K Tiwari
Mr. Aritra Bera	Effect of hypoxia on sex-steroids regulation in Koi Carp, *Cyprinus carpio* (Linnaeus, 1758)	Dr. N. K Chadha
Mr. Charan R.	Comparative evaluation of reproductive performance of Asian Catfish, *Clarias batrachus* collected from wild and captive conditions	Dr. Kiran D. Rawat

2017

Name of Students	**Topic**	**Major Advisor**
Mr. Manoj M. Ghughuskar	Studies on mitigation of transportation stress in catla (Hamilton, 1822) fingerlings using selected immunostimulants	Dr. Neelam Saharan
Mr. Harshavardhan D Joshi	Effects of nanoconjugated Aromatase Inhibitor (AI) particles efficiency in on masculinisation of Nile Tilapia *Oreochromis niloticus* (Linnaeus, 1758)	Dr. V. K. Tiwari
Mr. Nitin Verma	A study on minimizing the heterogeneous individual growth (HIG) in freshwater prawn, *Macrobachium rosenbergii* (de Man, 1879) during nursery phase	Dr. V. K. Tiwari
Ms. Karthireddy Syamala	Growth and physiological response of *Litopenaeus vannamei* (Boone, 1931) to different carbon source based on biofloc systems	Dr. W. S. Lakra

2018

Name of students	**Topic**	**Major Advisor**
Mr. Anuraj A.	Micropropagation of selected seaweeds in Andaman & Nicobar Islands	Dr. Chandra Prakash
Mr. Katare Milind Bhagwan	Masculinization in dwarf gourami, Bhagwan *Trichogaster lalius* (Hamilton, 1822) through aromatase inhibitors	Dr. W. S. Lakra
Mr. Irshad Ahmad Hajam	Development and evaluation of anti-inhibin antibody on oocyte maturation in *Clarias batrachus* (Linnaeus, 1758)	Dr. Neelam Saharan
Ms. Rashmi S. Ambulkar	Comparative evaluation of fresh and cryopreserved milt for quality seed production of *Clarias batrachus* (Linnaeus, 1758)	Dr. C. S. Chaturvedi
Mr. Abubakar Usman	Application of GIS and remote sensing in selected limnological aspects of Powai Lake, Mumbai, India	Dr. Kiran D. Rawat

Ms. Chirom Archana	Combating the toxicity of Pendimethalin in *Cyprinus carpio* fingerlings through bioremediation and dietary manipulation	Dr. Neelam Saharan
Mr. Elzein M.H. Fahal	Effects of *Moringa oleifera* extracts on growth, maturation and reproductive performance of Asian catfish *Clarias batrachus* (Linnaeus, 1758)	Dr. Neelam Saharan
Ms. K.K.T. Nuwansi	Phytoremediation and utilization of aquaculture effluents in aquaponic recirculating system	Dr. A. K. Verma
Mr. Venkatesh R. Thakur	Abundance of clown fishes and reproductive performance of skunk clownfish, *Amphiprion akallopisos* (Bleeker, 1853) from Andaman Sea	Dr. A. K. Verma
Ms. Shilta M.T.	Studies on the biology of picnic seabream *Acanthopagrus berda* (Forsskal, 1775) from Calicut, South-West coast of India	Dr. N. K. Chadha
Mr. Vivek Shrivastava	Effect of stocking densities and partial replacement of dietary animal protein and lipid with soybean on growth and survival of *Fenneropenaeus merguiensis* (de Man, 1888)	Dr. N. K. Chadha
Mr. Raju M. Timbile	Studies on growth, survival and reproduction of discus, Sawant *Symphysodona equifasciatus* Pellegrin, 1904	Dr. Paramita B. Sawant

2019

Name of students	Topic	Major advisor.
Mr. Ravindra H.	Growth and survival of *Chanos chanos* (Forsskal, 1755) in biofloc 2015-18 based System at varying carbon sources and C:N ratio	Dr. V. K. Tiwari
Mr. Shashank Singh	Growth and physiological responses of Amur carp, *Cyprinus carpio haematopterus* (Martens, 1876) cultured in inland saline water	Dr. A. K Reddy
Ms. Somu Sunder Lingam R.	Comparative assessment of Lingam R. compensatory growth, physiological changes and characteristics of *Chanos chanos* (Forsskal, 1775) under various stunting regimes	Dr. Paramita B. Sawant
Mr. Ajay Kumar	Growth and physiological responses of *Litopenaeus vannamei* (Boone, 1931) reared in biofloc using different C/N ratios in inland saline water	Dr. A. K Reddy
Mr. C. Kalidas	Studies on mass production of marine copepods as live feed for marine finfish hatchery	Dr. B. Santosh

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students. The feedback from the PG and PhD students are given as annexure 2.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
Ph.D.	13	12	13	14	14	46.15	8.33	0	7.14	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme

(*2015-16 to 2019-2020*)

Master of Fisheries Science (Fisheries Resource Management)

6.4.1. Brief History of the Degree Programme:

This degree programme was started in the year 1996. The programme is aimed to provide the students the principles of sustainable aquatic ecosystem management and stock assessment procedures in order to generate competent and qualified fisheries experts.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FRM)	Master of Fisheries Science (Fisheries Resource Management)	**1996**	**2 years**	**8**

Only those candidates having their Bachelors Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Fisheries Resource Management)

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	FRM 501	Principles in Fisheries Management	2+1
	FRM 502	Fisheries Resources	2+1
	FRM 507	Advances in Fish Capture Technology	2+1
Minor Courses	FRM 512	Remote Sensing and GIS for Fisheries Management	1+1
Supporting Courses	FST 501	Statistical Methods	
	FST 502	Research Methodology	
Semester II			
	FRM 503	Fish Stock Assessment	2+1
	FRM 504	Practices in Fisheries management	2+1
Major Courses	FRM 505	Bio Systematics of Aquatic Fauna	1+2
	FRM 506	Aquatic Ecosystems, Biodiversity and Conservation	1+1
	FRM 508	Coastal Zone Management	2+1
	FRM 513	Climate change: Aquatic Ecosystems and Fisheries	1+1
	FRM 510	Trophodynamics in Aquatic Systems	1+1
Semester III-IV		Field Training	2
		Credit Seminar	1
		Research work	

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	3		1
2.	Senior Scientist	1		2
3.	Scientist	6		3
	Total	10		6

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	1	
2.	Lab techncian		
3.	Lab attend		
	Total	**1**	

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The department has a well-equipped lab for conducting practicals for Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning and computer-based learning.
- The division has access to anti-plagiarism tool to prevent plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuges, Spectrophotometer, fishing gear strength analyser etc.

List of Equipment

4. Automatic motorised Wrap Reel
5. Electronic Yarn Strength tester (Sartorius)
6. Electronic Twist Tester
7. Motorised Yarn Appearance Board Winding Machine
8. Microscopic image analyser Olympus
9. Projection Microscope (Sipcon)
10. Spectrofluorometer (ELICO)
11. Universal Testing Machine
12. Vertical Flammability Tester

6.4.5. **Conduct of Practical and Hands-on-Training**

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to practicals. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practicals are designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	**Ph.D.**
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	2	
	Total	**6**	**4**

Thesis supervised/ submitted in PG/PhD Programme

Students in FRM discipline are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation

Year : 2015-16

Name of the Student	Dissertation Title	Major Advisor
Ms. Manoharmayum Shaya Devi	An appraisal of single-day and multi-day gill net fishery in Satpati, Thane district, Maharashtra.	Dr. Latha Shenoy
Mr. Veerendra Singh	Effect of Grazers on seaweed distribution and biomass along Raigarh district, Maharashtra.	Dr. Geetanjali Deshmukhe
Mr. Nirmal, T.	A taxonomic study of Hermit crabs along selected districts of Maharashtra Coast.	Dr. A. K. Jaiswar
Ms. Mary Josephine P.	A study on ecological and productivity status of Masunda lake.	Dr. Asha T. Landge
Mr. Roshan Kumar Ram	Marine algal biodiversity of intertidal region of Raigad district, Maharashtra.	Dr. Geetanjali Deshmukhe
Mr. Phurin Songtheng	Study of trophic relationship in the aquatic community of Dimbhe reservoir, Maharashtra.	Dr. Asha T. Landge
Mr. Gladston, Y.	Design and operational performance of Pomfret gill nets in Satpati, Thane district, Maharashtra.	Dr. Latha Shenoy
Mr. Prem Singh Prajapat	A study on biology of white sardine *Escualosa thoracata* (Valenciennes, 1847) along Goa coast.	Dr. S.K. Chakraborty

Year : 2016-17

Name of the Student	Dissertation Title	Major Advisor
Ms. Ajina, S.M.	Morphological and molecular taxonomy of freshwater prawns and shrimps of families Palaemonidae and Atyidae in the upper stretches of Neyyar River system, Kerala, India	Dr. Asha T. Landge
Ms. Dhanya, M. Lal	Comparative Eco morphological and histological studies of the dual jaw structures in durophagous and non-durophagous teleost fishes of Indian waters in relation to phylogeny.	Dr. Z. J. Abidi
Mr. Rupam Samanta	Trawl net selectivity using square mesh codend along the Mumbai coast.	Dr. S. K. Chakraborty
Ms. Garima	Spatio-temporal variations in productivity and ichthyofaunal diversity of Dharamtar creek along Maharashtra coast.	Dr. Geetanjali Deshmukhe
Ms. Bavithra, R.	Cichlid pharyngognathy: Morphological and histomorphometric studies of tooth and tooth bearing ventral pharyngeal bone.	Dr. Z. J. Abidi
Mr. Jaspreet singh	Study on participatory GIS (PGIS) in trawl fisheries along Ratnagiri coast.	Dr. Latha Shenoy
Mr. Janaka Prasad W.	Taxonomical evaluation of Genus Dictyota (J.V. Lamouroux)-Dictyotales, Phaeophyceae based on morphology and biochemical composition.	Dr. Geetanjali Deshmukhe
Mr. Vijay Krishna Meengie	Taxonomic differentiation of selected species of genus *Sardinella* (Family: Clupeidae) from Indian waters	Dr. A. K. Jaiswar

Year: 2017-18

Name of the Student	Dissertation Title	Major Advisor
Mr. Suraj Kumar Pradhan	Gill net and Dol net fishery and resource mapping of Bhayander estuary, Maharashtra	Dr. Latha Shenoy
Mr. Abuthagir Iburahim	Dol net fishery and resource mapping of Karanja estuary, Maharashtra	Dr. Latha Shenoy
Mr. Imtiaz Ahmed	Study of the fish assemblage and trophic status of Mer Beel (Wetland), Assam	Dr. Asha T. Landge
Mr. Suman Takar	Intertidal biodiversity of mangrove ecosystem around Mumbai Coast	Dr. Geetanjali Deshmukhe

Mr. Sathish Chennuri	Taxonomic review of genus *Metapenaeus wood-mason*, 1891 from Indian waters using morphological and molecular markers	Dr. A. K. Jaiswar
Mr. Rinchen N. Bhutia	Stock structure analysis of *Ailia coila* (Hamilton,1822) from selected stretches of Brahmaputra and Ganga riverine systems	Dr. Asha T. Landge
Mr. Sri Hari M.	An interdisciplinary studies on Stock structure analysis of *Chanos chanos* (Forskal, 1775) inhabiting in Indian waters	Dr. Z. J. Abidi
Mr. Dayal Devadas	A Taxonomic Study of Shrimps of Sub-family Sergestinae (Family Sergestidae) from Indian Waters	Dr. A. K. Jaiswar
Ms. Amulya Kakati	Ichthyofaunal diversity of selected floodplain wetlands (beels) of Kamrup district, Assam with special emphasis on conservation	Dr. Z. J. Abidi

Year 2018-19

Name of the Student	Dissertation Title	Major Advisor
Mr. Abhijit Mallik	Stock structure analysis of *Priacanthus hamrur* (Forsskal, 1775) from Indian Waters	Dr. Shashi Bhushan
Mr. P. Chellamanimegalai	Taxonomical study of genus *Grateloupia* C. Agardh, (Halymeniales, Rhodophyta) Based on Morphology and biochemical composition	Dr. Geetanjali Deshmukhe
Mr. A. Shivakrishna	The impact of aquaculture on natural wetland ecosystem- Kolleru lake	Dr. Z. J. Abidi
Ms Neethu Jose	Taxonomic evaluation of Genus *Thryssa* (Family: Engraulidae) from Indian Waters	Dr. A. K. Jaiswar
Mr. Kesavan S.	Appraisal of Non-conventional & Low value fish resources from trawl along Mumbai Coast	Dr. Latha Shenoy
Ms. Jenishma, J.S.	Geo-Spatial mapping and catch composition of non-conventional and low value fish resources from trawl along Mumbai coast	Dr. Latha Shenoy
Mr. Amom Mahendrajit	Study on the direct sources of metal in the fish body and their distribution in different organs	Dr. Shashi Bhushan
Mr. Kabin Medhi	Study on Ichthyofaunal diversity, productivity and trophic index in relation to macrophyte infestation in selected beels of Kamrup District of Assam (India)	Dr. A. K. Jaiswar

Year 2019-2020

Name of the Student	Dissertation Title	Major Advisor
Mr. Abhilash Wodeyar K.	Studies on diversity and toxicity of fresh water blue green algae in Mumbai, Maharashtra	Dr. Geetanjali Deshmukhe
Ms. Anwesha Behera	Taxonomic evaluation of species of Family Hemiramphidae (Teleostei: Beloniformes) from Indian waters	Dr. A. K. Jaiswar
Mr. Jeevan T.M.	Taxonomic evaluation of species of family Exocoetidae (Teleostei: Beloniformes) from Indian waters	Dr. A. K. Jaiswar
Ms. Nely Debbarma	Studies on the bioaccumulation of Microplastics in selected marine fishes along Mumbai Coast, India	Dr. Martin Xavier
Ms. Sahina Akter	Habitat preferences of Indian Mackerel and oval bone cuttle fish in relation to oceanographic parameters off Mumbai coast	Dr. Z. J. Abidi
Ms. Shahana S.	Occurrence of Microplastics in the gastrointestinal tract of selected fishes landed along the coast of Mumbai, Maharashtra	Dr. Shashi Bhushan
Ms. Sinduja K.	Taxonomical evaluation and biochemical estimation of species of family Gelidiaceae (Rhodophyceae)	Dr. Geetanjali Deshmukhe
Ms. Suman Nama	Stock structure analysis of *Upeneus vittatus (Forsskal,1775)* from Indian waters	Dr. Shashi Bhushan

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions		✓	
3.	Did this degree programme develop skills for Entrepreneurship			✓
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application			✓
8.	Any suggestions for improvement of the program More hands-on training and practical skills			

FRM MA 908
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions		✓	
3.	Did this degree programme develop skills for Entrepreneurship			✓
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application			✓
8.	Any suggestions for improvement of the program			

FSMMAG-04
Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
MFSc.	09	09	08	08	12	0	0	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctor of Philosophy in Fisheries Resource Management

6.4.1. Brief History of the Degree Programme:

This degree programme was started in the year 1996. The programme is aimed to provide the students the principles of sustainable aquatic ecosystem management and stock assessment procedures in order to generate competent and qualified fisheries experts.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars absorbed in different national agencies (ICAR, SAU and CAUs) and in private sectors..

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (FRM)	Doctor of Philosophy in Fisheries Resource Management	2001	3 Years	6

Eligibility Criteria
B.F.Sc. &M.F.Sc. (Fisheries Resource Management)

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Fisheries Resource Management

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	FRM 601	Assessment and Conservation of Aquatic Ecosystems and Biodiversity	1+2
	FRM 602	Application of Stock Assessment Models	1+2
	FRM 603	Aquatic Ecosystem and Productivity	1+2
Minor Courses	FRM 604	Responsible Fisheries Management	1+1
Supporting Courses	FRM 605	Data Collection and Software applications in fish stock assessment	0+3
	FRM 606	Fisheries Governance	2+0
	FRM 607	Coral Reef Management	1+1
	FRM 608	Mangrove Ecosystem Management	1+1
	FST 601	Advanced Statistical Methods	2+1
	FST 602	Software for Fisheries Data Analysis and Management	0+2
Semester II	FRM 691	Doctoral Seminar I	0+1
Semester II	FRM 692	Doctoral Seminar II	0+1
Semester III	FRM 699	Doctoral Research	0+11
Semester IV	FRM 699	Doctoral Research	0+11
Semester V	FRM 699	Doctoral Research	0+11
Semester VI	FRM 699	Doctoral Research	0+12

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	3		1
2.	Senior Scientist	1		2
3.	Scientist	6		3
	Total	**10**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	1	
2.	Lab technician		
3.	Lab attend		
	Total	**1**	

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The department has a well-equipped lab for conducting practical to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning and computer-based learning.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuges, Spectrophotometer, fishing gear strength analyser.

List of Equipment

Sl. No.	Name
1.	Automatic motorised Wrap Reel
2.	Electronic Yarn strength tester (Sartorius)
3.	Electronic Twist Tester
4.	Motorised Yarn Appearance Board Winding Machine
5.	Microscopic image analyser Olympus
6.	Projection Microscope (Sipcon)
7.	Spectrofluorometer (ELICO)
8.	Universal Testing Machine
9.	Vertical Flammability Tester

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph.D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	2	
	Total	**6**	**4**

Thesis supervised/ submitted in PhD Programme

Students in FRM discipline are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Provide year-wise list of Ph.D. dissertations along with the student and guide

2015-16

Name of the Student	Dissertation Title	Major Advisor
Ms. Anulekshmi Chellappan	Fishery, bionomics and stock assessment of coastal Tuna along Maharashtra coast.	Dr. S. K. Chakraborty
Ms. Monalisa Sukham Devi	Taxonomy and biology of selected culpeids	Dr. A. K. Jaiswar
Mr. Yumnam Bedajit Singh	Ichthyofaunal diversity of Thoubal river, Manipur and biology of some endemic fishes.	Dr. S. K. Chakraborty
Mr. Lianthuamluaia	Pattern of aquatic biodiversity and trophic status of Savitri (Ranbajire) reservoir in Raigad district, Maharashtra.	Dr. Asha. T. Landge

2016-17

Name of the Student	Dissertation Title	Major Advisor
Mr. Manas H.M.	Seasonal distribution, abundance and nutritional profile of *Caulerpa* species along northwest coast of India.	Dr. Geetanjali Deshmukhe
Ms. Indira Divipala	Role of primary producers in tropics cascade of fished populations	Dr. Geetanjali Deshmukhe
Ms. Swati Priyanka Sen	Biology and stock assessment of *Scoliodon laticaudus* Muller and Henle, 1838 and *Rhizopri onodonacutus* (Rupell, 1837) from Gujrat Coast	Dr. S. K. Chakraborty
Ms. Sangeeta Mondal	Stock characterization of Silond catfish, *Silonia silondia*	Dr. J. K. Jena

2017-18

Name of the Student	Dissertation Title	Major Advisor
Mr. Shardul Gangan	Taxonomic evaluation of species of family Engraulidae occurring in Indian waters	Dr. A. K. Jaiswar
Mr. Ramkumar S.	Diversity and temporal variation of trawl catch along Mumbai coast.	Dr. A. K. Jaiswar
Mr. Sreekanth G. B	Spatio-Temporal assessment of fishery and fish biodiversity along Siridao coast off Goa	Dr. S. K. Chakraborty
Ms. Rejani Chandran	Fish diversity with reference to spatial distribution of river IB, a tributary of river Mahanadi	Dr. A. K. Jaiswar

2018-19

Name of the Student	Dissertation Title	Major Advisor
Ms. Suman Kumari	Plankton dynamics in inland floodplain wetlands of West Bengal with reference to enclosure culture	Dr. A. K. Jaiswar
Ms. Jasmin F.	Fishery, Distribution, Biology and Exploitation status of *Sepia aculeata* Van, Hasselt 1835 Off Andhra Coast	Dr. Latha Shenoy
Mr. Subal Roul	Taxonomic Revision of Family Belonidae, and Biology and Stock Assessment of *Ablennes hians* (Valenciennes, 1846) Along Kerala Coast	Dr. A. K. Jaiswar
Mr. Renjith, R.K.	Species differentiation of Family Teraponidae Along Indian Coast	Dr. A. K. Jaiswar
Ms. Elina, C.M.	Biology and stock assessment of *Saurida undosquamis* (Richardson,1848) along Mumbai Coast	Dr. S. K . Chakraborty
Mr. Kharatmol, B.R.	Study on compliance of trawl net fishery of Maharshtra coast, India with provisions of FAO-CCRF	Dr. Latha Shenoy
Ms. Divya Viswambharan	Biology and stock delineation of *Mene maculate* (Bloch and Schneider, 1801) along the Konkan-Malabar coast of India	Dr. A. K. Jaiswar

2019-20

Name of the Student	Dissertation Title	Major Advisor
Ms. Manmeet Kaur Nalwa	Studies on Biology of *Bregmaceros mcclellandi*, Thompson, 1840 along Mumbai Coast	Dr. S.K. Chakraborty
Mr. Gladston Y.	Gear-wise composition, distribution, status and trade of Elasmobranchs in Maharashtra, India	Dr. Latha Shenoy
Mr. Nenavath Rajendra Naik	GIS Based management of Trawl fishery along Vishakhapatnam coast, Andhra Pradesh	Dr. Latha Shenoy
Ms. Shaya M. Devi	An appraisal of Single day and Multi day Trawl fishery of Mumbai coast	Dr. Latha Shenoy
Mr. Sunil S. Ail	Resource use efficiency, mapping and sustainability of cage cum pone integrated culture system.	Dr. Latha Shenoy

6.4.7. Feedback of students in Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD	9	10	9	13	12	22.2	10	22.2	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Master of Fisheries Science (Post Harvest Technology)

6.4.1. Brief History of the Degree Programme:

PHT programmes in M.F.Sc. are being offered since 2000. The division has been involved in teaching, research and extension in fisheries resource harvest and post-harvest management**.**

Accomplishment

Apart from contributing immensely to the HRD in the sectors of fish processing and risk assessment, the division has been conducting research and developing man power in terms of post-graduate and PhD. students in various aspects of waste utilization, development of value added products from fishes and entrepreneurship development.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (PHT)	Master of Fisheries Science (Post Harvest Technology)	1998	2 years	5
M.F.Sc (PHT)	Master of Fisheries Science (Post Harvest Technology)	2008	2 years	7
M.F.Sc (PHT)	Master of Fisheries Science (Post Harvest Technology)	2019	2 years	10

Only those candidates having their Bachelor"s Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	26
Minor courses	06
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Post Harvest Technology)

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	PHT 501	Low Temperature Preservation of Fish and Shell Fish	2+1
	PHT 503	Applied Microbiology	2+1
	PHT 505	Applied Fish Biochemistry	2+1
	PHT 509	Fish by-products and Waste Utilization	2+1
	PHT 510	Molecular Techniques in Seafood Quality Analysis	1+1
Minor Courses	FRM 508	Coastal Zone Management	2+1
	AEM 513	Utilization and Management of Aquatic algal Resources	2+1
Supporting Courses	FST 501	Research Methodology	1+1
	FST 502	Statistical Methods	1+2
Semester II			
Major Courses	PHT 502	Thermal Processing of Fish and Fishery Products	2+1
	PHT 504	Quality Assurance, Management and Certification	2+1
	PHT 505	Value Added Fishery products	1+1
	PHT 505	Microorganisms of Public Health Significance	
Semester III-IV			
	PHT 551	Field Training	
	PHT 591	Credit Seminar	
	PHT 599	Research work	

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	3		1
2.	Senior Scientist	0		2
3.	Scientist	3		3
	Total	**6**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	2	
2.	Lab techncian		
3.	Lab attend		
	Total	2	

6.4.4. Classroom and Laboratories

- Well-furnished classrooms with audio-visual aids and internet connection are provided for MFSc students
- The laboratories in the division are well-equipped for conducting practical classes for the M.F. Sc. students as well as research experiments conducted under different projects.
- Several basic and advanced equipment such as PCR machines, biosafety cabinets, rheometer, texture analyser, fluorescent and inverted microscopes are installed in the laboratories.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- Students and staff of the division are encouraged to use anti-plagiarism tool to prevent plagiarism in thesis and publications, and to promote the academic integrity. It is mandatory for the students to submit the similarity report while submitting the thesis/dissertations to the academic cell.

List of Equipment

1. PCR machines
2. Centrifuge
3. Biosafety cabinet
4. Autoflow IR-water jacketed CO2 incubator
5. Gel-Doc
6. Anaerobic work station
7. Water bath
8. Electrophoresis units
9. SDS PAGE unit
10. 2D electrophoresis unit
11. Hybridization oven
12. Over pressure autoclave
13. Deep freezers (vertical and horizontal)
14. Digital microscopes
15. Inverted microscope
16. Fluorescent microscope
17. HPLC
18. GC-MS

19. Rheometer
20. Texture analyser
21. Spectrophotometer
22. Kjeltec protein analyser
23. Soxhlet apparatus
24. Silent cutter
25. Sausage stuffer
26. Deboner
27. Basket centrifuge
28. Vacuum sealer
29. Tray sealer
30. Battering and breading machine

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to practicals. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	3	3
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	3	2
	Total	**6**	**5**

Thesis supervised/ submitted in PG/PhD Programme

Students in PHT discipline conduct research in various basic, field level, applied and advance aspects of fish processing, risk assessment and waste utilization. Different areas of research are depicted below:

Details of M.F. Sc students' dissertation

Year : 2015-16

Name of the Student	Dissertation Title	Major Advisor
Ms. Hauzokim	Development of enrobed fish products: Improvement in functionality of coated materials by added nutraceuticals	Dr. Martin Xavier

Ms. Martina Laishram	Prevalence of *Arcobacter* spp. in seafood and their environment	Dr. B. B Nayak
Mr. Sourav Ghosh	Response of luminescent bacteria to antimicrobial property of cephalopod ink	Dr. B. B Nayak
Ms. Surekha Saraff	Development of fish paneer[tm] from *Pangasianodon hypophthalmus* mince	Dr. A. K. Balange
Ms. Utkarsha A. Keer	Quality changes in *Acetes* spp. during low temperature preservation and thermal processing	Dr. A. K. Balange
Ms. Sreepriya Prakasan	Molecular characterization of Shiga toxin-producing *Escherichia coli* from seafood	Dr. Sanath Kumar

Year : 2016-17

Name of the Student	Dissertation Title	Major Advisor
Ms.Kahiakgailiu Gonmei	Extraction and characterization of muscle protein from *Acetes* spp. and paste product development	Dr. A. K. Balange
Ms. Deepitha R. P	Effect of alginate on storage characteristics of *Pangasius hypophthalmus* mince	Dr. Martin Xavier
Mr Uday Narayan Das	Characterization of multidrug resistant enterobacteria from seafood	Dr. Sanath Kumar H
Ms. Jadhav Madhurima A	Evaluation of viscosity as an index of freshness of rohu (*Labeo rohita)*	Dr. B. B. Nayak
Ms. Sahna Don	Shelflife prediction and identification of potential spoilage organisms in *Litopenaeus vannamei* during storage	Dr. K. Nagalakshmi
Mr. Vignaesh D.	Studies on bioactive properies of protein hydrolysate from *Acetes spp.*	Dr. Martin Xavier
Ms. Sukham Tuni Devi	Development of smart packaging with dye-based sensor for monitoring fish spoilage	Dr. K. Nagalakshmi

Year: 2017-18

Name of the Student	Dissertation Title	Major Advisor
Ms. Jerusha S	Biocontrol of histamine forming Gram Negative bacteria in seafood	Dr. Sanath kumar H
Ms. Soumya Pradhan	Survivability of microaerophilic bacterial pathogens in seafood	Dr. B. B Nayak
Mr. Dipin K. M	Efficacy of selected natural antimicrobials for control of *Listeria monocytogenes* in fish and processing environment	Dr. Sanath kumar H
Ms. Lekshmi S	Use of seaweed extract as natural preservative for chill stored fish	Dr. A. K. Balange
Mr. Toni Apang	Effect of natural preservatives in icing	Dr. Martin Xavier

	medium for quality enhancement of chilled mackerel	
Mr. Subal Kumar Ghosh	Occurrence of adenoviruses in seafood in Mumbai	Ms. Manjusha L

Year 2018-19

Name of the Student	Dissertation Title	Major Advisor
Mr. P Ramakrishna Reddy	Effect of gamma irradiation on histamine forming bacteria	Dr. B. B Nayak
Ms. Pooja Saklani	Survival dynamics of methicillin resistant *Staphylococcus aureus* (MRSA) in fish and fishery products	Dr. Sanath Kumar
Ms. Kasturi Chattopadhyay	Effect of chitosan inclusion on the functional properties of emulsified sausage from *Pangasius* mince	Dr. Martin Xavier
Mr. Sambit Kisore Das	Incidence of *Cronobacter* species in fish and shellfish	Ms. Manjusha L
Ms. Barkha Rani Chetia	Detection and isolation of *Arcobacter butzleri* bacteriophage	Dr. B. B Nayak
Mr. Mohammed Akram J.S	Assessment of meat quality of *Litopenaeus vannamei* reared in inland saline water	Dr. Amjad K. Balange

Year 2019-2020

Name of the Student	Dissertation Title	Major Advisor
Ms. Affarin Tinku D.M	Quality assessment of the products prepared from *Litopenaeus vannamei* reared in inland saline water	Dr. A. K Balange
Mr. Dayakar Bandela	Eco-friendly strategies to utilize shrimp shell waste for the production of caroteno-protein and chitin	Dr. Martin Xavier K A
Ms Deeksha Bharati	Phenotypic and genotypic characterization of *Cronobacter spp* from seafood	Dr. Manjusha L
Mr. Mohammed Ihzan M P	Extraction, characterization and application of protein hydrolysate from head waste of skipjack tuna (*Katsuwonus pelamis*)	Dr. A.K Balange
Mr. Soibam Ngasotter	Prevalence of total and pathogenic *Vibrio parahaemolyticus* in the inland saline environment	Dr. Sanath Kumar
Ms. Susmita Mukherjee	Survivability of antibiotic resistant bacteria and the stability of antibiotic resistant markers in fish and processing conditions	Dr. Sanath Kumar

Ms. Sangita Bora	Utilization of fish scale by microbial intervention	Dr. B. B. Nayak

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 5.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	**Actual students admitted in the last five years**					**Attrition (%)**				
Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
MFSc	7	7	7	7	10	14.28	0	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctor of Philosophy (Post Harvest Technology)

6.4.1. Brief History of the Degree Programme

PHT programmes in Ph.D. are being offered since 2000. The division has been involved in teaching, research and extension in fisheries resource harvest and post-harvest management**.**

Accomplishments

Apart from contributing immensely to the HRD in the sectors of fish processing and risk assessment, the division has been conducting research and developing man power in terms of post-graduate and PhD. students in various aspects of waste utilization, development of value added products from fishes and entrepreneurship development.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (PHT)	Doctor of Philosophy (Post Harvest Technology)	2002	3 years	2
Ph.D. (PHT)	Doctor of Philosophy (Post Harvest Technology)	2008	3 years	4
Ph.D. (PHT)	Doctor of Philosophy (Post Harvest Technology)	2015	3 years	5

Eligibility Criteria

B.F.Sc. &M.F.Sc. (Post Harvest Technology)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Post-Harvest Technology

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	PHT 601	Principles and techniques of seafood analysis	2+1
	PHT 602	Advances in seafood processing and product development	2+1
	PHT 605	Functional properties of fish and shellfish proteins	2+1
	PHT 606	Nutraceuticals of aquatic origin	1+1
	PHT 607	Toxins and contaminants	2+1
Minor Courses	AEM 605	Aquatic plant resources and environment	2+1
	AEM 601	Advances in aquatic environmental studies	1+2
	FEC 604	Advanced marketing and price analysis	2+1
	FRM 604	Responsible fisheries management	1+1
Supporting Courses	FST 601	Advanced Statistical Methods	2+1
	FST 602	Software for Fisheries Data Analysis and Management	0+2
Semester II	PHT 691	Doctoral Seminar I	0+1
Semester II	PHT 692	Doctoral Seminar II	0+1
Semester III	PHT 699	Doctoral Research	0+11
Semester IV	PHT 699	Doctoral Research	0+11
Semester V	PHT 699	Doctoral Research	0+11
Semester VI	PHT 699	Doctoral Research	0+12

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Head of the Department	1		ICAR
2.	Principal Scientist	2		
3.	Senior Scientist	0		
4.	Scientist	3		
5.	Adjunct/Guest faculty	0		

	Total	**6**

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	2	
2.	Lab techncian	0	
3.	Lab attend	0	
	Total	**2**	

6.4.4. Classroom and Laboratories

- Well-furnished classrooms with audio-visual aids and internet connection are provided for MFSc and PhD students
- The laboratories in the division are well-equipped for conducting practical classes for the M.F. Sc. and Ph.D. students as well as research experiments conducted under different projects.
- Several basic and advanced equipment such as PCR machines, biosafety cabinets, rheometer, texture analyser, fluorescent and inverted microscopes are installed in the laboratories.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- Students and staff of the division are encouraged to use anti-plagiarism tool to prevent plagiarism in thesis and publications, and to promote the academic integrity. It is mandatory for the students to submit the similarity report while submitting the thesis/dissertations to the academic cell.

List of Equipment

1. PCR machines
2. Centrifuge
3. Biosafety cabinet
4. Autoflow IR-water jacketed CO2 incubator
5. Gel-Doc
6. Anaerobic work station
7. Water bath
8. Electrophoresis units
9. SDS PAGE unit
10. 2D electrophoresis unit
11. Hybridization oven
12. Over pressure autoclave
13. Deep freezers (vertical and horizontal)
14. Digital microscopes
15. Inverted microscope
16. Fluorescent microscope
17. HPLC
18. GC-MS

19. Rheometer
20. Texture analyser
21. Spectrophotometer
22. Kjeltec protein analyser
23. Soxhlet apparatus
24. Silent cutter
25. Sausage stuffer
26. Deboner
27. Basket centrifuge
28. Vacuum sealer
29. Tray sealer
30. Battering and breading machine

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in Ph.D. programmes

Qualified faculty in relation to intake of students of Ph.D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	3	3
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	3	2
	Total	**6**	**5**

Thesis supervised/ submitted in PhD Programme

Students in PHT discipline conduct research in various basic, field level, applied and advance aspects of fish processing, risk assessment and waste utilization. Different areas of research are depicted below:

Provide year-wise list of Ph.D. dissertations along with the student and guide

2015

Ms. Sreepriya Prakasan	Prevalence, pathogenic potential and genetic diveristy of *E.coli in seafood*	Dr. Sanath Kumar H.
Ms. Oishi Das	Diversity of extremely halophilic microorganisms in fermented fish products	Dr. B. B. Nayak
Mr. Sanjit Singh	Molecular mechanisms of antibiotic resistance in *E coli* associated with seafood	Dr. Sanath Kumar H.
Ms. Vandita	Emerging pathogenic Vibrio sp. in seafood and its environment: Distribution of virulence markers and antibiotic resistance	Dr. Sanath Kumar H.
Ms. Bhargavi Priyadarshini	Effect of different washing methods and natural additives on the quality and stability of Tilapia surimi	Dr. A. K.Balange
Ms. Suma D.	Factors influencing the activities of prolific histamine forming bacteria from fish	Dr. B. B.Nayak

2016

Ms. Sahna Don	Contamination dynamics and survival of *Salmonella enterica* in seafood and environment	Dr. Sanath Kumar H.
Ms. Deepitha R.P.	Quality improvement of Pangasius fillets by different processing interventions	Dr.A.K.Balange
Mr. Vignaesh D.	Valorization of paste shrimp (*Acetes sp*.) for the bioactive peptides and biopolymers	Dr. Martin Xavier
Ms. Madhurima A.Jadhav	Effect of commonly used additives on the functional and rheological properties of Bombay Duck (*Harpodon nehereus*) mince	Dr. B. B. Nayak
Mr. Bahni Dhar	Accelerated salt-fermentation of Pangas (*Pangasionodon hypophthalmus*) and improvement of its quality	Dr. B. B. Nayak

2017

Ms. Jerusha S.	Occurrence of Salmonella-specific phages in seafood environment and their applications	Dr. Sanath Kumar H.
Ms. Lekshmi S.	Development of seaweed-fortified fish products with enhanced nutritional quality and stability	Dr. A. K. Balange
Mr. Subal Kumar Ghosh	Combined utilization of fish and vegetable waste using microbes	Dr. B. B. Nayak
Ms. Lidiya Wilwet	Development of DNA-based methods for rapid species identification of raw and processed shrimps	Dr. B. B. Nayak
Mr. Sandeep Gore	Development and quality improvement of fish sausages from Indian Major Carps	Dr.A. K. Balange
Mr. Ajay Tandale	Quality enhancement of fish mince using green tea extract	Dr.A. K. Balange

2018

Ms.Kasturi Chattopadhyay	Interaction studies of chitosan on food macromolecules in fish mince emulsion sausage	Dr. Martin Xavier
Mr. Sambit Kishore Das	Diversity and virulence characteristics of *Vibrio* spp. in shrimp farm environments	Dr. Sanath Kumar H.
Mr.Mohammed Akram Javith	Meat quality assessment, value addition and waste utilization of fish reared in inland saline water	Dr.A. K. Balange
Mr. Ramakrishna Reddy	Application of Archaea and archaeal extracts in fish preservation	Dr. B .B. Nayak

2019

Mr. Affarin Tinku	Development, characterization and application of bio polymer based eco-friendly packaging material	Dr.A. K. Balange
Mr. Bandela Dayakar	Comparative evaluation of biopolymers obtained from shrimp shell waste by different biotechnological processes	Dr. Martin Xavier
Ms. Deeksha Bharti	Prevalence, diversity and virulence characteristics of fish-borne *Cronobacter* spp	Dr. Manjusha L.
Mr. Mohammed Ihzan M P	Biochemical and microbial quality of Masmin and possible biotechnological interventions	Dr. B. B. Nayak
Ms. Rupali Das	Development of ready-to-eat sous- vide shrimp products with improved quality using chitosan	Dr. Martin Xavier

6.4.7. Feedback of students in Ph.D. programmes
(Please provide the filled feedback forms of students on the course for the past 3 years)

The feedback from the PhD students are given as annexure 6.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	**Actual students admitted in the last five years**					**Attrition (%)**				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD PHT	7	6	6	7	8	0	0	16.6	14.28	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2020*)

M.F. Sc in Fish Biotechnology

6.4.1. Brief History of the Degree Programme

The M.F.Sc (Fish Biotechnology) degree programme was initiated with an objective to provide fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fish Biotechnology.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FGB)	Master of Fisheries Science (Fish Genetics and Biotechnology)	**2001**	**2 years**	**5**
M.F.Sc (FBT)	Master of Fisheries Science (Fish Biotechnology)	2010	2 years	8

Only those candidates having their Bachelors Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses offered in M.F.Sc (Fish Biotechnology)

A	Major courses		Çredits
1	FBT 501	Fundamentals of Molecular Biology	2+1
2	FBT 502	Concepts of Cell Biology	2+1
3	FBT 503	Gene Structure and Regulation of Expression	2+1
4	FBT 504	Genetic Engineering	2+1
5	FBT 505	Bioinformatics Tools for Fisheries	1+1
6	FBT 506	Fish Cell Culture	2+1
7	FBT 507	Aquaculture Biotechnology	2+1
1	FBT 508	Marine Biotechnology	1+1
2	FBT 509	Molecular Markers	2+1
3	FBT 510	Molecular Taxonomy and Phylogenetics	2+1
E	**MASTERS' SEMINAR**		
1	FBT 591	Master's Seminar	0+1
F	**MASTERS' RESEARCH**		
1	FBT 599	Master's Research (III semester)	0+15
2	FBT 599	Master's Research (IV semester)	0+15

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	* Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	5		1
2.	Senior Scientist	2		2
3.	Scientist	5		3
	Total	**12**		

* for UG colleges

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	2	
2.	Lab technician		
3.	Lab attendent		

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 200 books, journals and magazines.

- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuges, PAGE apparatus and Nano particle analyser.

List of Equipment

1. Gel Documentation System
2. Micro-volume spectrophotometer
3. Thermocycler
4. Realtime PCR
5. Electroporator
6. Refrigerated Microcentrifuge
7. Cell culture facility
8. Zebrafish rearing unit
9. Electrophoresis unit
10. PAGE apparatus
11. Hybridizer
12. Labinar flow
13. Biosecurity cabinet
14. -80^0C freezer
15. Bioinformatics system
16. Autoclave

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students
		Masters
1.	Professor / Principal Scientist	4
2.	Senior Scientist / Associate Professor	
3.	Scientist / Assistant Professor	2
	Total	**6**

Thesis supervised/ submitted in PG Programme

Students in FGB discipline are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation

2019

Name of the Student	Dissertation Title	Major Advisor
Ms. Pravati Kishan	Mining of regulatory non-coding RNAs (NCRNAS) and their target genes from the transcriptome data of *Clarias magur* (Hamilton, 1822)	Dr. Gireesh Babu P.
Mr. Rathod Kumara	Studies on effects of novel GnRH formulations on induced breeding of *Clarias magur*	Dr. Aparna Chaudhari
Mr. Samar Jyoti Chutia	Molecular cloning and characterization of selected reproductive genes from *Clarias magur*	Dr. Gireesh Babu P.
Mr. Shubham Varshney	Identification and characterization of microsatellite loci from *Lamellidens marginalis* (Lamarck, 1819)	Dr. A. Pavan Kumar
Mr. Yashwanth B. S.	Development and characterization of cell line from the marine ornamental fish *Amphiprion ocellaris* (Cuvier, 1830)	Dr. Mukunda Goswami
Mr. Aruna M.S.	Development of metal nano-conjugates for delivery of WSSV DNA vaccine	Dr. Aparna Chaudhari

2018

Mr. Manabesh Mahapatra	In silico mining of *Clarias magur* (Hamilton, 1822) transcriptome data for novel proteins and applications	Dr. Aparna Chaudhari
Ms. Safna P.	Expression profiling of DNA repair genes in caspase-3 knockdown zebrafish exposed to DNA damage	Dr. Gireesh Babu P.
Mr.	Establishment of cell culture system from	Dr. Mukunda

Sathiyanarayanan A.	*Pangasius hypophthalmus* (Sauvage, 1878	Goswami
Ms. Hemamalini N.	Full-Length cDNA characterization and expression profiling of kisspeptin and its receptor in *Clarias magur*	Dr. Aparna Chaudhari
Ms. Sonal Suman	Development of markers for identification of the hybrid of *Clarias magur* (Hamilton, 1822)	Dr. A. Pavan Kumar

2017

Ms. Archana Mishra	Toxicity studies on WSSV DNA vaccine in shrimp	Dr. Gireesh Babu P
Mr. Utsa Roy	In vitro optimization of promoter length for design of novel eukaryotic expression vector	Dr. Aparna Chaudhari
Ms. Rutuparnna Priyarshini	Development of molecular markers for identification of selected Tor and its hybrid species	Dr. Annam Pavan Kumar

2016

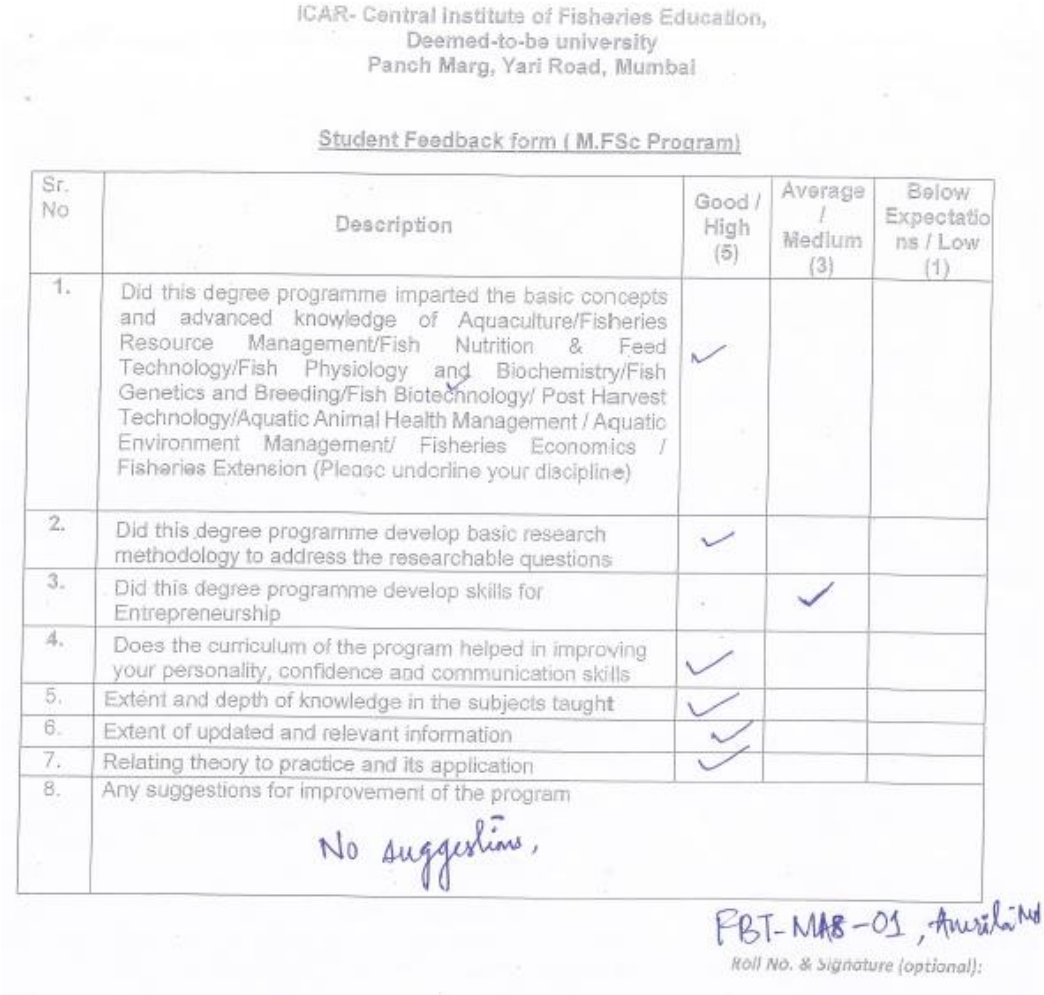
Abdulla Al. Masud	Studies on scalable purification and environmental transmission of WSSV DNA vaccine	Dr.Aparna Chaudhari
Angela Mercy A.	Pharmacokinetic studies on WSSV DNA vaccine in shrimp	Dr. P. Gireesh Babu
Chandan Haldar	Genotyping of growth selected *Macrobrachium rosenbergii* using SNP's from expressed sequences	Dr. Aparna Chaudhari
Atmaprasanthi T.	Delineating the stocks of *Mystus seenghala* (Skyes, 1839) using morphometric and molecular markers	Dr. Gopal Krishna
Raju Ram	Identification of ichthyoplankton by DNA barcoding from selected mangrove zones of Maharashtra coast	Dr. A. Pavan Kumar
Tushar P. Kumar	Full length cDNA cloning and expression on analysis of selected reproductive gene of *Clarias magur*	Dr. P. Gireesh Babu

2015

Mr. Nilav Aich	SNP mining in selected genes of giant freshwater prawn *Macrobrachium rosenbergii* (De Man, 1879)	Dr. Aparna Chaudhari
Mr. Nishant Kumar Dubey	Expression profiling of selected reproduction related genes of *Clarias batrachus* at different life stages	Dr. Gireesh Babu
Mr. Gulshan Kumar	Homology modeling and docking studies on reproductive hormones and receptors of *Clarias batrachus* (Linnaeus, 1758)	Dr. Aparna Chaudhari
Mr. Sudhanshu Raman	Molecular phylogeny of selected mahseer species using complete mitochondrial genome	Dr. A Pavan Kumar
Ms. Priyanka Kumari	Genetic characterization of *Mystus seenghala* stocks using mitochondrial DNA markers	Dr. Gopal Krishna
Mr. Ganesha	Designing the locus specific primers for novel microsatellites identified in *Clarias batrachus*	Dr. Gopal Krishna

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.



ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program: No suggestions.			

PBT-MAB-01, Anuradha

Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

FBT-MA-903
Biswaranjan Mahapatra.
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)			
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program Scientific discussion can be conducted once in a month which can be helpful for brushing up our knowledge in our subject.			

FBT-MA-904 Priyadharsini S
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program more practically applicable, Research idea can be discussed or given to the students so that Lab to Land; this ~~chain~~ chain will be continued more effectively and ~~direct~~ that is mostly focused to the farmer's level & the Biotechnology applications should be less complicative to use it in aquaculture.			

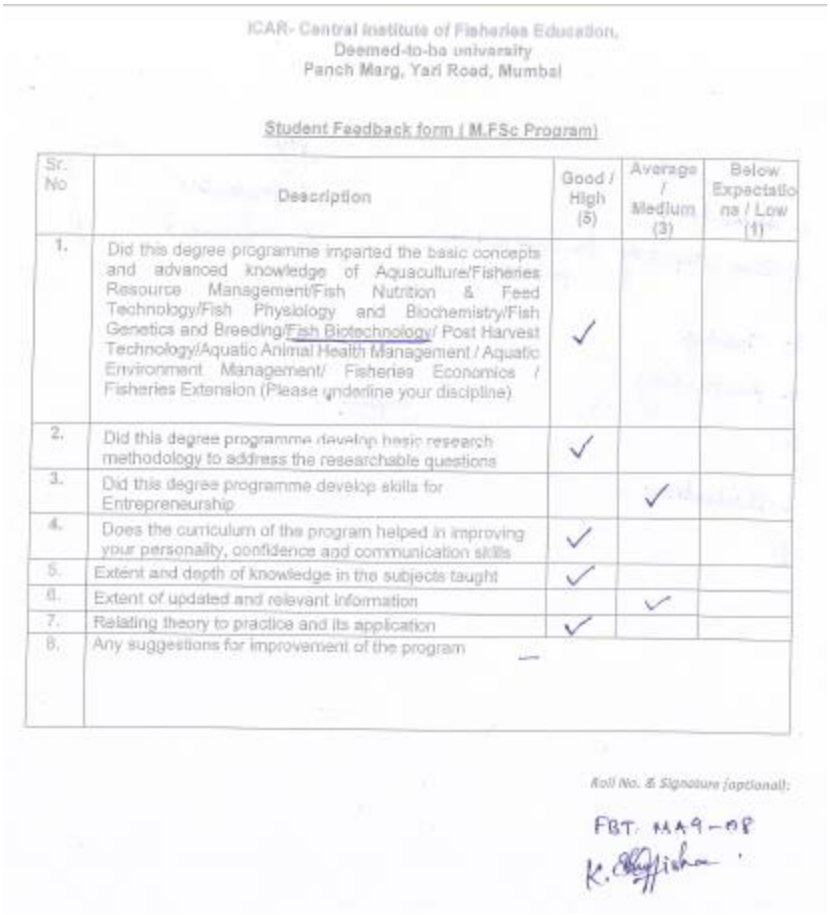
FRT-MA-905 Digyanta Dey
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program - nil -			

FBT-MA-907x Subashini.V
Roll No. & Signature (optional):



ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program —			

Roll No. & Signature (optional):

FBT. MA9-08

K. Bhujisha

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
M.F.Sc	6	6	6	6	8	0	0	0	0	12.5

6.4.9. ICT application in Curricula Delivery

The faculty use all tools such as Microsoft Power Point and online class rooms to deliver the course curricula. Additionally, the division share all the learning material to students through customized software “Academic Management System”.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme

(*2015-16 to 2020*)

PhD in Fish Biotechnology

6.4.1. Brief History of the Degree Programme

The PhD (Fish biotechnology) degree programme was initiated with an objective to provide fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fish Genetics & Breeding and Fish Biotechnology.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (FBT)	Doctor of Philosophy in Fish Biotechnology	2001	3 years	4

Eligibility Criteria

B.F.Sc. &M.F.Sc. (Fish Biotechnology)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses offered in Ph. D. in Fish Biotechnology

Sl. No.	CODE	COURSE TITLE	CREDIT
1	FBT 601	Advances in Molecular Biology	2+1
2	FBT 602	Advances in Cell Biology	2+1
3	FBT 603	Genetic Engineering of Bacteria and Viruses	2+1
4	FBT 604	Genetic Engineering of Eukaryotes	2+1
5	FBT 605	Functional Genomics	2+1
6	FBT 606	Genome Markers in Aquaculture	2+1
7	FBT 607	NGS platforms and data analysis	0+1
8	FBT 608	Advances in Proteomics and Metabolomics	1+1
9	FBT 609	Bio-Process Technology	1+0
11	FBT610	Advances in Aquaculture Biotechnology	2+0

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	5		1
2.	Senior Scientist	2		2
3.	Scientist	5		3
	Total	12		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	2	
2.	Lab technician		
3.	Lab attendent		

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 200 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuges, PAGE apparatus and Nano particle analyser.

List of Equipment

1. Gel Documentation System
2. Micro-volume spectrophotometer
3. Thermocycler
4. Realtime PCR
5. Electroporator
6. Microcentrifuge
7. Cell culture facility
8. Zebrafish rearing unit
9. Electrophoresis unit
10. PAGE apparatus
11. Hybridizer
12. Labinar flow
13. Biosecurity cabinet
14. -80^{0}C freezer
15. Bioinformatics system

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students Ph.D.
1.	Professor / Principal Scientist	4
2.	Senior Scientist / Associate Professor	
3.	Scientist / Assistant Professor	
	Total	**4**

Thesis supervised/ submitted in PG/PhD Programme

Students in FBT discipline are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of PhD students' dissertation
Year : 2015-20

Name of the Student	Dissertation Title	Major Advisor
Mr. Deepak Agarwal	Transcriptome analysis of brain and gonads at different maturity stages of *Clarias magur* (Hamilton, 1822)	Dr. Gireesh Babu P
Ms. Karthireddy Syamala	Growth and physiological response of *Litopenaeus vannamei* (Boone, 1931) to different carbon source based on bio floc systems	Dr. W. S. Lakra
Mr. T Obulesu	Studies on the synergistic of dietary squalene and N-3 polyunsaturated fatty acids (PUFA) supplementations in modulating aging process.	Dr. R. Anandan
Ms. Rekha Das	Silencing of GIH gene in *Penaeus monodon* using a DNA construct expressing RNA and its effect on maturation	Dr. Gopal Krishna
Ms. Kavita Kumari	Characterization of CYP1A gene in *Catla catla* and evaluation of it expression a biomarker for xenobioitc pollution	Dr. Gopal Krishna
Ms. Himanshu Priyadarshi	Effect of knockdown and augmentation of insulin-like androgenic gland hormone on morphotypes of *Macrobrachium rosenbergii* (De Man, 1879	Dr. Aparna Chaudhari

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 8.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
Phd	3	3	4	5	5	33.3	0	25	0	40

6.4.9. ICT application in Curricula Delivery

The faculty use all tools such as Microsoft Power Point and online class rooms to deliver the course curricula. Additionally, the division share all the learning material to students through customized software “Academic Management System”.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2020*)

Doctor of Philosophy in Fish Genetics and Biotechnology

6.4.1. Brief History of the Degree Programme

The PhD (Fish Genetics and Breeding) degree programme was initiated with an objective to provide fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fish Genetics & Breeding.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (FGB)	Doctor of Philosophy in Fish Genetics and Breeding	2001	3 Years	4

Eligibility Criteria
B.F.Sc. & M.F.Sc. (Fish Genetics and Breeding)

Mode of Admission
A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Fish Genetics and Breeding

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	FGB 601	Fish Breeding Plans	2+1
	FGB 602	Genetic Selection Methods	2+1
	FGB 603	Genetics in commercial Aquaculture	2+1
Minor Courses	FGB 604	Research Methodology in Fish Genetics	1+1
Supporting Courses	FGB 605	Advances in Cytogenetics	2+1
	FGB 606	Advances in Molecular Breeding	2+1
	FGB 607	Transgenics Production and GMOs	1+1
	FGB 608	Linear Models in Fish Genetics	2+1
	FGB 609	Fish Genomics	2+0
	FGB 610	Advances in Nanobiotechnology	1+1
	FST 601	Advanced Statistical Methods	2+1
	FST 602	Software for Fisheries Data Analysis and Management	0+2
Semester II	FGB 691	Doctoral Seminar I	0+1
Semester II	FGB 692	Doctoral Seminar II	0+1
Semester III	FGB 699	Doctoral Research	0+11
Semester IV	FGB 699	Doctoral Research	0+11
Semester V	FGB 699	Doctoral Research	0+11
Semester VI	FGB 699	Doctoral Research	0+12

6.4.2. **Faculty Strength**

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	5		1
2.	Senior Scientist	2		2
3.	Scientist	5		3
	Total	12		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	2	
2.	Lab technician		
3.	Lab attendant		

6.4.4. Classroom and Laboratories

- Two classrooms were designated to the FGB division for conducting the theory classes to the students.
- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.

- The division has a library with 200 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuges, PAGE apparatus and Nano particle analyser.

List of Equipment

1. Stereomicroscope
2. Nanoparticle analyser
3. Thermal cycler
4. -20^{0}C freezer
5. Electroporator
6. Electrophoresis unit
7. Cooling Micro-centrifuge
8. Gel documentation system
9. Computational tools (SAS; AS-REML) for quantitative data analyses.

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students Ph.D.
1.	Professor / Principal Scientist	4
2.	Senior Scientist / Associate Professor	
3.	Scientist / Assistant Professor	
	Total	**4**

Thesis supervised/ submitted inPhD Programme

Students in FGB discipline are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Mr. Irfan Ahmad Bhat	Development and characterization of chitosan nanoparticles loaded with Eurycomanone for enhancing reproductive output in *Clarias magur* (Hamilton, 1822)	Dr. Rupam Sharma
Mr. Murali S.	Comparative genomics analysis to identify potential therapeutic targets for major fish bacterial pathogens	Dr. Shrinivas Jahageerdar
Ms. Nimmy Jousy	Marker based pedigree identification and genetic parameter estimation in captive bred *Clarias batrachus* (Linnaeus, 1758)	Dr. Shrinivas Jahageerdar

6.4.7. Feedback of students in Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 9.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD	3	3	3	5	4	33.3	33.3	33.3	0	0

6.4.9. ICT application in Curricula Delivery

The faculty use all tools such as Microsoft Power Point and online class rooms to deliver the course curricula. Additionally, the division share all the learning material to students through customized software “Academic Management System”.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2020*)

M.F.Sc (Fish Genetics and Breeding)

6.4.1. Brief History of the Degree Programme

The M.F. Sc (Fish Genetics and Breeding) degree programme was initiated with an objective to provide fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fish Genetics and Breeding.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FGB)	Master of Fisheries Science (Fish Genetics and Biotechnology)	2001	2 years	**5**
M.F.Sc (FGB)	Master of Fisheries Science (Fish Genetics and Breeding)	2010	2 Years	7

Only those candidates having their Bachelor"s Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00)

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Fish Genetics and Breeding)

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	FGB 501	Principles of Genetics and Breeding	2+1
	FGB 502	Population and Quantitative Genetics	2+2
	FGB 507	Cyto and Molecular Genetics	1+1
Minor Courses	FBT 501	Molecular Biology	2+1
Supporting Courses	FST 501	Statistical Methods	
	FST 502	Research Methodology	
Semester II			
	FGB 504	Fish Breeding	1+1
	FGB 503	Principles of Selection and Selection Methods	2+1
Major Courses	FGB 505	Fish Genetic Resources and Conservation	2+1
	FGB 506	Bioinformatics and Computer Applications in Fish Genetics	0+2
	FGB 509	Molecular Breeding	1+1
	FGB 510	Nanobiotechnology in Fish Genetics	1+1
	FGB508	Cell and Tissue Culture	1+1
Semester III-IV		Field Training	2
		Credit Seminar	
		Research work	

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	5		1
2.	Senior Scientist	2		2
3.	Scientist	5		3
	Total	**12**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	2	
2.	Lab technician		
3.	Lab attendant		

6.4.4. Classroom and Laboratories

- Two classrooms were designated for the division to conduct the theory classes.
- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 200 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as PCR machine, Centrifuges, PAGE apparatus and Nano particle analyser.

List of Equipment

1. Stereomicroscope
2. Nanoparticle analyser
3. Thermal cycler
4. -20^0C freezer
5. Electroporator
6. Electrophoresis unit
7. Cooling Micro-centrifuge
8. Gel documentation system
9. Computational tools (SAS; AS-REML) for quantitative data analyses.
10. Biosafety cabinet
11. Proteomics unit

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	2	
	Total	**6**	**4**

Thesis supervised/ submitted in PG Programme

Students in FGB discipline are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation

Year : 2015-16

Name of the Student	Dissertation Title	Major Advisor
Mr. Manu Kumar G.	In-silico identification of putative essential genes and therapeutic candidates in A*eromonas hydrophila* infecting fish	Dr. S. Jahageerdar
Mr. Pravesh Kumar	Development and nano-delivery of chitosan conjugated steroidogenic acute regulatory protein gene construct in *Clarias batrachus*	Dr. Rupam Sharma
Ms. Sahana S.	The effect of different cryoprotectants on morphology and fertility of mahseer spermatozoa	Dr. Gopal Krishna
Ms. Mrinmoyee Datta	Standardization of size and dose of silver nano particles for DNA delivery in *Labeo rohita* (Hamilton, 1822)	Dr. Rupam Sharma
Mr. Anupam Tripura	A genetic study of inheritance of important economic traits in selected ornamental fishes	Dr. S. Jahageerdar

Year : 2016-17

Name of the Student	Dissertation Title	Major Advisor
Aishwarya Sharma	Development of KISS-10 nano formulation for induced maturation in *Catla catla* (Hamilton, 1822)	Dr. Rupam Sharma
Amritha Johny	A genetics study on orange type coloration in various strains of Guppy	Dr. S. Jahageerdar
K.S. Wisdom	Effect of nano-conjugated aromatase inhibitors on gonadal development in *Clarias batrachus* (Linnaeus, 1758)	Dr. Rupam Sharma
Nesnas E.A	Genetic stock characterization of *Labeo calbasu* (Hamilton, 1822) using mitochondrial markers	Dr. Gopal Krishna
Payal P.S.	Modelling of potential drug targets in *Aeromonas hydrophila* and its virtual screening for a successful inhibitor	Dr. S. Jahageerdar

Year: 2017-18

Name of the Student	Dissertation Title	Major Advisor
Ms. Riya Kumari	In silico characterization of tyrosinase of selected fish species and virtual screening selected putative modulators	Dr. Shrinivas Jahageerdar
Ms. Nilangana Kalita	Population structure of *Cyprinion semiplotum* (McClelland) based on mitochondrial DNA variations	Dr. N. S. Nagpure
Ms. Ankita Madhukalya	Genetic diversity analysis of Indian Major Carp, *Labeo calbasu* populations using molecular markers	Dr. Gopal Krishna
Mr. Nzanthung T. Yanthan	Divergent selection for body length in guppy Jahageerdar and correlated responses in economic traits	Dr. Shrinivas Jahageerdar
Ms. Sneha Surendhan	Study on nano delivery of progestin for enhancing spermiation in *Clarias magur* (Linnaeus, 1758)	Dr. Rupam Sharma

Year 2018-19

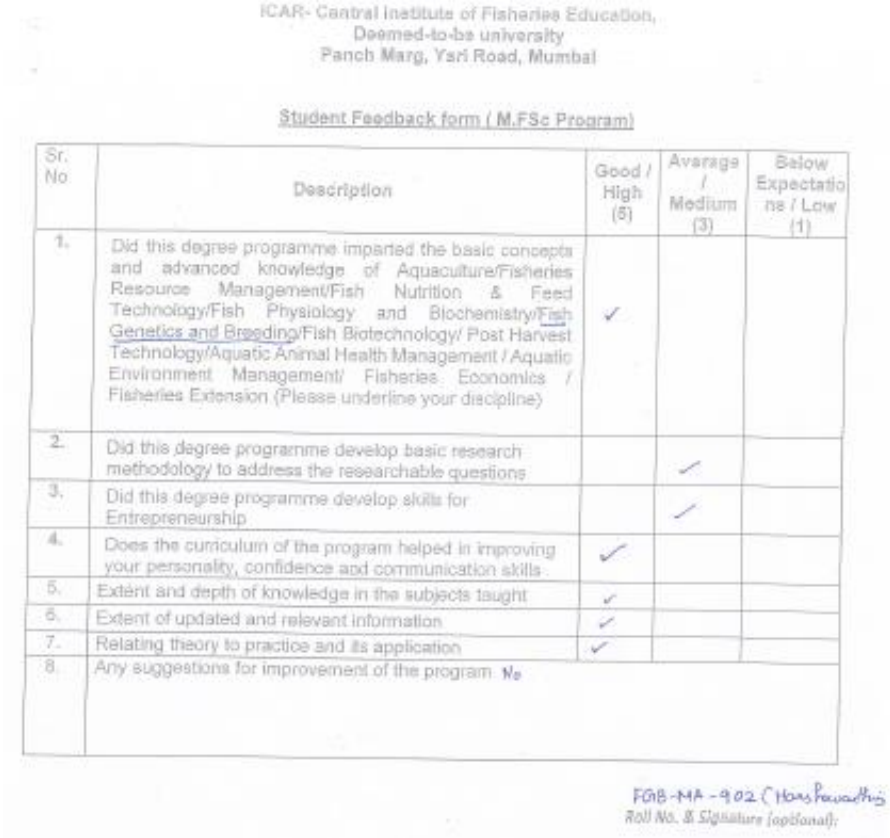
Name of the Student	Dissertation Title	Major Advisor
Ms. Saumya Pandey	In silico comparative study of melanocortin receptor and its modulators in selected fish species	Dr. S. Jahageerdar
Ms. Bhumika Arora	Identification and expression analysis of micro RNAs and their target genes in *Clarias magur* (Hamilton, 1822)	Dr. Rupam Sharma
Ms. K. Smrithi	A genetic study on ornamentation in Guppy *Poecilia reticulate* (Peters, 1859)	Dr. S. Jahageerdar

Year 2019-2020

Name of the Student	Dissertation Title	Major Advisor
Mr. Alok Kumar Sethy	Nanotoxicological study of selected carbon nanotubes in zebrafish	Dr. Rupam Sharma
Ms. M. Maheswari	Estimation of genetic parameters and response to selection for ornamentation traits in guppy, *Poecilia reticulata* (Peter, 1859)	Dr. S. Jahageerdar
Mr. Vivek S. Sompalli	Estimation of G X E interactions and genetic parameters for growth traits in *Clarias magur* reared under two agro-climatic conditions	Dr. Sunil Kumar Nayak
Ms. Triparna Pahari	In silico characterization of selected proteins involved in melanogenesis pathway and identification of the putative modulators in fish species	Dr. S. Jahageerdar
Ms. Shubra Singh	Molecular phylogeny of selected species of North-eastern India	Dr. N. S. Nagpure

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.



ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Avarage / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions		✓	
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program No			

FGB-MA-902 (Hars Pawadhy
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓	✓	
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

F-18-MA-905
Deepthale
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program			

Roll No. & Signature (optional):
FGB-MA-907.

.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
M.FSc	6	6	6	5	7	0	0	0	0	0

6.4.9. ICT application in Curricula Delivery

The faculty use all tools such as Microsoft Power Point and online class rooms to deliver the course curricula. Additionally, the division share all the learning material to students through customized software “Academic Management System”.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Masters in Fisheries Science (Aquatic Animal Health Management)

6.4.1. Brief History of the Degree Programme:

The first course on Fish Pathology & Microbiology (FPM) commenced in 2001 with an intake capacity of 5 students. A new course on Aquatic and Environmental Management (AEM) was initiated for the Masters in 2007. Fish Pathology & Microbiology (FPM) was restructured to Aquatic Animal Health Management with both masters and doctoral programme in 2010 and 2011 respectively with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Aquatic Environmental Management and Aquatic Animal Health Management.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FPM)	Post Graduation in Fish Pathology & Microbiology	2001	2 years	5
M.F.Sc (AAHM)	Post Graduation in Aquatic Animal Health Management	2010	2 years	8

The candidates who pursued their Bachelors Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates- 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Aquatic Animal Health Management)

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	AAH502	Bacterial and Fungal Diseases of Finfish and Shellfish	2+1
	AAH 503	Parasitic Diseases of Finfish and Shellfish	2+1
	AAH 504	Finfish Pathology	1+1
	AAH 507	Disease Diagnostic Techniques	2+1
	AAH 509	Principles of Aquatic Animal Health Management	2+0
Minor Courses	FNT 501	Fish Nutrition	2+1
Supporting Courses	FST 501	Research Methodology	1+1
	FST 502	Statistical Methods	1+2
Semester II			
Major Courses	AAH 501	Viral Diseases of Finfish and Shellfish	2+1
	AAH 505	Shellfish Pathology	1+1
	AAH 506	Fish & Shellfish Immunology	2+1
	AAH 508	Non-infectious Diseases and Disorders	1+1
Minor Courses	FNT 503	Feed Technology	2+1
	AEM 502	Aquatic Environment and Biodiversity	2+1
Semester III-IV	AAH 551	Field Training	0+2
	AAH 591	Master's Seminar I	0+1
	AAH 599	Master's Research	0+20

Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	06	-	1
2.	Senior Scientist	02	-	2
3.	Scientist	04	1	3
	Total	**12**	**01**	

6.4.2. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant		
2.	Lab technician	01	
3.	Lab attender		
	Total	**01**	

6.4.3. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 13 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals for the M.F.Sc. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.

List of Equipment

Histoembedder

Rotary microtome

Real time PCR

Shaker incubator

Shaker incubator

Tissue processor

80 Deep freezer

Ultra centrifuge

Thermal cycler

UV-Vis Spectrophotometer

The divisional labs are well equipped with the basic and advanced equipment such as

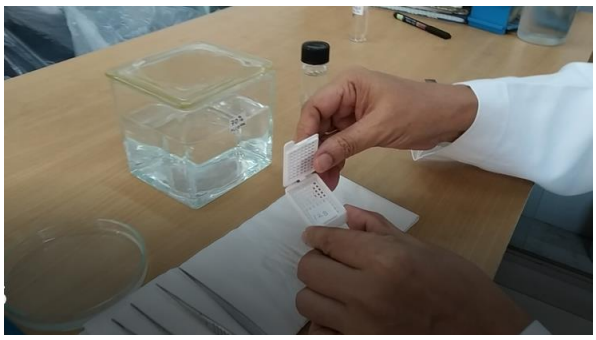
1. Automated Microbial Identification system (VITEK II)
2. CHNS Analyser
3. Gas chromatography
4. Kjeldahl Apparatus
5. Rotatory Evaporator
6. Vaccum Concentrator
7. Lyophilizer
8. Spectrophotometer
9. Microscope (Fluorescence and Bright field with good imaging set)
10. Stereozoom microscope
11. BOD Incubator
12. COD Incubator
13. -80^0 Deep Freezer (2 nos)
14. – 20 deep freezers (2 nos)
15. Autoclave
16. Digital autoclave
17. Refrigerated Centrifuge
18. Refrigerated circulating water bath
19. Refrigerated Shaking incubator
20. Cell Sorter
21. Nanodrop spectrophotometer
22. ELISA reader
23. Ultracentrifuge
24. Ice Flaker
25. Sonicator
26. Bead beater (tissue homogenizer)
27. Laminar Flow
28. Fume hood

29. Biosafety Cabinets
30. Gradient Thermocyclers
31. qPCR instruments
32. Histoembedder
33. Automatic Tissue Processor
34. Infra red sterilizer
35. Rotary microtome

Images of staff and students working in lab







Rotary Microtome
रोटरी मिक्रोटोम
thermo
scientific
HM 325

6.4.4. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.5. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	6	6
2.	Senior Scientist / Associate Professor	2	2
3.	Scientist / Assistant Professor	5	5
	Total	**13**	**13**

Thesis supervised/ submitted in PG Programme

Students in AEHMD are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation

M.F.Sc (Year : 2015-16)

Aquatic Animal Health		
Ms. Sampal Pal	Identification and characterization of selected genes involvedin toll like receptor (TLR) pathway in *Etroplus suratensis*	Dr. K. V. Rajendran
Ms. Naznin Ahmed	Development of lamp assay for detection of megalocytivirus in ornamental finfish	Dr. Gaurav Rathore
Ms. Nigairangbam Sushila	Comparative study in the vitro response of selected drugs to betanodavirus	Dr. Gayatri Tripathi
Ms. Sajal Kole	Assessment of nanodelivery of DNA construct against Edwardsiella tarda in *Labeo rohita*	Dr. Megha Bedekar
Mr. Tasok Leya	Immunomodulatory and antibacterial effect of curcumin derived from turmeric (*Curcuma long linn*.) against fish pathogenic bacteria in *Cirrhinus mrigala*	Dr. R. P Raman
Miss. Poojashree K. J	Expression studies on toll like receptors 5 in *Pangasianodon hypophthalmus* exposed to *Edwardsiella tarda*	Dr. K. Pani Parasad

Mr. Biswajit Shukla Das	Pathogenicity evaluation of *Aeromonas* spp. isolated from freshwater ornamental fishes	Dr. Kundan Kumar

M.F.Sc (Year : 2016-17)

Aquatic Animal Health Management		
Mr. Shyam K.U	Screening of culture shrimps for the presence of infectious myonecrosis virus (IMNV)	Dr. K. Pani Prasad
Ms. Riya P. Albin	In vitro assessment of chitosan conjugated bicistronic DNA nano particles	Dr. Gayatri Tripathi
Mr. Ankit Sharma	Evaluation of selected herbal bioactive molecules (HBMs) against common ectoparasite(s) of freshwater ornamental fish	Dr. R.P Raman
Ms. Kirti Komal	Development of LAMP assay for detection of *Flavobacterium columnare* in fish	Dr. Gaurav Rathore
Mr. Biswajit Das	Evaluation of immunostimulatory action of PLGA nanoparticle encapsulated *Edwardsiella tarda* antigen in *Pangasianodon hypophthalmus*	Dr. K. Pani Prasad
Mr. Shameena .S.S	Pathogenicity evaluation of A*eromonas veronii* isolated from infected freshwater ornamental fish.	Dr. Kundan Kumar
Bharath Kumar V.	Screening of common ectoparasites of ornamental fish and in vitro antiparasitic efficacy of curcumin	Dr. R. P Raman

M.F.Sc (2017-18)

Aquatic Animal Health Management		
Mr. Pangambam Ingoba Meitai	In vitro assessment of DNA construct conjugated with PLGA nanoparticles	Dr. Gayatri Tripathi
Mr. Tensubam Wanglemba	Evaluation of antigenicity of inactivated *Flavobacterium columnare* in *Labeo rohita* (Hamilton, 1822)	Dr. Gaurav Rathore
Mr. Rahul Krishnan	Molecular cloning and characterization of mitochondrial antiviral signalling protein (MAVS) gene from *Lates calcarifer* (Bloch, 1790)	Dr. K. Pani Prasad
Mr. Zahoor Mushtaq	identification, characterization and expression and profling of galectin gene in *Labeo rohita* (Hamilton, 1822)	Dr. K. Pani Prasad
Mr. Vikas K. C	Evaluation of dietary supplementation of symbiotic on growth and immunity in *Pangasianodon hypophthalmus* (Sauvage, 1878)	Dr. R. P. Raman

Ms. Judiana Nongkyanrih	Molecular characterisation and expression analysis of Interleukin-2 (IL-2) in *Labeo rohita* (Hamilton, 1822)	Dr. Megha K. Bedekar
Mr. B. Madhu Sudhana Rao	Bio-distribution, persistence, and environmental transmission studies of DNA construct conjugated with PLGA nanoparticles in *Labeo rohita* (Hamilton, 1822)	Dr. Megha K. Bedekar

M.F.Sc (2018-19)

Aquatic Animal Health Management		
Mr. Arul Murugan M.	A histopathological survey with a focus on hepatopancreas and gut of farmed Pacific White Shrimp (*Penaeus (L) vannamei*)	Dr. K. V. Rajendran
Mr. Vismai Naik T.	Surface display expression of infectious myonecrosis virus major capsid protein on Saccharomyces cerevisiae (Hansen, 1883) – A pilot study	Dr. K. Pani Prasad
Mr. Akash J. S.	Expression profiling of *Edwardsiella tarda* induced Heat Shock Proteins in *Labeo rohita* (Hamilton, 1822)	Dr. M. K. Bedekar
Ms. Pushpa Kumari	Efficacy of Neem (*Azadirachta indica*) extract against Argulus infection in goldfish (*Carassius auratus*)	Dr. R. P. Raman
Mr. Dhayanath M.	Identification and molecular characterization of antimicrobial resistance associated with gut microflora of cultured *Penaeus vannamei* (Boone, 1931)	Dr. K. Pani Prasad
Ms. Vandana V. R.	Studies on the microsporidian and myxozoan parasites infecting mudskippers	D. K. V. Rajendran
Ms. Bharathi Rathinam R.	A study on parasitic and bacterial pathogens in cage cultured pangasius catfish *Pangasianodon hypophtalamus* (Savage, 1878) from selected reservoirs of Maharashtra	Dr. Gayatri Tripathi
Mr. Mittapalli Ramesh	Antiparasitic effect of pyrethrum (Tanacetum sp.) extract on Argulus infection in goldfish (*Carassius auratus*)	Dr. R. P. Raman

M.F.Sc (2019-20)

Aquatic Animal Health Management		
Ms. Anisha V.	Re-engineering of DNA vaccine construct expressing GAPDH and IFN-γ genes: approach towards addressing the antibiotic resistance based selective marker	Dr. Megha K. Bedekar
Mr. David Waikhom	Studies on trained immunity in common carp, *Cyprinus carpio*	Dr. Jeena K.
Mr. Manjunatha K.S.	Anti-parasitic effect of Nerium indicum (Linn.) extracts on Argulus in goldfish (*Carassius auratus*)	Dr. R. P. Raman
Ms. T. Nanthini	Efficacy of *Pongamia pinnata* (Linn.) extracts against Argulus infection in goldfish (*Carrasius auratus*)	Dr. R. P. Raman
Mr. Pratapa M.G.	Development and application of quantitative real-time PCR for Tilapia Lake Virus (TiLv)	Dr. K. V. Rajendran
Ms. R. Charitha	Identification and molecular characterization of antimicrobial resistance associated with microflora of cultured fish	Dr. K. Pani Prasad

6.4.6. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application			
8.	Any suggestions for improvement of the program: More Importance should be given on research methodologies by teaching software and statistical knowledge required. More Importance on practical classes rather than assignments.			

AAH-MA-09-01

Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions		✓	
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program			

Abhijit Pramanik

Roll No. & Signature (optional):

AAH-MA-09-02

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application			
8.	Any suggestions for improvement of the program			

Abhinav Pandark
AAH-MA-09-03
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

AAH-MA-09-08 Shivam Mondal
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program: Practical Based teaching and field visit and Inspection will be helpful. Teaching Spss Software in 1st sem will be Helpful.			

AAH-MA9-09 -A. Sumanth
Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
M.F.Sc	8	8	8	8	9	12.5%	0	12.5%	0	0

6.4.8. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctoral degree in Aquatic Animal Health Management

6.4.1. Brief History of the Degree Programme

The first course on Fish Pathology & Microbiology (FPM) commenced in 2001 with an intake capacity of 5 students. Fish Pathology & Microbiology (FPM) was restructured to Aquatic Animal Health Management doctoral programme 2011 with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Aquatic Animal Health Management.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D (FPM)	Doctoral degree in Fish Pathology & Microbiology	2003	2 Years	1
Ph.D (AAHM)	Doctoral degree in Aquatic Animal Health Management	2010	3 Years	5

Doctor of Philosophy in Aquatic Animal Health Management

Eligibility Criteria

B.F.Sc. & M.F.Sc. **(**Aquatic Animal Health Management)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (as per the guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Aquatic Animal Health Management

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	AAH 602	Advances in Parasitology	1+1
	AAH 603	Advances in Immunology	2+1
	AAH 606	Biotechnological Tools in Health Management	1+1
	AAH 608	Nutritional and Toxicity related Diseases	1+1
	AAH 609	Microscopy Techniques	1+1
Semester II			
	AAH601	Advances in Fish & Shellfish Virology	1+1
	AAH 604	Advances in Bacteriology	1+1
	AAH 605	Fish Vaccinology	1+1
	AAH 607	Cell Culture Techniques	1+1
	AAH 610	Aquaculture Medicine	1+1
Supporting Courses	FST 601	Advanced Statistical Methods	2+1
	FST 602	Software for Fisheries Data Analysis and Management	0+2
Semester II	FGB 691	Doctoral Seminar I	0+1
Semester II	FGB 692	Doctoral Seminar II	0+1
Semester III	FGB 699	Doctoral Research	0+11
Semester IV	FGB 699	Doctoral Research	0+11
Semester V	FGB 699	Doctoral Research	0+11
Semester VI	FGB 699	Doctoral Research	0+12

Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	06	-	1
2.	Senior Scientist	02	-	2
3.	Scientist	04	1	3
4.	Adjunct/Guest faculty	-	-	-
	Total	**12**	**01**	

6.4.2. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant		
2.	Lab technician	01	
3.	Lab attender		
	Total	**01**	

6.4.3. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 13 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.

List of Equipment

Histoembedder

Rotary microtome

Real time PCR

Shaker incubator

Shaker incubator

Tissue processor

80 Deep freezer

Ultra centrifuge

	
Thermal cycler	UV-Vis Spectrophotometer

The divisional labs are well equipped with the basic and advanced equipment such as

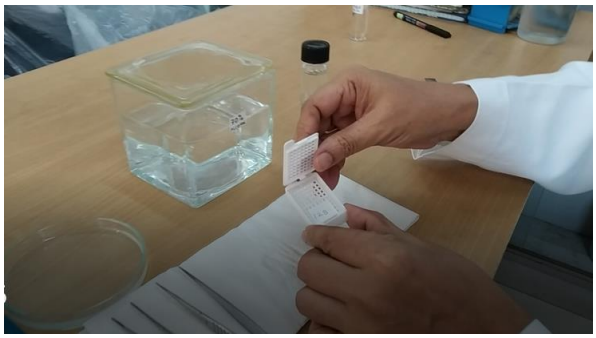
1. Automated Microbial Identification system (VITEK II)
2. CHNS Analyser
3. Gas chromatography
4. Kjeldahl Apparatus
5. Rotatory Evaporator
6. Vaccum Concentrator
7. Lyophilizer
8. Spectrophotometer
9. Microscope (Fluorescence and Bright field with good imaging set)
10. Stereozoom microscope
11. BOD Incubator
12. COD Incubator
13. -80^0 Deep Freezer (2 nos)
14. – 20 deep freezers (2 nos)
15. Autoclave
16. Digital autoclave
17. Refrigerated Centrifuge
18. Refrigerated circulating water bath
19. Refrigerated Shaking incubator
20. Cell Sorter
21. Nanodrop spectrophotometer
22. ELISA reader
23. Ultracentrifuge
24. Ice Flaker
25. Sonicator
26. Bead beater (tissue homogenizer)
27. Laminar Flow
28. Fume hood
29. Biosafety Cabinets

30. Gradient Thermocyclers
31. qPCR instruments
32. Histoembedder
33. Automatic Tissue Processor
34. Infra red sterilizer
35. Rotary microtome

Images of staff and students working in lab







Rotary Microtome
रोटरी मिक्रोटोम
thermo
scientific
HM 325

6.4.4. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.5. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	6	6
2.	Senior Scientist / Associate Professor	2	2
3.	Scientist / Assistant Professor	5	5
	Total	**13**	**13**

Thesis supervised/ submitted in PG/PhD Programme

Students in AEHMD are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Research programme of Ph.D. Scholars (2015 to 2020)

List of Students Awarded Ph.D. (2015 to 2020)

Ph.D. 2015-16 batch

Mrs. Lopamudra Sahoo	Studies on immune response and expression of immune gene in *Labeo bata* to some selected immunostimulants	K. Pani Prasad

Ph.D. 2016-17 batch

Saravanan K.	Characterization ontogeny and expression analysis of adaptive humoral immune system in rohu, *Labeo rohita* (Hamilton, 1822	M. Makesh

Ph.D. 2017-18 batch

Mr. Anutosh Paria	Molecular characterization, expression and functional anlysis of Pattern Recognition Receptors (PRR) in Asian sea bass, *Lates calcarifer* (Bloch)	Dr. K. V. Rajendran
Mr. Saurav Kumar	Studies on monogenean parasite(s) in *Pangasianodon hypophthalmus*: characterization, pathology and immune responses	Dr. R. P. Raman
Mr. Abhay Kumar	Establishment of embryonic stem-like cell culture from *Carassius auratus* (Linnaeus, 1758)	Dr. Gayatri Tripathi

Ph.D. 2018-19 batch

Mr. Raju Baitha	Study of community ecology of metazoan parasites of selected fishes from lower stretch of river Ganga in West Bengal	Dr. S. K. Manna
Mr. Gajanan S. Ghode	Molecular characterization of Toll-like Receptor (TLR-4) and expression analysis of selected downstream molecules of Pangasianodon hypophthalmus after exposure to *Edwardsiella tarda*	Dr. G. Rathore

Ph.D. 2019-20 batch

Ms. Jeena K.	Development of bio-barcode based diagnostics for detection of WSSV	Dr. K. Pani Prasad

6.4.6. Feedback of students in Ph.D. programmes

The feedback from the PhD students is given as annexure 12.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD	5	6	6	6	7	40	33	0	40	0

6.4.8. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Masters in Fisheries Science in Aquatic Environmental Management

6.4.1. Brief History of the Degree Programme

The first course on Fish Pathology & Microbiology (FPM) commenced in 2001 with an intake capacity of 5 students. A new course on Aquatic and Environmental Management (AEM) was initiated for the Masters in 2007. Fish Pathology & Microbiology (FPM) was restructured to Aquatic Animal Health Management with both masters and doctoral programme in 2010 and 2011 respectively with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Aquatic Environmental Management and Aquatic Animal Health Management.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (AEM)	Post Graduation in Aquatic Environmental Management	2007	2 years	3

The candidates who pursued their Bachelors Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates- 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences
(Aquatic and Environment Management)

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	AEM 501	Fundamentals of Environmental Sciences	2+0
	AEM 503	Chemical Interactions in the Aquatic Environment	2+1
	AEM 505	Analytical Techniques in Environmental Sciences	1+1

	AEM 508	Aquatic Pollution and Management of Water Resources	2+1
	AEM 509	Eco-toxicology	1+1
	AEM 511	Marine Ecology & Coastal Management	2+1
Minor Courses	FRM 502	Fisheries Resources	2+1
Supporting Courses	FST 502	Research Methodology	1+1
Semester II			
Major Courses	AEM 502	Aquatic Environment & Biodiversity	2+1
	AEM 504	Aquatic Microbiology	1+1
	AEM 507	Management of Inland Aquatic Ecosystems	2+1
	AEM 513	Utilization and Management of Aquatic Algal resources	2+1
Supporting Courses	FST 501	Statistical Methods	2+1
Semester III-IV		Field Training	2
		Credit Seminar	1
		Research work	20

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	06	-	1
2.	Senior Scientist	02	-	2
3.	Scientist	04	1	3
	Total	**12**	**01**	

6.4.3 Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant		
2.	Lab technician	01	
3.	Lab attender		
	Total	01	

6.4.4 Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 13 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals for M.F. Sc. students as well as for experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.

List of Equipment
Images of Equipment

The divisional labs are well equipped with the basic and advanced equipment such as

1. Automated Microbial Identification system (VITEK II)
2. CHNS Analyser
3. Gas chromatography
4. Kjeldahl Apparatus
5. Rotatory Evaporator
6. Vaccum Concentrator
7. Lyophilizer
8. Spectrophotometer
9. Microscope (Fluorescence and Bright field with good imaging set)
10. Stereozoom microscope
11. BOD Incubator
12. COD Incubator
13. -80^0 Deep Freezer (2 nos)
14. – 20 deep freezers (2 nos)
15. Autoclave
16. Digital autoclave
17. Refrigerated Centrifuge
18. Refrigerated circulating water bath
19. Refrigerated Shaking incubator
20. Cell Sorter
21. Nanodrop spectrophotometer
22. ELISA reader
23. Ultracentrifuge
24. Ice Flaker
25. Sonicator
26. Bead beater (tissue homogenizer)
27. Laminar Flow
28. Fume hood
29. Biosafety Cabinets
30. Gradient Thermocyclers
31. qPCR instruments
32. Histoembedder
33. Automatic Tissue Processor
34. Infra red sterilizer
35. Rotary microtome

6.4.5 Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6 Supervision of Students in PG programmes

Qualified faculty in relation to intake of students of Masters is as follows:

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	6	6
2.	Senior Scientist / Associate Professor	2	2
3.	Scientist / Assistant Professor	5	5
	Total	**13**	**13**

Thesis supervised/ submitted in PG/PhD Programme

Students in AEHMD are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc and Ph D students' dissertation

M.F.Sc (Year : 2015-2016)

Aquatic Environmental Management		
Name of the student	**Title of Dissertation**	**Name of Guide**
Ms. Kumari Kavita	Qualification of plastic debris in coastal environment off Mumbai, Maharashtra	P. K Pandey
Mr. Om Pravesh K. Ravi	Phytoremediation of calcium from inland salinewater through an integrated treatment system	V. S Bharati
Ms. Anjali P. Thilakan	Effect of biofloc on water quality and growth performance of *Etroplus suratensis* (bloch, 1790)	P. K Pandey
Ms. Samchetshabam Gita	Utilization of agro waste for the removal of selected textile dyes	S. P shukla
Ms. Ananya Ashok	Assesment of dioxin like compounds from sedments of selected sites in Mumbai India	P. K Pandey
Ms. Sangeetha M. Nair	Column mode remediation and evaluation of toxicity of selected metal nanoparticles towards freshwater phytoplankton	S. P Shukla

M.F.Sc (Year : 2016-2017)

Aquatic Environmental Management		
Name of the student	**Title of Dissertation**	**Name of Guide**
G. Kanthajan	Determination of conservation value of mangroves in Mumbai suburban district of maharshtra	P. K Pandey
Sagar Kumar Ram	Upscaling of *Spirulina* (Arthrospira) *platensis* biomass production in inland saline water for atmospheric carbon sequestration	S. P. Shukla
V. Santhana Kumar	Fate of nitrogenous waste in periphyton and biofloc based *Litopenaeus vannamei* shrimp culture systems	P. K. Pandey
B.N. Shashikumar	Effect of temperature on malathion toxicity in *Pangasianodon hypophthalmus*	P. K. Pandey
Benson K.	Evaluation of performance of a column mode filtration unit for chlorine free disinfection of water	S. P. Shukla

M.F.Sc (Year : 2017-2018)

Aquatic Environmental Management		
Name of the student	Title of Dissertation	Name of Guide
Ms. Jyoti Matolia	Evaluation of toxicity of triclosan towards freshwater microalgae and its removal using column mode device	Dr. S. P. Shukla
Mr. Ashutosh Kumar Singh	Development of column based water filtaration unit for arsenic (III) and arsenic (V)	Dr. S. P. Shukla
Ms. Priyanka Sahu	Development and performance evaluation of ltration unit column based water chromium (VI) removal	Dr. S. P. Shukla
Ms. Aswathy Ashokan	Qualification and mapping of marine litter in the beaches of Mumbai	Dr. Vidya Shree Bharti
Mr. Vikas Kumar Sahu	Study on the occurrence of Triclosan in sewage fed aquaculture and its toxicity in fish	Dr. Kundan Kumar

M.F.Sc (Year : 2018-2019)

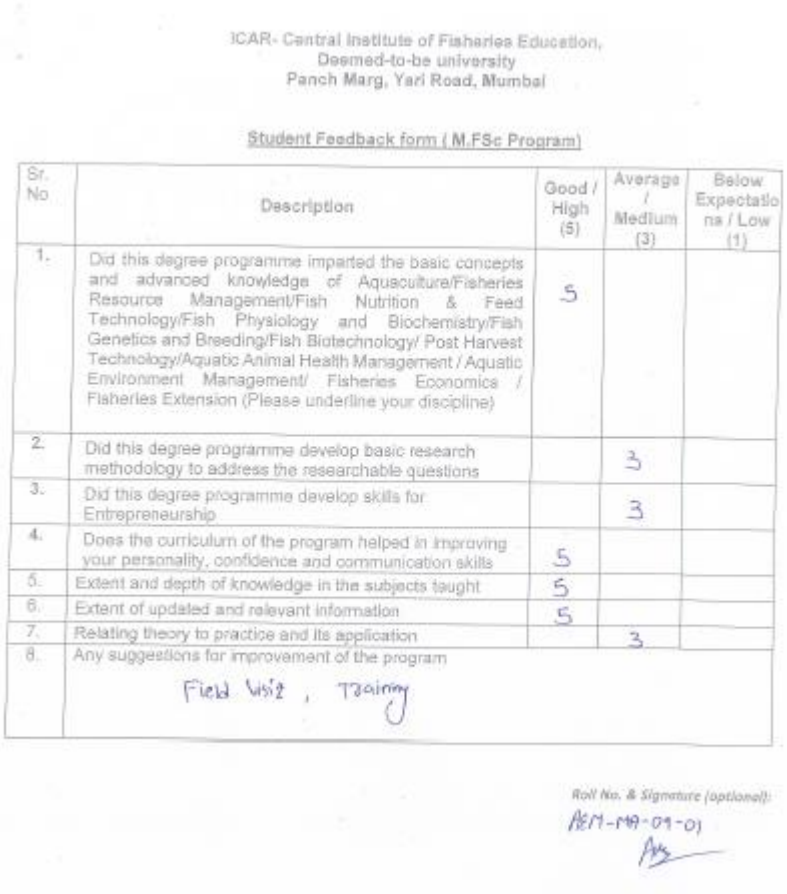
Aquatic Environmental Management		
Name of the student	Title of Dissertation	Name of Guide
Mr. Tapas Paul	Effect of temperature and pH on triclosan toxicity in *Pangasianodon hypophthalmus*	Dr. Saurav Kumar
Mr. Sutanu Karmakar	Effect of triclosan on antibiotic sensitivity of fish pathogenic bacteria from sewage-fed aquaculture ponds	Dr. Kundan Kumar
Mr. Chittaranjan Raul	Effects of Biochar on Aquatic primary productivity and pond sediment	Dr. Vidya Shree Bharti
Mr. Manickavasagam S.	Designing, fabrication and field trials of plastic removal devices	Dr. S. P. Shukla

M.F.Sc (Year : 2019-2020)

Aquatic Environment Management		
Name of the student	Title of Dissertation	Name of Guide
Ms. K. Abarna	Phyco-remediation of selected commercial textile dyes using *Spirulina (Arthrospira) platensis* and Chlorella vulgaris	Dr. Rathi Bhuvaneswari G.
Ms. Dawa Droma	Toxicological effect of carbamazepine on *Pangasianodon hypophthalmus*	Dr. Neelam Saharan
Mr. Kuntal Krishna Bera	Immunotoxicological effect of triclosan on *Pangasianodon hypophthalmus*	Dr. Saurav Kumar
Mr. Rajesh Kumar Dash	Effect of triclosan on phosphate solubilizing bacteria isolated from mangrove ecosystem	Dr. Kundan Kumar
Mr. Senguttuvan G.	Impact of biochar on greenhouse gases emission in inland saline aquaculture system	Dr. Vidya Shree Bharti

6.4.7 Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.



ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	5		
2.	Did this degree programme develop basic research methodology to address the researchable questions		3	
3.	Did this degree programme develop skills for Entrepreneurship		3	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	5		
5.	Extent and depth of knowledge in the subjects taught	5		
6.	Extent of updated and relevant information	5		
7.	Relating theory to practice and its application		3	
8.	Any suggestions for improvement of the program: Field visit, Training			

Roll No. & Signature (optional):
AEM-MM-09-01

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)		✓	
2.	Did this degree programme develop basic research methodology to address the researchable questions		✓	
3.	Did this degree programme develop skills for Entrepreneurship			
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application			✓
8.	Any suggestions for improvement of the program			

Roll No. & Signature (optional): AEM-MA-09.04

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

Roll No. & Signature (optional): Monisha Barnah, AEM-MA-09-05

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

Sakshi . AEM-MA-09-06
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

Suchismita Jana
AEM-MA-09-07
Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
M.F.Sc	6	6	6	6	8	0	0	0	0	0

6.4.9 ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctor of Philosophy in Aquatic Environmental Management

6.4.1. Brief History of the Degree Programme

Fish Pathology & Microbiology (FPM) was restructured to Aquatic Animal Health Management with both masters and doctoral programme in 2010 and 2011 respectively with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Aquatic Environmental Management and Aquatic Animal Health Management.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D (AEM)	Doctoral degree in Aquatic Environmental Management	2009	3 Years	2

Doctor of Philosophy in Aquatic Environmental Management

Eligibility Criteria
B.F.Sc. & M.F.Sc. **(**Aquatic Environmental Management)

Mode of Admission
A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Aquatic Environmental Management

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	AEM 601	Advances in Aquatic Environmental Studies	1+2
	AEM 603	Biotechnology in Aquatic Environment	2+1
	AEM 607	Management and Utilization Of Waste Water	2+1
	AEM 610	Restoration Ecology	1+1
Minor Courses	FRM 601	Assessment and Conservation Of Aquatic Ecosystems and Biodiversity	2+1
Semester II			
	AEM 605	Aquatic Plant Resources and Environment	2+1
	AEM 606	Environmental Impact Assessment	1+1
	AEM 609	Dispersal and Fate of Pollutants	2+1
Minor Courses	FRM 605	Data Collection and software application in fish stock assessment	0+3
Supporting Courses	FST 601	Advanced Statistical Methods	2+1
	FST 602	Software for Fisheries Data Analysis and Management	0+2
Semester III		Credit Seminar	1
Semester IV		Credit Seminar	1
Semester III		Doctoral Research	0+11
Semester IV		Doctoral Research	0+11
Semester V		Doctoral Research	0+11
Semester VI		Doctoral Research	0+12

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	06	-	1
2.	Senior Scientist	02	-	2
3.	Scientist	04	1	3
	Total	**12**	**01**	

6.4.3 Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant		
2.	Lab technician	01	
3.	Lab attender		
	Total	**01**	

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 13 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.

List of Equipment

The divisional labs are well equipped with the basic and advanced equipment such as

1. Automated Microbial Identification system (VITEK II)
2. CHNS Analyser
3. Gas chromatography
4. Kjeldahl Apparatus
5. Rotatory Evaporator
6. Vaccum Concentrator
7. Lyophilizer
8. Spectrophotometer
9. Microscope (Fluorescence and Bright field with good imaging set)
10. Stereozoom microscope
11. BOD Incubator
12. COD Incubator
13. -80^0 Deep Freezer (2 nos)
14. – 20 deep freezers (2 nos)
15. Autoclave
16. Digital autoclave
17. Refrigerated Centrifuge
18. Refrigerated circulating water bath
19. Refrigerated Shaking incubator
20. Cell Sorter
21. Nanodrop spectrophotometer
22. ELISA reader
23. Ultracentrifuge
24. Ice Flaker
25. Sonicator
26. Bead beater (tissue homogenizer)
27. Laminar Flow
28. Fume hood
29. Biosafety Cabinets
30. Gradient Thermocyclers
31. qPCR instruments

32. Histoembedder
33. Automatic Tissue Processor
34. Infra red sterilizer
35. Rotary microtome

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.


6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Ph.D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	6	6
2.	Senior Scientist / Associate Professor	2	2
3.	Scientist / Assistant Professor	5	5
	Total	**13**	**13**

Thesis supervised/ submitted in PhD Programme

Students in AEHMD are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Research programme of Ph.D. Scholars (2015 to 2020)

List of Students Awarded Ph.D. Degree
Ph.D. 2015-16

Mrs. Lopamudra Sahoo	Studies on immune response and expression of immune gene in *Labeo bata* to some selected immunostimulants	K. Pani Prasad

Ph.D. (2016-17)

Mr. Malachy Nwigwe Ajima	Impact of some pharmaceutical drugs on Nile Tilapia, *Oreochromis niloticus* (Linnaeus, 1758)	P. K Pandey
Mr. Ranjit L.	A study on the species diversity of trawl bycatch along Thoothukudi coast and its economic valuation	S. P Shukla
Mr. Saravanan K.	Characterization ontogeny and	M. Makesh

	expression analysis of adaptive humoral immune system in rohu, *Labeo rohita* (Hamilton, 1822	

Ph.D. (2017- 2018)

Mr. Anutosh Paria	Molecular characterization, expression and functional anlysis of Pattern Recognition Receptors (PRR) in Asian sea bass, *Lates calcarifer* (Bloch)	Dr. K. V. Rajendran
Ms. Manju Lekshmi N.	Ecological and economic impacts of aquaculture in coastal water of Goa	Dr. P. K. Pandey
Mr. Saurav Kumar	Studies on monogenean parasite(s) in *Pangasianodon hypophthalmus*: characterization, pathology and immune responses	Dr. R. P. Raman
Mr. Abhay Kumar	Establishment of embryonic stem-like cell culture from *Carassius auratus* (Linnaeus, 1758)	Dr. Gayatri Tripathi

Ph.D. Degree (2018- 2019)

Ms. Anusha D.L. Wickramasinghe	Designing and performance evaluation of a column based water filtration device for polyaromatic hydrocarbons (PAHs) removal	Dr. S. P. Shukla
Ms. Rathi Bhuvaneswari G	Bioremediation of an organophosphorus insecticide Chlorpyrifos through algae and bacteria	Dr. S. P. Shukla
Mr. Ratheesh Kumar R.	Spatio-temporal variations in stationary bag net fishery of Maharashtra coast with reference to environmental factors	Dr. A. P. Dineshbabu
Mr. Raju Baitha	Study of community ecology of metazoan parasites of selected fishes from lower stretch of river Ganga in West Bengal	Dr. S. K. Manna
Mr. Gajanan S. Ghode	Molecular characterization of Toll-like Receptor (TLR-4) and expression analysis of selected downstream molecules of *Pangasianodon hypophthalmus* after exposure to *Edwardsiella tarda*	Dr. G. Rathore

Ph.D. Degree (2019-20)

Ms. Samchetshabam Gita	Evaluation of toxicity of selected textile dyes towards microalgae and their removal using agro-waste (Sugarcane bagasse)	Dr. S.P Shukla

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 14.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD	5	4	3	3	5	0	0	33.3	33.3	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme

(*2015-16 to 2019-2020*)

Master of Fisheries Science (Fisheries Economics)

6.4.1. Brief History of the Degree Programme

From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fisheries Economics and Fisheries Extension with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fisheries Economics and Extension.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FEC)	Master of Fisheries Science (Fisheries Economics)	2010	2 years	6

Only those candidates having their Bachelor"s Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Fisheries Economics)

Course	Course Number	Course Title	Credits	Semester
Major Courses	FEC 501	Microeconomics	2+1	I
	FEC 502	Macroeconomics	3+0	I
	FEC 511	Mathematics for Fisheries Economics	1+1	I
	FEC 509	International Economics and Trade I	1+1	II
	FEC 503	Fish Marketing Management	2+1	II
	FEC 505	Introduction to Econometrics	1+1	II
	FEC 504	Economics of Development and Planning	3+0	II
	FEC 510	Environmental Economics I	1+1	II
Minor Courses	FEC 506	Fisheries Finance and Project Management	2+1	I
	FEC 513	GIS and Remote Sensing	1+1	I and II
Supporting Courses	FST 501	Statistical Methods	1+2	I/II
	FST 502	Research Methodology	1+1	I/II
Semester III-IV		Field Training	2	
		Credit Seminar	1	
		Research work		

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	5		1
2.	Senior Scientist	-		2
3.	Scientist	4		3
	Total			

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Chief Technical Officer	1	1
2.	Technical Officer	2	2
3.	Skilled Supporting Staff	1	
4.	Contractual Staff	1	
	Total		

6.4.4. Classroom and Laboratories

- The department has a well-equipped Committee room for conducting classes, seminars for the M.F. Sc. and Ph.D. students
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The division is striving to start a communication lab also for the students

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	**Ph.D.**
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	4	4
	Total	**8**	**8**

Thesis supervised/ submitted in PG Programme

Students in FEC/FEX disciplines are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation

(Year :2015-16) (FEC)

Name of the Student	Dissertation Title	Major Advisor
Mr. Sachin S.M.	As assessment of coastal ecosystem goods and services of mangroves in Uttara Kannada	Mr. Vinod Kumar Yadav
Ms.Gomathi P.	Fishers Livelihood assessment of bereaved families in Ramanathapuram District, Tamil Nadu	Dr. M. Krishnan
Mr.Pritam Tripathy	Economic analysis and livelihood assessment Fishers in Rushikulya Rookery, Ganjam of District, Odisha	Dr. Ramasubramanian V.
Mr.Khemraj Bunkar	A problem turned potent-value chain analysis of fish in Bharatpur, Rajasthan	Dr. Swadesh Prakash
Ms.Gomathy V.	Indo-Sri Lankan trans-border fishing conflict at Ramanathapuram District, Tamil Nadu	Dr. Rama Sharma
Mr.Pulin Dekha	Value chain analysis of fish seed production in Assam	Dr. Nalini Ranjan Kumar

(Year : 2016-17) (FEC)

Name of the Student	Dissertation Title	Major Advisor
Ms. Jyotimanjari Sahoo	Human resource accounting of ICAR-CIFE's higher education	Dr. Ananthan P. S.
Mr. Mohammed Meharoof	Economic impact assessment of implementation of minimum legal size of fishers of Kerala	Dr. Swadesh Prakash
Ms. Dusanapudi Lekshmi S.N.A.	Comparative economics of conventional and Lekshmi semi-organic *Litopenaeus vannamei* (Boone, 1931) farming practices in Andhra Pradesh	Dr. Rama Sharma
Ms.Tenji Pem Bhutia	Impact of modern retail markets on fish consumption in Kolkata, West Bengal	Mr.Vinod Kumar Yadav

Year: 2017-18 (FEC)

Name of the Student	Dissertation Title	Major Advisor
Ms.Frencia C. Sangma	An economic analysis of carp production in Meghalaya	Dr. Rama Sharma
Mr.Kakumanu Vivek	Social network analysis of shrimp farming for preventive viral disease diagnostics in Andhra Pradesh	Dr. Swadesh Prakash
Mr. V. Pown Kumar	Valuation of fisheries provisioning services in Cauvery basin	Dr. Ananthan P. S.
Ms. Saba Nabi	Scoping doubling income of fishers of Mumbai, Maharashtra	Dr. Neha W. Qureshi
Mr.Sandip Pal	Assessment of socio-economic vulnerability and climate resilience of coastal villages in south 24 Parganas district of West Bengal	Dr.Vinod Kumar Yadav
Mr. Shahid Gul	Consumer behaviour towards fish in Jammu and Kashmir	Dr.Swadesh Prakash

Year 2018-19 (FEC)

Name of the Student	Dissertation Title	Major Advisor
Mr. Abhilash Thapa	Economic analysis of Jhora fisheries in West Bengal	Dr. Rama Sharma
Ms. Bethsy L.	Production and supply chain analysis of different systems of aquaculture in Mizoram	Dr. Rama Sharma
Mr. Waghmare Shyam	Economic analysis of reservoir fisheries in Marathwada region, Maharashtra	Dr. Swadesh Prakash
Mr. V. Lukas	Economic valuation, governance and Human development in some Beel of Assam	Dr. Neha W. Qureshi
Mr. K. Sanjay Stephan	Analysis of marine fish production dynamics under climate change scenario in Andhra Pradesh using machine learning approaches	Dr. Vinod Yadav

Year 2019-2020 (FEC)

Name of the Student	Dissertation Title	Major Advisor
Mr. Dhiraj Devakate	Impact of Covid 19 lockdown on fish export and exporters of Maharashtra	Dr. Rama Sharma
Mr. Kaviin S.	Value chain analysis of *Peneaus vannamei* hatcheries in Tamil Nadu	Dr. Swadesh Prakash
Mr. Mondeep Saikia	Assessing vulnerability and effect of climatic variables on inland fisheries in selected reservoirs of Madhya Pradesh	Dr. Vinod Yadav
Mr. Sathya G	Socio-economic vulnerability and fisheries development: transformation pathways for an aspirational district in Andhra Pradesh	Dr. Neha W. Qureshi
Mr. Talib Mohammed	Socio-economic vulnerability and fisheries development: transformation pathways for an aspirational district in Madhya Pradesh	Dr. Ananthan P.S
Mr. Seenivasan P.	Socio-economic vulnerability and fisheries development: transformation pathways for an aspirational district in Maharashtra	Dr. Ananthan P. S
Mr. Shravan Kumar	An economic analysis of dudhawa reservoir fisheries in Chattisgarh	Dr. Rama Sharma

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program – Nill			

FEC MA 902/
Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
M.F.Sc	6	6	6	5	7	0	33.33	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Fisheries Economics, Extension and Statistics Division

Doctor of Philosophy in (Fisheries Economics)

6.4.1. Brief History of the Degree Programme

Division of Fisheries Economics, Extension and Statistics is established in the year 2001. Since then, the division was offering Masters and PhD degrees in Fish Business Management and Fisheries Extension discipline. From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fisheries Economics and Fisheries Extension with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fisheries Economics and Extension.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (FEC)	Doctor of Philosophy in Fisheries Economics	2012	3 Years	2
Ph.D. (FBM)	Doctor of Philosophy in Fish Business Management	2004-2011	3 Years	1

Doctor of Philosophy in Fisheries Economics

Eligibility Criteria

B.F.Sc. & M.F.Sc. (Fisheries Economics and Fisheries Extension)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Fisheries Economics

Course	Course Number	Course Title	Credits
Semester I			
Major Courses	FEC 601	Advanced Microeconomics	2+0
	FEC 602	Advanced Macroeconomics	2+0
	FEC 609	International Economics and Trade II	2+1
	FEC 605	Environmental Economics II	2+1
	FEC 603	Advanced Econometrics	2+1
	FEC 604	Advanced Marketing and Price Analysis	2+1
Minor Courses	FEC 612*	GIS Applications in Fisheries	0+2
	FEC 611	Linear Programming	1+1
Supporting Courses	FST 601	Advanced Statistical Methods	2+1
	FST 602*	Design of Experiments	1+1
	FST 603	Forecasting Techniques	1+1
	FST 604	Advanced Research Methodology for Social Sciences	1+1
Semester II	FEC 691	Doctoral Seminar I	0+1
Semester II	FEC 692	Doctoral Seminar II	0+1
Semester III	FEC 699	Doctoral Research	0+11
Semester IV	FEC 699	Doctoral Research	0+11
Semester V	FEC 699	Doctoral Research	0+11
Semester VI	FEC 699	Doctoral Research	0+12

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Head of the Department	Acting HoD since 2016	1	ICAR
2.	Principal Scientist	4	2	
3.	Senior Scientist	-	1	
4.	Scientist	4	1	
5.	Adjunct/Guest faculty	None		
	Total	**8**	**5**	

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Chief Technical Officer	1	1
2.	Technical Officer	2	2
3.	Skilled Supporting Staff	1	
4.	Contractual Staff	1	
	Total	**5**	**3**

6.4.4. **Classroom and Laboratories**

- The department has a well-equipped Committee room for conducting classes, seminars for the Ph.D. students
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The division is striving to start a communication lab also for the students

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	4	4
	Total	**8**	**8**

Thesis supervised/ submitted in PG/PhD Programme

Students in FEC/FEX disciplines are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Research programme of Ph.D. Scholars (2015 to 2020)
Provide year-wise list of Ph.D. dissertations along with the student and guide

List of Students Awarded Ph.D. Degree (2017- 2018)

Name of Students	Topic	Major Advisor
Mr. Apu Das	Poverty dynamics: role of fisheries in poverty alleviation in Tripura	Dr. Nalini Ranjan Kumar

List of Students Awarded Ph.D. Degree (2018- 2019)

Name of students	Topic	Major Advisor
Ms. Prathvi Rani	Impact of proposed EU-India free trade agreement (FTA) on Indian-EU seafood trade	Dr.Nalini Ranjan K
Mr. Naorem Dinesh Singh	Propagative casual price transmission in Indian Shrimp export markets	Dr. M. Krishnan
Ms. Piyashi Deb Roy	Resource use patterns, trade-offs and governance strategies for fisheries development in lake Rudrasagar, Tripura	Dr. M. Krishnan
Ms. Neha W. Qureshi	The amplified economics of an intrinsic common use resource The Dal Lake	Dr. M. Krishnan

List of students awarded Ph.D. degree during 01.04.2019 to 31.12.2019

Name of students	Topic	Major advisor
Mr.Brijesh Kumar	Economic impact assessment of *Litopenaeus vannamei* technology and its management practices in Gujarat	Dr. Rama Sharma

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 16.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
PhD	5	3	2	2	3	20	33.3	50	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Master of Fisheries Science (Fisheries Extension)

6.4.1. Brief History of the Degree Programme

From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fisheries Economics and Fisheries Extension with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fisheries Economics and Extension.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FEX)	Master of Fisheries Science (Fisheries Extension)	2007	2 years	5
M.F.Sc (FBM)	Master of Fisheries Science (Fish Business Management)	2002-2009	2 Years	5

Only those candidates having their Bachelor"s Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	**Credits**
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Fisheries Extension)

Course	**Course Number**	**Course Title**	**Credits**
Semester I			
Major Courses	FEX 501	Perspectives and Practices of Fisheries Extension	2+1
	FEX 502	Extension Communication and Methods	2+1
	FEX 503	Diffusion and Adoption of Innovations	2+1
	FEX 504	Extension Management and Human Resource Management	2+1
	FEX 505	Community Organisation and Development Practice	2+1
	FEX 506	Gender, Livelihood and Development	2+1
	FEX 507	Development Journalism	1+2
	FEX 508	Planning and Management of Development Programs	
Minor Courses			1+1
	FEC 506	Fisheries Finance and Project Management	2+1
	FEC 503	Fish Marketing Management	2+1
	FEC 504	Economics of Development and Planning	3+0
Supporting Courses	FST 501	Research Methodology	1+1
	FST 502	Statistical Methods	1+2
Semester III-IV		Field Training	2
		Credit Seminar	1
		Research work	

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	5		1
2.	Senior Scientist	-		2
3.	Scientist	4		3
	Total	**8**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Chief Technical Officer	1	1
2.	Technical Officer	2	2
3.	Skilled Supporting Staff	1	
4.	Contractual Staff	1	
	Total	**5**	**3**

6.4.4. Classroom and Laboratories

- The division has a library with more than 100 books, journals and magazines. The department has a well-equipped Committee room for conducting classes, seminars for the M.F. Sc. and Ph.D. students
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The division is striving to start a communication lab also for the students

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	4	4
	Total	**8**	**8**

Thesis supervised/ submitted in PG Programme

Students in FEX disciplines are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation

(Year : 2015-16) (FEX)

Name of the Student	Dissertation Title	Major Advisor
Mr.Sambit Priyadarshi	Impact of climate variability on fishers livelihood in coastal Odisha: An assessment of vulnerability and analysis of adaptation	Dr. S. N Ojha
Mr. T. Velumani	Fisheries governance and fishers livelihood in Krishnaraja Sagar (KRS) reservoir of Karnataka	Dr.Ananthan P.S
Mr. Gaindsingh	Livelihood impact assessment of fisheries development programmes on fish farmers of Chattisgarh	Dr. Arpita Sharma
Ms. Dileshwari Ratre	An analysis of relationship between gender and opinion leadership among fish farmers of Jashpur District, Chhattisgarh	Dr. S.N Ojha
Mr. Rajpal Yadav	Factors affecting opinion leadership in capture fisheries of Jaisamand lake in Udaipur district, Rajasthan	Dr. S.N Ojha
Ms. Sethulakshmi C. S.	Knowledge, practice and attitude towards use of sea safety devices and occupational hazards of Kerala coast among marine	Dr. Arpita Sharma

(Year : 2016-17) (FEX)

Name of the Student	Dissertation Title	Major Advisor
Mr.Chinmaya Nanda	Climate resilience of fishers in Chilka lake region	Dr. S. N. Ojha

Ms.Dhenuvakonda Kiranmayi	Design of Mobile App prototype for fish farmers of Telangana	Dr. Arpita Sharma
Ms.Meher Siddhika Vilas	Designing a Mobile App prototype for online seafood sale and purchase	Dr. Ananthan P. S.
Mr.Subhash Kumar Banjare	Adoption of indigenous technical knowledge in fisheries by tribal communities of Bastar, Chhattisgarh	Dr. S. N. Ojha
Mr.Kukhrunelu Keyho	Exploring aquaculture entrepreneurship development process for students in Nagaland	Dr. S. N. Ojha
Mr .Rajeshwaran M	Career aspirations of youth in fishing communities	Dr. Ananthan P. S.

Year: 2017-18 (FEX)

Name of the Student	Dissertation Title	Major Advisor
Ms. Atufa Regu	Climate change, vulnerability and sustainable development: the case of Wular lake fishers and fisheries	Dr.Ananthan P. S.
Ms. Napinder Kaur	Adoption of shrimp culture in inland saline areas of Punjab and Haryana	Dr. S. N. Ojha
Mr. Shakir Ahmad Mir	Fishers' livelihoods and governance in and Manasbal lakes of Kashmir	Dr. S. N. Ojha
Ms. Suchismita Prusty	Occupational hazards in fisheries sector in the State of Odisha	Dr. Arpita Sharma
Mr.Yateesh D. C.	Fisheries governance and fisher's livelihood of Shanti Sagar tank in Karnataka	Dr. Rama Sharma

Year 2018-19 (FEX)

Name of the Student	Dissertation Title	Major Advisor
Mr. Akilandeshwari A.	Assessment of Socio-Economic Vulnerability and Impact of climatic variables in Reservoir Fisheries of Maharashtra and Tamil Nadu	Dr. Vinod Yadav
Ms. Arthi R.	Occupational hazards of fish and shrimp farms in Andhra Pradesh and Tamil Nadu	Dr. Arpita Sharma
Ms. Naila Majid Bhat	Gender analysis of fisheries Sector in Kashmir	Dr. Arpita Sharma
Ms. Nidhi Katre	Fishers livelihood and fisheries governance in Bargi Reservoir of Madhya Pradesh	Dr. S. N OJha
Ms. Camelia Chattopadhyay	A study on socio-economic status of tribes involved in fisheries in Purulia district, West Bengal	Dr. S.N OJha
Mr. Seenivasan P.	Socio-economic vulnerability and fisheries Development: Transformation Pathways for an Aspirational District in Maharashtra	Dr. Ananthan P.S

Mr. Shravan Kumar	An Economic Analysis of Dudhawa Reservoir Fisheries in Chattisgarh	Dr. Rama Sharma

Year 2019-2020 (FEX)

Name of the Student	Dissertation Title	Major Advisor
Ms. Deepa Chettri	Fisheries extension and fish farmer's livelihoods in Sikkim	Dr. S. N Ojha
Mr. Ganesh Kumar	Gender dynamics in marine fisheries based livelihood of Tamil Nadu	Dr. Shivaji Argade
Ms. Martina Meinam	Students aspirations and attitudes to entrepreneurship in Manipur	Dr. S. N Ojha
Mr. Shubham Soni	Utilization of fish waste as a resource strategy of circular economy to develop novel fish skin leather	Dr. Arpita Sharma
Mr. Sourav Debnath	Gender dynamics in culture fisheries based livelihood of Tripura	Dr. Shivaji Argade
Ms. Suvetha V	Socio-economic vulnerability and fisheries development: transformation pathways for an aspirational district in Tamil Nadu	Dr. Ananthan P.S
Krishnaveni K.N	Assessment of community based fisheries management and fisher's vulnerability in Pulicat Lake, Tamil Nadu	Dr. Swadesh Prakash

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

FEx-MA09-05

Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
M.F.Sc	6	6	6	6	8	0	0	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)
Fisheries Economics, Extension and Statistics Division

Doctor of Philosophy in (Fisheries Extension)

6.4.1. Brief History of the Degree Programme:

Division of Fisheries Economics, Extension and Statistics is established in the year 2001. Since then, the division was offering Masters and PhD degrees in Fish Business Management and Fisheries Extension discipline. From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fisheries Economics and Fisheries Extension with an objective of providing fundamental and advanced knowledge and expertise in order to produce the competent and skilled fisheries professionals in the disciplines of Fisheries Economics and Extension.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (FEX)	Doctor of Philosophy in (Fisheries Extension)	2009	3 years	2

ADMISSION PROCEDURE
Doctor of Philosophy in Fisheries Extension

Eligibility Criteria

B.F.Sc. & M.F.Sc. (Fisheries Economics and Fisheries Extension)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02

Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Fisheries Extension

Course	Course Number	Course Title	Credits
Major Courses	FEX 601	Advances in Fisheries Extension Management	2+1
	FEX 602	Monitoring and Evaluation of Development Programs	2+1
	FEX 603	Advances in Information and Communication Technology	2+1
	FEX 604	Participatory Approaches in Fisheries Extension	1+2
	FEX 605	Indigenous Knowledge Systems in Fisheries	2+1
	FEX 606	Policy and Regulatory Environment in Fisheries Sector	2+1
	FEX 607	Advanced Course on Intellectual Property Rights	1+1
Minor Courses	PHT 602	Advances in Seafood Processing and Product Development	2+1
	FRM 603	Aquatic Ecosystem and Productivity	1+2
Supporting Courses	FST 601	Advanced Statistical Methods	2+1

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Head of the Department	Acting HoD since 2016	1	ICAR
2.	Principal Scientist	4	2	
3.	Senior Scientist	-	1	
4.	Scientist	4	1	
	Total	**9**	**5**	

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Chief Technical Officer	1	1
2.	Technical Officer	2	2
3.	Skilled Supporting Staff	1	
4.	Contractual Staff	1	
	Total	**5**	**3**

6.4.4. Classroom and Laboratories

- The department has a well-equipped Committee room for conducting classes, seminars for the M.F. Sc. and Ph.D. students
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The division is striving to start a communication lab also for the students

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	4	4
2.	Senior Scientist / Associate Professor		
3.	Scientist / Assistant Professor	4	4
	Total	**8**	**8**

Thesis supervised/ submitted in PG/PhD Programme

Students in FEC/FEX disciplines are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Provide year-wise list of Ph.D. dissertations along with the student and guide

List of Students Awarded Ph.D. Degree (2015-16)

Name of Students	Topic	Major Advisor
Ms. Banti Debnath	Gender perspectives in fisheries development in Tripura determints adoption behavior and sustainable livelihoods	Dr. M. Krishnan
Ms. Shivta Kureel	Systems approach to grass root level innovations in fisheries sector	Dr. Arpita Sharma

List of Students Awarded Ph.D. Degree (2017- 2018)

Name of Students	Topic	Major Advisor
Mr. Lloyd Chrispin C.	RAPFISH for assessment of fisheries management reservoir in Indian states	Dr. P. S. Ananthan

List of Students Awarded Ph.D. Degree (2018- 2019)

Name of students	Topic	Major Advisor
Mr.Suhas M. Wasave	Study of marine fisheries co-operatives societies with reference to governance and members satisfaction : A case of Maharashtra	Dr.Arpita Sharma
Mr. Bharat M. Yadav	Gender analysis of ornamental fish enterprises in Maharashtra	Dr.Arpita Sharma

List of students awarded Ph.D. degree during 01.04.2019 to 31.12.2019

Name of students	Topic	Major advisor.
Mr.Brijesh Kumar	Economic impact assessment of *Litopenaeus vannamei* technology and its management practices in Gujarat	Dr. Rama Sharma
Ms.PoojaGautam	Assessing human development of fishers in selected Indian reservoir regions	Dr. Ananthan P. S

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 18.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD	4	2	4	6	7	0	0	25	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Master of Fisheries Science (Fish Nutrition and Feed Technology)

6.4.1. Brief History of the Degree Programme

From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fish Nutrition and Feed Technology and Fish physiology and Biochemistry with an objective of moulding professionals with fundamental and advanced knowledge and expertise in the field of Fish Nutrition and Feed Technology and Fish Physiology and Biochemistry. Recently in 2019, Postdoc programme was created at the institute for all disciplines.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FNFT)	Master of Fisheries Science (Fish Nutrition and Feed Technology)	2010	2 Years	7

Only those candidates having their Bachelor"s Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Mode of Admission

A combined examination for the award of ICAR PG Scholarship and admissions to 100% seats of Master's Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	**Credits**
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Fish Nutrition and Feed Technology)

A	**MAJOR COURSES**		
	A1	**CORE COURSES**	
1	FNT 501	Fish Nutrition	2+1
2	FNT 502	Digestion, Absorption and Growth	2+1
3	FNT 503	Nutritional Energetics	2+1
4	FNT 504	Feed Technology	2+1
	A2	**OPTIONAL COURSES**	
1	FNT 505	Nutritional Requirement and Feeding Management	2+1
2	FNT 506	Feed Ingredients and Additives	1+1
3	FNT 507	Nutrition and Feeding of Crustaceans	2+1
4	FNT 508	Protein Nutrition	1+1
5	FNT 509	Lipid Nutrition	1+1
6	FNT 510	Carbohydrate Nutrition	1+1
7	FNT 511	Vitamin and Mineral Nutrition	1+1
8	FNT 512	Nutraceuticals	1+1
B	**MINOR COURSES**		
	(Courses outside major discipline / from other relevant disciplines)		
C	**SUPPORTING COURSES (Compulsory)**		
1	FST 501	Research Methodology	1+1
2	FST 502	Statistical Methods	1+2

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/ VCI/ other regulatory bodies
1.	Principal Scientist	7 (4 HQ+ 3 centre)+1 (from 2017 onwards)		1
2.	Senior Scientist	1 (till 2017)+1 (from 2017 onwards)		2
3.	Scientist	6 (4 in HQ+12 in centre)+1 (till 2017)		3
	Total	**15**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	1	
2.	Lab techncian	-	
3.	Skilled supporting staff	1	
4.	Lab attendant	2	
	Total	**4**	

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 65 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as Spray dryer, PCR machine, Centrifuges, PAGE apparatus, amino acid analyser and HPLC etc.

List of Equipment

1. Micro Jeldhal
2. Soxhlet apparatus
3. Crude fiber analyser
4. Bomb calorimeter
5. Hot air oven
6. Muffle furnace
7. Spectrophotometer
8. Weighing balance
9. Feed mill
10. Centrifuge
11. Homogeniser
12. Amino acid analyser
13. HPLC
14. 1D and 2D Gel electrophoresis unit
15. PCR machine
16. Incubators
17. Shaking incubator
18. -20 freezer
19. -80 deep freezer
20. pH meter
21. Hand pelletiser
22. Water bath
23. Ice flaker
24. Blood chemistry analyser
25. Spray dryer
26. Nanodrop
27. Microplate reader

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	Ph.D.
1.	Professor / Principal Scientist	7+1 (from 2017 onwards)	7+1 (from 2017 onwards)
2.	Senior Scientist / Associate Professor	1 (till 2017) +1 (from 2017)	1 (till 2017) +1 (from 2017)
3.	Scientist / Assistant Professor	6	6
	Total	**15**	**15**

Thesis supervised/ submitted in PG/PhD Programme

Students in FNBP division are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation (FNFT)

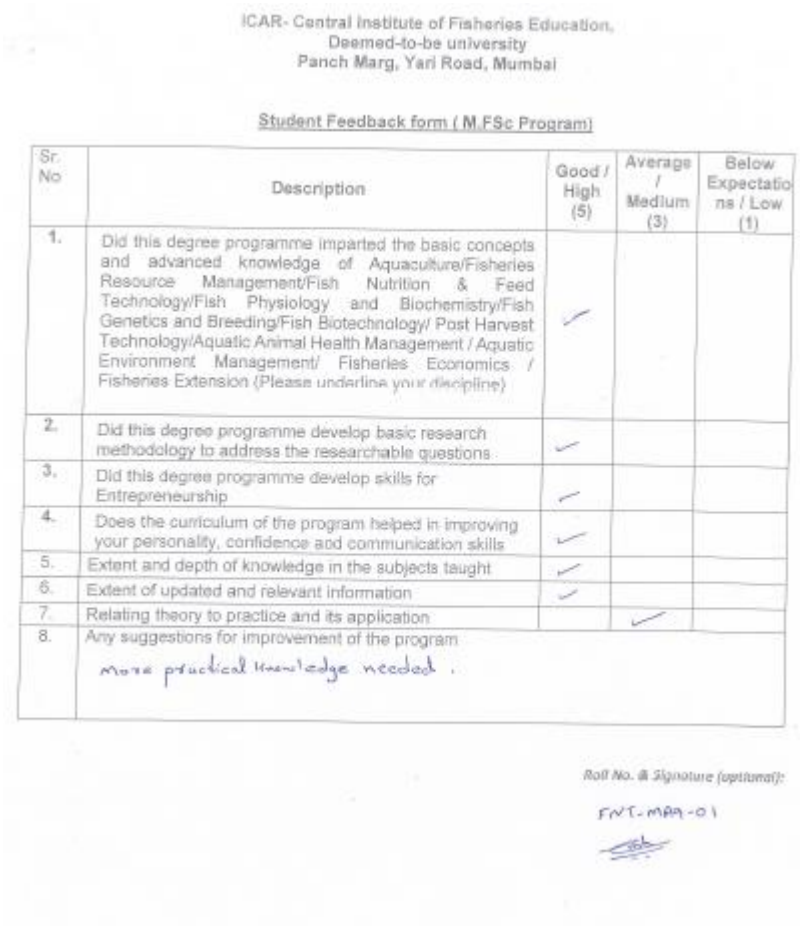
Year	Name of the Student	Dissertation Title	Major Advisor
2015-2016	Mr. Ratul Goshal	Studies on interaction of dietary fucoidan and probiotic on growth and immunity of *Labeo rohita* (Hamilton, 1822)	Dr. N. P. Sahu
2015-2016	Ms. Aparajita	Dietary effect of carbohydrate on gene and protein expression of Insulin like Growth Factors-1 in *Clarias batrachus* (Linneaus 1758)	Dr. K. K. Jain
2015-2016	Mr. Zishan Ahmad	Utilisation of Sweet Potato leaf meal as an ingredient in the diet of *Labeo rohita* (Hamilton, 1822)	Dr. Ashutosh Deo
2015-2016	Mr. P. Shanthanna	Utilization of papaya leaf meal in the diet of *Labeo rohita* (Ham.) fingerlings for growth performance	Dr. Muralidhar P. Ande
2015-2016	Ms. Sajina K A	Utilization of dietary carbohydrate in *Labeo rohita* (Hamilton, 1822) fingerlings fed with Fucoidan rich Seaweed Extract	Dr. N. P. Sahu
2015-16	Mr. Avinash Taludkar	Effect of dietary carbohydrate on gene expression of MyoD and Myf5 on *Clarias batrachus (*Linnaeus 1758)	Dr. K. K. Jain
2016-2017	Mr. Chethan Kumar Garg	Physiometabolic responses and expression of Interferon Gamma gene in *Labeo rohita* (Ham. 1822) fed with *Houttuynia cordata* leaf	Dr N. P. Sahu

2016-2017	Mr. Shiek Irfan	Differential expression study of growth and immune genes in *Danio rerio* (Hamilton, 1822) fed with graded levels of protein"	Dr. K. K. Jain
2016-2017	Mr. Prasanta Jana	Evaluation of formulated dietary supplements for gonadal inhibition and growth in *Labeo bata*	Dr. G. H. Pailan
2016-2017	Ms. Shweta Meshram	Utilization of treated sweet potato leaf meal as a replacer of de oiled rice bran in the diet of *Labeo rohita,(Hamilton,1882)*	Dr. A. D. Deo
2016-2017	Mr. Yogananda T	Utilization of *Leucaena leucocephala* (Subabul) leaf meal as a replacer of deoiled rice bran in the diet of *Labeo rohita (Hamilton,1882)* fingerlings	Dr. A. D. Deo
2017-2018	Mr. Manas Maiti	Utilisation of *Hygrophila spinosa* leaf meal in the diet of *Labeo rohita*	Dr. N. P. Sahu
2017-2018	Ms. Deep Jyoti Bora	Evaluation of mixed leaf meal in the diet of *Labeo rohita* (Hamilton,1882) fingerling	Dr. Ashutosh Deo
2017-2018	Ms. Sraddhanjali Sahoo	Alternate feeding strategies to enhance the utilisation of leaf meal based diet in *L. rohita* fingerlings	Dr. K. K. Jain
2018-2019	Mr. Anakhy Mondal	Evaluation of mixed leaf meal supplemented with synthetic amino acids and exogenous fingerlings enzymes in the diet of *Labeo rohita*	Dr. N. P. Sahu
2018-2019	Mr. Chinmay Nanda	Studies on dietary protein Requirement *of Litopenaeus vannamei* juveniles reared in Inland Saline water	Dr. Parimal Sardar
2018-2019	Ms. Gopika Radhakrishnan	Enhancement of feed intake and growth through dietary intervention in Common carp reared at low temperature	Dr. Ashutosh D Deo
2018-2019	Mr. Husain N	Evaluation of green pea, *Pisum sativum* Leaf meal in the diet of *Labeo rohita* fingerlings	Dr. Sikendra Kumar
2018-2019	Mr. Krishna Pada Singha	Studies on Dietary Protein Requirement of GIFT tilapia fingerlings reared in Inland Saline water	Dr. Shamna N
2018-2019	Mr. Thirunavukkarasar R.	Studies on Optimum Dietary protein to energy ratio in the diet of Genetically Improved Farmed Tilapia (GIFT) Fingerlings Reared in Inland Saline water	Dr. Pankaj Kumar
2019-‘20	Ms. Chandan G M	Utilization of fermented mixed leaf meal in the diet of *Labeo rohita* (Hamilton, 1822) fingerlings through alternate feeding schedule	Dr. N. P. Sahu
2019-‘20	Ms. Nisha Chuphal	Dietary lipid requirement of *P. vannamei* (Boone, 1931) juveniles reared in inland saline water	Dr. Parimal Sardar

2019-'20	Mr. Shiv Kumar	Dietary intervention for enhancing feed intake and growth in *Labeo rohita* reared at low temperature	Dr. Ashutosh D Deo
2019-'20	Mr. Tanmoy Kumar Manna	Utilization of fermented *Moringa oleifera* leaf meal in the diet of *Labeo rohita* (Hamilton, 1822) fingerlings	Dr. Sikendra Kumar
2019-'20	Mr. Vijayakumar Sidramappa Mannur	Dietary lipid requirement of GIFT Tilapia juveniles reared in inland saline water	Dr. Shamna.N

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.



ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program: more practical knowledge needed.			

Roll No. & Signature (optional):

FNT-MPA-01

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program NO			

Roll No. & Signature (optional):
FNF MA9-03

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program more Practical exposure outside will be good			

A. Raghuraman
FNFT-MA9-05
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program Farmer, Industrial interactions can be improved.			

Roll No. & Signature (optional):
FMT MA9-08

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program —			

(FMT-MA9-03) M. Dhase
Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
MFSc	6	6	6	6	8	16.66	0	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctor of Philosophy in Fish Nutrition Feed Technology

6.4.1. Brief History of the Degree Programme

From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fish Nutrition and Feed Technology and Fish physiology and Biochemistry with an objective of moulding professionals with fundamental and advanced knowledge and expertise in the field of Fish Nutrition and Feed Technology and Fish Physiology and Biochemistry. Recently in 2019, Postdoc programme was created at the institute for all disciplines.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D (FNFT)	Doctor of Philosophy in Fish Nutrition Feed Technology	2010	3 Years	2

Eligibility Criteria

B.F.Sc. &M.F.Sc. (Fish Nutrition and Feed Technology)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the earlier guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Fish Nutrition and Feed Technology

	MAJOR COURSES	**28 Credits 15 (9+6)**
	MAJOR COMPULSORY COURSES	**9**
FNT 601	Bioenergetics	2+1
FNT 602	Advances in Feed Technology	2+1
FNT 603	Larval and Brood Stock Nutrition	2+1
	MAJOR OPTIONAL COURSES	**6**
FNT 604	Advances in Nutrition	2+1
FNT 605	Nutrigenomics	1+1
FNT 606	Nutraceuticals	1+1
FNT 607	Feed Intake and Feeding Behaviour	1+1
	Minor courses *(To be offered from other disciplines)*	**8**
	Supporting courses	**5**

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/ VCI/ other regulatory bodies
1.	Principal Scientist	8(4 HQ+ 3 centre)+1 (from 2017 onwards)		1
2.	Senior Scientist	1 (till 2017)+1 (from 2017 onwards)		2
3.	Scientist	6 (4 in HQ+12 in centre)+1 (till 2017)		3
	Total	**15**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	1	
2.	Lab techncian	-	
3.	Skilled supporting staff	1	
4.	Lab attendant	2	
	Total	**4**	

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 65 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as Spray dryer, PCR machine, Centrifuges, PAGE apparatus, amino acid analyser and HPLC etc.

List of Equipment

1. Micro Jeldhal
2. Soxhlet apparatus
3. Crude fiber analyser
4. Bomb calorimeter
5. Hot air oven
6. Muffle furnace
7. Spectrophotometer
8. Weighing balance
9. Feed mill
10. Centrifuge
11. Homogeniser
12. Amino acid analyser
13. HPLC
14. 1D and 2D Gel electrophoresis unit
15. PCR machine
16. Incubators
17. Shaking incubator
18. -20 freezer
19. -80 deep freezer

20. pH meter
21. Hand pelletiser
22. Water bath
23. Ice flaker
24. Blood chemistry analyser
25. Spray dryer
26. Nanodrop
27. Microplate reader

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.

6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	**Ph.D.**
1.	Professor / Principal Scientist	7+1 (from 2017 onwards)	7+1 (from 2017 onwards)
2.	Senior Scientist / Associate Professor	1 (till 2017) +1 (from 2017)	1 (till 2017) +1 (from 2017)
3.	Scientist / Assistant Professor	6	6
	Total	**15**	**15**

Thesis supervised/ submitted in PG/PhD Programme

Students in FNBP division are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Research programme of Ph.D. Scholars (2015 to 2020)
Provide year-wise list of Ph.D. dissertations along with the student and guide

Year	Name of the Student	Thesis Title	Major Advisor
2015-2016	Mr. Amit Ranjan	Strategies for maximizing utilization of de-oiled rice bran in the diet of *Labeo rohita* (Hamilton, 1822)	Dr. N. P. Sahu
2015-2016	Mr. Sarvendra Kumar	Optimizing the utilization of De Oiled rice bran in the diet of *Labeo rohita* (Hamilton, 1882) based on metabolic and molecular responses	Dr. N. P.Sahu
2015-2016	Mr. Bhushan N Sanap	Studies on dietary manipulation of protein: carbohydrate ratios for the development of *Clarias batrachus* female broodstock	Dr. K. K. Jain
2015-2016	Mr. Ranjan Singh	Dietary evaluation of ractopamine and L-carnitine at different lipid levels	Dr. K. K. Jain
2016-2017	Mr. Mir IshfaqNazir	Studies of selected digestive enzymes during ontogenic development and their responses to diet in *Clarias batrachus* (Linnaeus, 1758) juveniles	Dr. K. K. Jain
2017-2018	Ms. Sajina K. A	Utilization of *Chromolaena ordata* leaf meal and its protein concentrate fortified with nutraceutical in the diet of *Labeo rohita* fingerling	Dr. N. P. Sahu
2017-2018	Mr. Avinash Talukdar	Nutritional evaluation of leaf meal based feed with variable protein levels in shrimp and finfish under polyculture system reared in inland saline water	Dr. Ashutosh D. Deo
2017-2018	Mr. Hafeef Roshan	Evaluation of mucuna leaf meal based diet on growth and reproductive performance of *Cyprinus carpio*	Dr. Ashutosh D. Deo
2017-2018	Mr. Dilip Kumar	Evaluation of dietary herbal stimulants on nutrient digestibility, growth and immuno responses in *Labeo rohita* fed with Sesbania (*Sesbania culeata*) leaf meal based diet	Dr. N. P. Sahu
2018-2019	Mr. Prasanta Jana	Dietary intervention for improving growth and immuno-physiological responses in *Litopenaeus vannamei* (Boone, 1931) juveniles reared in inland saline water	Dr. N. P. Sahu
2018-2019	Mr. Mritunjoy Paul	Dietary intervention for improving growth and immuno-physiological responses in GIFT tilapia fingerlings reared in inland saline water	Dr. Parimal Sardar
2019-2020	Mr. Manas Kumar Maiti	Optimisation of dietary crude protein based on ideal protein concept for *Penaeus vannamei* (Boone, 1931) juveniles reared in inland saline water	Dr. N. P. Sahu
2019-2020	Mr. Chetan Kumar Garg	Optimisation of dietary crude protein based on ideal protein concept for GIFT tilapia juveniles reared in inland saline water	Dr. Parimal Sardar

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 20.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
PhD	4	5	4	2	3	25	20	25	50	33

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Master of Fisheries Science (Fish Physiology and Biochemistry)

6.4.1. Brief History of the Degree Programme

. From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fish Nutrition and Feed Technology and Fish physiology and Biochemistry with an objective of moulding professionals with fundamental and advanced knowledge and expertise in the field of Fish Nutrition and Feed Technology and Fish Physiology and Biochemistry. Recently in 2019, Postdoc programme was created at the institute for all disciplines.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The Post Graduates are technically sound enough to compete at the national level for securing scholarships, fellowships, and admission for higher studies. Most of the graduates got job in government and private sectors, and some of them started entrepreneurship. The Department has produced significant post-graduates (M.F.Sc.) till 2020 who are serving in the State / Central Govt. Establishments / ICAR Institutes / Agricultural Universities and Banking Sectors etc.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
M.F.Sc (FNB)	Master of Fisheries Science (Fish Nutrition and Biochemistry)	2001	2 years	Discontinued
M.F.Sc (FPB)	Master of Fisheries Science (Fish Physiology and Biochemistry)	2010	2 years	8

Only those candidates having their Bachelor"s Degree in Fisheries Science (B.F.Sc.) under the 10+2+4 system are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates, 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).

Credit Requirements (As per the earlier guidelines)

Subject	**Credits**
Major courses	23
Minor courses	09
Supporting courses	05
Credit seminar	01
Field Training	02
Thesis	20
Total	**60**

Courses Offered in Master of Fisheries Sciences (Fish Physiology and Biochemistry)

A	**MAJOR COURSES**			**20 Credits**
	A1	**CORE COURSES**		12 Credits
1	FPB 501	Fish Physiology	2+1	
2.	FPB 502	Reproductive Physiology and Endocrinology	2+1	
3	FPB 503	Fish Biochemistry	2+1	
4	FPB 504	Metabolism of Biomolecules	2+1	
	A2	OPTIONAL COURSES		8 Credits
1	FPB 505	Tools and Techniques in Biochemistry	1+1	
2	FPB 506	Cardiovascular System and Respiratory Physiology	2+1	
3	FPB 507	Immunobiology	1+1	
4	FPB 508	Cellular and Molecular Physiology	2+1	
5	FPB 509	Sensory Physiology	1+1	
6	FPB 510	Physiology of Fish Behaviour	1+1	
7	FPB 511	Pharmaco-biology of Aquaculture Drugs	1+1	
8	FPB 512	Physiology of Excretion and Osmoregulation	1+1	
9	FPB 513	Eco-physiology of Fishes	1+1	
10	FPB 514	Enzymology	2+1	
11	FPB 515	Diagnostic Biochemistry	1+1	
12	FPB 516	Fish Nutrigenomics	2+1	
13	FPB 517	Aquatic radioecology	2+1	
B	**MINOR COURSES** (Courses outside major discipline/from other relevant disciplines)			**9 Credits**
C	**SUPPORTING COURSES** (Compulsory)			**5 Credits**
1	FST 501	Research Methodology	1+1	
2	FST 502	Statistical Methods	1+2	
		Total Course Work Credits		**34 Credits**

D	**MASTERS' SEMINAR**		**1 Credits**
1	FPB 591 Masters' Seminar I	0+1	
E	**FIELD TRAINING**		**2 credits**
1	FPB 551 Field Training Phase I	0+2	
F	**MASTERS' RESEARCH**		**20 Credits**
1	FPB 599 Masters' Research (Semester III)	0+10	
2	FPB 599 Masters' Research (Semester IV)	0+10	
	Total M.F.Sc. Program Credit Hours		**57 Credits**

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/VCI/ other regulatory bodies
1.	Principal Scientist	8 (4 HQ+ 3 centre)+1 (from 2017 onwards)		1
2.	Senior Scientist	1 (till 2017)+1 (from 2017 onwards)		2
3.	Scientist	6 (4 in HQ+12 in centre)+1 (till 2017)		3
	Total	**15**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	1	
2.	Lab techncian	-	
3.	Skilled supporting staff	1	
4.	Lab attendant	2	
	Total		

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 65 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.

- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as Spray dryer, PCR machine, Centrifuges, PAGE apparatus, amino acid analyser and HPLC etc.

List of Equipment

1. MicroJeldhal
2. Soxhlet apparatus
3. Crude fiber analyser
4. Bomb calorimeter
5. Hot air oven
6. Muffle furnace
7. Spectrophotometer
8. Weighing balance
9. Feed mill
10. Centrifuge
11. Homogeniser
12. Amino acid analyser
13. HPLC
14. 1D and 2D Gel electrophoresis unit
15. PCR machine
16. Incubators
17. Shaking incubator
18. -20 freezer
19. -80 deep freezer
20. pH meter
21. Hand pelletiser
22. Water bath
23. Ice flaker
24. Blood chemistry analyser
25. Spray dryer
26. Nanodrop
27. Microplate reader

Images of some major Equipments

HPLC

Centrifuge

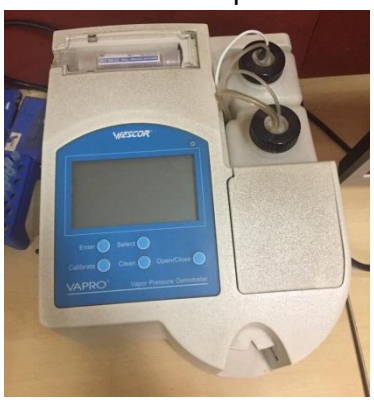
Homogeniser and Blood chemistry analyser

Amino acid analyser

Nanodrop

Spray Dryer

Bomb calorimeter



Osmometer

Ice flaker

Microplate reader

Small equipments

Spectrophotometer

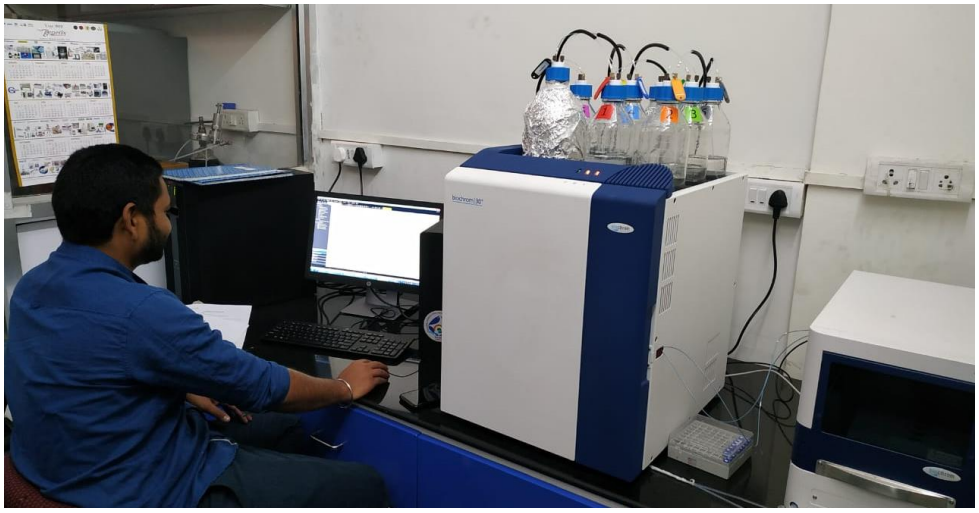
Kjeldahl apparatus

Automatic titration unit

Soxhlet apparatus

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.



6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	**Ph.D.**
1.	Professor / Principal Scientist	7+1 (from 2017 onwards)	7+1 (from 2017 onwards)
2.	Senior Scientist / Associate Professor	1 (till 2017) +1 (from 2017)	1 (till 2017) +1 (from 2017)
3.	Scientist / Assistant Professor	6	6
	Total	**15**	**15**

Thesis supervised/ submitted in PG/PhD Programme

Students in FNBP division are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Details of M.F. Sc students' dissertation (FPB)

Year	Name of the Student	Dissertation Title	Major Advisor
2015-2016	Mr. Arunava Chatterjee	Induction of cytochrome p450 mediated detoxification mechanism for benzimidazole compound in *Labeo rohita* (Hamilton,1822)	Dr. S. Gupta
2015-2016	Mr. Dau Ruhi Pde	Effect of chitosan nano encapsulated trypsin on utilization of plant proteins based diets in *Labeo rohita* (Hamilton, 1822)	Dr. S. Gupta
2015-2016	Ms. Garima Anand	Gene expression study of IL-8 and NFkB in *Labeo rohita* (Hamilton, 1822) fingerlings fed with graded level of carbohydrate	Dr. Sujata Sahoo
2015-2016	Mr. Hafeef Roshan	Insulin like growth factor binding protein gene its protein expression in *Labeo rohit*a fed with graded level of carbohydrate	Dr. Sujata Sahoo
2015-2016	Mr. Sivagurunathan	Calcemic Responses of Intraperitonial Vitamin-D3 on Corpuscles of Stannius Gland and Gene Expression of Stanniocalcin in *Labeo rohita* (Hamilton, 1822) Reared in Calcium Enriched Water	Dr. P. P. Srivastava
2016-2017	Ms. Jainijeshwanti	Responses of plant and animal protein on ovarian tissue development and expression of vitellogenin protein in indigenous ornamental fish *Dawkinsia tambraparaniei* (silas, 1954)	Dr. P. P. Srivastava
2016-2017	Mr. Gyandeep Gupta	Single and multiple-dose pharmacokinetic study of Fenbendazole in *Labeo rohita* (Hamilton, 1822)	Dr. Subodh Gupta
2016-2017	Ms. Hemalata	Gene expression study of GHRH nd TNF-b gene in *Labeo rohita* fed with graded levels of carbohydrate	Dr. Sujata Sahoo
2016-2017	Ms. Amrapali J	Nutritional evaluation of *Tamarindus indica* seeds on growth of *Cirrhinus mrigala*	Dr. P. P. Srivastava
2016-2017	Mr. Munish G	Branchial expression pattern of sodium potassium ATPase in hilsa (*Tenualosa ilisha*) during migration across the salt barrier	Dr. S. Dasgupta
2016-2017	Ms. Sherin	Pharmacokinetics and Physio-metabolic responses of Metronidazole to *Labeo rohita* (Hamilton, 1822)	Dr. Subhod Gupta
2017-2018	Mr. Dharmaraj Patro	Evaluation of *Mentha arvensis* leaf meal in the diet of *Cyprinus carpio* reared in inland saline waters	Dr.P. P. Srivastava
2017-2018	Mr. Diganta Chetia	Pharmacokinetics and Physio-metabolic responses of Emamectin Benzoate in *Labeo rohita*	Dr. S. Gupta

2017-2018	Mr. Zakariya Roy	Studies on selected anti-nutrient mediated stress in *Labeo rohita*	Dr. S. Dasgupta
2017-2018	Ms. Arya P	Expression studies of Glucose 6 phosphatase in *Labeo rohita* fingerlings fed with Lemon grass	Dr. P. P. Srivastava
2017-2018	Mr. Kh. Jahanor Ikram	Evaluation of chicken weed (*Stellaria media*) leaf protein concentrate on growth and immune response in *Labeo rohita*	Dr. S. Gupta
2017-2018	Mr. Nitesh Gurung	Expression studies of IGF-11 and IGFBP gene expression in *Labeo rohita* fingerlings fed with *Ipomea aquatica*	Dr. Sujata Sahoo
2018-2019	Ms. Abhilipsa Biswal	Responses of selected water additives on Transportational stress in *Labeo rohita* Fingerlings	Dr. P. P. Srivastava
2018-2019	Ms. Banani Mohanta	Estrogenic activity of *Cyprinus carpio* fed with soybean and synthetic Daidzein	Dr.Subodh Gupta
2018-2019	Ms. Ifrah Zaffar	Physiological Responses of *Litopenaeus vannamei* in ionic Imbalanced saline water to osmolytes	Dr. Tincy Varghese
2018-2019	Mr. Kachave Vikram	Utilisation of soybean leaf meal in the diet of *Labeo rohita* fingerlings	Dr. G.H Pailan
2018-2019	Ms. Sushmitha Rani	Gene Expression study of IGF-1,IGF-1R and IGFBP-1 in *Labeo rohita* Fed with Pigeon Pea leaf meal based feed	Dr. Sujata Sahoo
2018-2019	Mr. Velselvi	Osmoregulatory and Growth Responses to Potassium and Taurine Supplementation in Genetically Improved Farmed Tilapia Reared under Ionic Imbalanced Saline Water	Dr. Das Gupta
2019-2020	Ms. Darivemula Asha	Effects of different proteins on growth, trypsin and chymotrypsin activities in Asian catfish, *Clarius magur*	Dr. P. P. Srivastava
2019-2020	Mr. Karthik R	Development of super paramagnetic iron oxide nanoparticles conjugated aptamer for heavy metal removal from aquatic system and its impact on *Labeo rohita* (Hamilton, 1822)	Dr. Subodh Gupta
2019-2020	Ms. Khumujam Sapana Devi	Effects of dietary Saponin neutralizers on Physio-biochemical and growth responses of *Labeo rohita* (Hamilton, 1822) fingerlings	Dr. Tincy Varghese
2019-2020	Mr. Mohammad Ashraf Malik	Utilization of fermented *Eichhornia crassipes* leaf meal in the diet of *Cyprinus carpio* (Linn., 1758) fingerlings	Dr. Munil Kumar
2019-2020	Mr. Rajan Kumar Behera	Osmoregulatory and Growth Responses to Potassium and Taurine Supplementation in Genetically Improved Farmed Tilapia Reared under Ionic Imbalanced Saline Water	Dr. Das Gupta

6.4.7. Feedback of students in PG/Ph.D. programmes

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills		✓	
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

Aaradhna, FPB-MAF-01
Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship	✓		
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program To improve interaction between farmers and students.			

FPB-MA9-02 Kathymavathi

Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions		✓	
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught		✓	
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program Divisional library should be extended Discussions and seminars should be conducted more often			

S. P. Mathumitha
Roll No. & Signature (optional):
FPBMA903

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information	✓		
7.	Relating theory to practice and its application	✓		
8.	Any suggestions for improvement of the program			

Gami Kshya Mishra.
FPDMA105

Roll No. & Signature (optional):

ICAR- Central Institute of Fisheries Education,
Deemed-to-be university
Panch Marg, Yari Road, Mumbai

Student Feedback form (M.FSc Program)

Sr. No	Description	Good / High (5)	Average / Medium (3)	Below Expectations / Low (1)
1.	Did this degree programme imparted the basic concepts and advanced knowledge of Aquaculture/Fisheries Resource Management/Fish Nutrition & Feed Technology/Fish Physiology and Biochemistry/Fish Genetics and Breeding/Fish Biotechnology/ Post Harvest Technology/Aquatic Animal Health Management / Aquatic Environment Management/ Fisheries Economics / Fisheries Extension (Please underline your discipline)	✓		
2.	Did this degree programme develop basic research methodology to address the researchable questions	✓		
3.	Did this degree programme develop skills for Entrepreneurship		✓	
4.	Does the curriculum of the program helped in improving your personality, confidence and communication skills	✓		
5.	Extent and depth of knowledge in the subjects taught	✓		
6.	Extent of updated and relevant information		✓	
7.	Relating theory to practice and its application		✓	
8.	Any suggestions for improvement of the program	—		

Shivangi (FPB-MA-906
Roll No. & Signature (optional):

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

Name of the Degree programme	Actual students admitted in the last five years					Attrition (%)				
Year	2015-16	2016-17	2017-18	2018-19	2019-20	2015-16	2016-17	2017-18	2018-19	2019-20
M.F.Sc	6	6	6	6	7	0	0	0	16.6	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

Self-Study Report for the Programme
(*2015-16 to 2019-2020*)

Doctor of Philosophy in Fish Physiology and Biochemistry

6.4.1. Brief History of the Degree Programme

From the year 2010 onwards, the division is offering Masters and PhD in two disciplines namely Fish Nutrition and Feed Technology and Fish physiology and Biochemistry with an objective of moldings professionals with fundamental and advanced knowledge and expertise in the field of Fish Nutrition and Feed Technology and Fish Physiology and Biochemistry. Recently in 2019, Postdoc programme was created at the institute for all disciplines.

Accomplishments

This programme has developed knowledge, skill and critical thinking abilities in students. It helps the student to identify the research problem and to make necessary scientific solution to it. The PhD scholars have got jobs in government (Agricultural Research Service; Assistant Professors) and private sectors, and some of them started entrepreneurship.

Nomenclature	Degree Programme	Year of Start	Duration	Number of seats
Ph.D. (FPB)	Doctor of Philosophy in Fish Physiology and Biochemistry	2010	3 years	2

Eligibility Criteria

B.F.Sc. &M.F.Sc. (Fish Physiology and Biochemistry)

Mode of Admission

A combined examination for the award of ICAR JRF/SRF Scholarship and admissions to 100% seats of Ph.D. Degree Programme at CIFE is conducted by the Education Division, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan - II, Pusa, New Delhi – 110012.

Credit Requirements (As per the guidelines)

Subject	Credits
Major courses	17
Minor courses	06
Supporting courses	05
Credit seminar	02
Field Training	00
Thesis	45
Total	**75**

Courses Offered in Ph. D. in Fish Physiology and Biochemistry

	MAJOR COURSES	**28 Credits 15 (9+6)**
	MAJOR COMPULSORY COURSES	**9**
FPB 601	Advances in Fish Biochemistry	2+1
FPB 602	Advances in Fish Physiology	2+1
FPB 603	Climate change and adaptive physiology	2+1
	MAJOR OPTIONAL COURSES	**6**
FPB 604	Analytical Biochemistry And Instrumentation	1+1
FPB 605	Intermediary Metabolism	2+1
FPB 606	Fish Neuroendocrinology	1+1
FPB 607	Metabolomics	1+1
FPB 608	Endocrinology	2+1
	Minor courses *(To be offered from other disciplines)*	**8**
	Supporting courses	**5**
	Seminar	**2**
	Total	**30**
	Research	**60**
	Total	**90**

6.4.2. Faculty Strength

S.No	Sanctioned Faculty	Faculty in place	Vacant positions	Faculty recommended by the ICAR/UGC/ VCI/ other regulatory bodies
1.	Principal Scientist	8 (4 HQ+ 3 centre)+1 (from 2017 onwards)		1
2.	Senior Scientist	1 (till 2017)+1 (from 2017 onwards)		2
3.	Scientist	6 (4 in HQ+12 in centre)+1 (till 2017)		3
	Total	**15**		

6.4.3. Technical and supporting Staff

S.No	Sanctioned Faculty	Faculty in place	Vacant positions
1.	Technical assistant	1	
2.	Lab techncian	-	
3.	Skilled supporting staff	1	
4.	Lab attendant	2	
	Total		

6.4.4. Classroom and Laboratories

- Well-equipped teaching class rooms for Master's (01) and Ph.D. students (01) are available in the department.
- The classrooms are equipped with audio-visual aids along with internet connection.
- The division has a library with 65 books, journals and magazines.
- The department has a well-equipped lab for conducting practicals to the M.F. Sc. and Ph.D. students as well as experiments conducted under different projects.
- The division has access to the central SMART e-learning class rooms and it supports web-based learning, computer-based learning, virtual education opportunities and digital collaboration.
- The division has access to anti-plagiarism tool to prevent the plagiarism and to promote the academic integrity. The students have to submit the similarity report while submitting the thesis/dissertations to the academic cell.
- The divisional labs are well equipped with the basic and advanced equipment such as Spray dryer, PCR machine, Centrifuges, PAGE apparatus, amino acid analyser and HPLC etc.

List of Equipment

1. Micro Jeldhal
2. Soxhlet apparatus
3. Crude fiber analyser
4. Bomb calorimeter
5. Hot air oven
6. Muffle furnace
7. Spectrophotometer
8. Weighing balance
9. Feed mill
10. Centrifuge
11. Homogeniser
12. Amino acid analyser
13. HPLC
14. 1D and 2D Gel electrophoresis unit
15. PCR machine
16. Incubators
17. Shaking incubator
18. -20 freezer
19. -80 deep freezer

20. pH meter
21. Hand pelletiser
22. Water bath
23. Ice flaker
24. Blood chemistry analyser
25. Spray dryer
26. Nanodrop
27. Microplate reader

Images of some major Equipments

Small equipments

Spectrophotometer

Kjeldahl apparatus

Automatic titration unit

Soxhlet apparatus

HPLC

Centrifuge

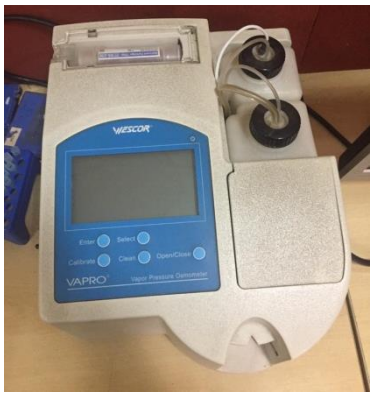
Homogeniser and Blood chemistry analyser

Amino acid analyser

Nanodrop

Spray Dryer

Bomb calorimeter



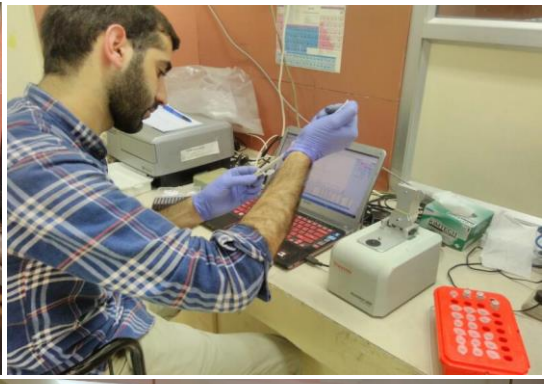
Osmometer

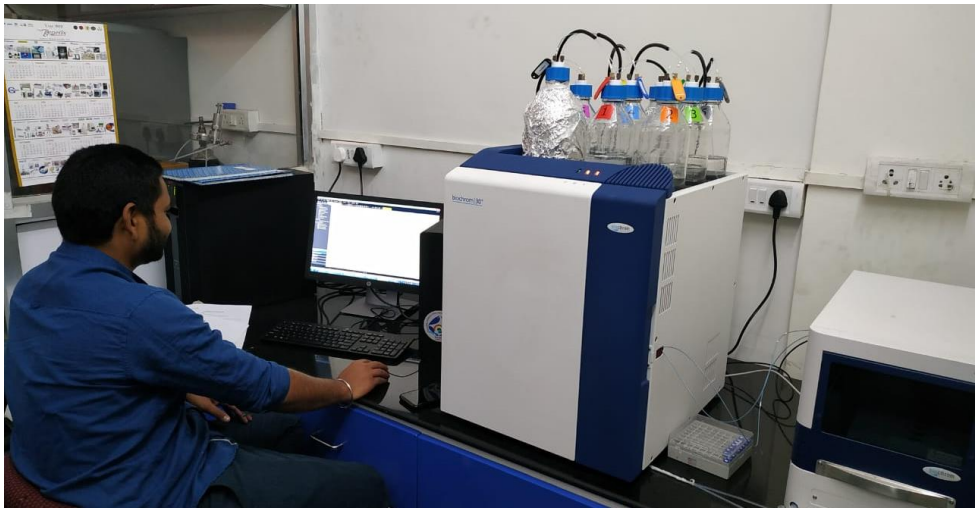
Ice flaker

Microplate reader

6.4.5. Conduct of Practical and Hands-on-Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practical. Accordingly, the course credit hours are designed so that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practical designed to have 3 credit hours. The labs have all the basic equipment and computational tools to impart hands-on-training to the students. Further, the labs are open for the students to work in the lab beyond office hours. All the instruction materials and other practical manuals are provided to the students for ready reference.





6.4.6. Supervision of Students in PG and Ph.D. programmes

Qualified faculty in relation to intake of students of Masters/Ph. D Programme

S.No	Faculty	Numbers of qualified faculty in relation to intake of students	
		Masters	**Ph.D.**
1.	Professor / Principal Scientist	7+1 (from 2017 onwards)	7+1 (from 2017 onwards)
2.	Senior Scientist / Associate Professor	1 (till 2017) +1 (from 2017)	1 (till 2017) +1 (from 2017)
3.	Scientist / Assistant Professor	6	6
	Total	**15**	**15**

Thesis supervised/ submitted in PG/PhD Programme

Students in FNBP division are conducting research in different basic, field, applied and advance aspects. Different fields of research have been depicted in following figure.

Research programme of Ph.D. Scholars (2015 to 2020)

Provide year-wise list of Ph.D. dissertations along with the student and guide

Year	Name of the Student	Thesis Title	Major Advisor
2015-16	Mr. Vipin Nautiyal	Evaluation of synergistic effects of silver nanoparticle and oxytetracycline against selected pathogen in *Labeo rohita* (Hamilton, 1822)	Dr. S. Gupta
2016-17	Mr. Mir IshfaqNazir	Studies of selected digestive enzymes during ontogenic development and their responses to diet in *Clarias batrachus* (Linnaeus, 1758) juveniles	Dr. K. K. Jain
2016-2017	Mr. Showkat Ahmad Dar	Studies on regulation and expression of ghrelin gene in *Labeo rohita* (hamilton, 1822) under different feeding regimes	Dr P.P. Srivastava
2016-2017	Ms. Smital D Kamble	Assessment of phytoestrogen from selected soybean products on reproductive performance in female *Dwakinsia tambraparanei* (Silas, 1952)	Dr. Subodh Gupta
2016-2017	Ms. Anagha T	Physiometabolic responses and ovarian disruption of *Labeo rohita* exposed to titanium dioxide nanoparticle and its mitigation studies	Dr. Subodh Gupta
2016-2017	Ms. Amrutha Gopan	Utilization of protein isolates from neem (*Azadirachta indica*) and karanj (*Pongamia*	Dr. N. P. Sahu

		pinnata) seed cake in the diet of *Labeo rohita* (Hamilton, 1822)	
2016-2017	Mr. Sudhanshu Raman	Utilization of Dhaicha (Sesbania) leaf meal by *Labeo rohita* (Hamilton, 1822)	Dr. Ashutosh D. Deo
2017-18	Ms. Garima Anand	Evaluation of sesbania leafmeal based diet on flesh quality of *C. Carpio* reared in inland saline water under different salinities	Dr. P. P. Srivasatava
2017-18	Ms. Anagha T	Physiometabolic responses and ovarian disruption of *Labeo rohita* exposed to titanium dioxide nanoparticle and its mitigation studies	Dr.Subodh Gupta
2017-18	Ms. Nuzaiba P.M	Transcriptomic study of genes responsible for reproductive function in *Cyprinus carpio* L. exposed to phytoestrogen	Dr. Subodh Gupta
2018-19	Mr. Munish Gangwar	Development of super-paramagnetic iron oxide nanoparticles (SPIONs) for removal of selected bacteria from aquatic system and their bio-toxicity in fish	Dr. Subodh Gupta
2018-19	Mr. Gyandeep Gupta	Studies on vitllogenin profile and follicular maturation in *Clarias magur* fed with selected feed additive	Dr. P. P. Srivastava
2019-2020	Mr. Dharmaraj Patra	Comparative analysis of metabolites from different tissues during the developmental stages of ovary in *Clarias magur*	Dr. P. P. Srivastava
2019-2020	Ms. Arya P.	Transgenerational effects of soybean phytoestrogens on Reproductive functions in *Cyprinus carpio* (Linnaeus, 1758)	Dr.Subodh Gupta

6.4.7. Feedback of students in PG/Ph.D. programmes

The feedback from the PG and PhD students are given as annexure 22.

After completion of the semester, each student was given a feedback form to fill-up and submit it to the academic cell. Further, a dedicated email was created to collect the feedback from the students.

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

Name of the Degree programme	**Actual students admitted in the last five years**					**Attrition (%)**				
Year	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**
PhD	4	3	2	2	3	50%	0	0	0	0

6.4.9. ICT application in Curricula Delivery

Currently the division is using various online platforms to deliver lecture like Zoom, Webex, Google meet and Classroom, Agri Dikhsa portal etc.

6.4.12. Certificate (Applicable when SSR is submitted for Programme)

I, the Dean **Dr. N. P. Sahu** 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

1. Aquaculture Division

Aquaculture Division has two labs namely Biology lab and Soil and Water chemistry Lab. The details of equipment are given below.

List of Equipments in Aquaculture Division

Sr. No.	Equipment	Location
1	Gel DOC	Biology lab
2	Micro wave oven	Biology lab
3	pH meter	Soil & Water lab
4	Centrifuge (Cooling)	Biology lab
5	PCR Machine	Biology lab
6	Tissue Homogeuizer	Biology lab
7	Electronic Automatic Kelplus	Soil & Water lab
	microprocessor	Soil & Water lab
8	Turbidity Aynalyser	Soil & Water lab
9	Motic binocular Microscope	Biology lab
10	Analytical Balance	Soil & Water lab
11	UV. Visible spectrophometer	Soil & Water lab
12	Motic binocular Microscope No.10	Biology lab
13	Semi Microbalance and Optional Accessories printer	Soil & Water lab
14	Digital Floculator (Jar Test Apparatus	Soil & Water lab
15	Deep Freezer	biology lab
16	Electeronic balance	Soil & Water lab
17	Bench photometer with Dot matrix LCD	Biology lab
18	Automatic balance	Soil & water
19	Nephalometer	Biology lab
20	Water bath (6 hole)	Soil & water
21	pH meter Digital	Soil & water
22	Balance SPS 6001	soil & water
23	DO meter Pen digital	Soil & water
24	Vortex Mixer	Biology lab
25	Digital Autoclave	Biology lab

2. Fisheries Resource and Post-Harvest Management Division

Fisheries Resource and Management division has four labs viz., Craft and Gear technology lab, Taxonomy labs, Algal culture lab and Biology lab. The list of equipment is given below.

List of Equipment in Fisheries Resource Management Department

Sr. No.	Equipment	Location
1	Deep Freezer	Biology lab
2	Deep Freezer Horizontal	Taxonomy Lab
3	Garmin GPS	Biology Lab
4	Wireless Communication GPS Receiver	Biology Lab
5	GPS	Biology Lab
6	Canon Digicam	Biology Lab
7	Primer Software	Biology Lab
8	Gel Documentation System	Taxonomy Lab
9	Digital Hot Air Oven	Taxonomy Lab
10	Laminar Flow	Taxonomy Lab
11	Thermocycler	Taxonomy Lab
12	Digital Autoclave	Taxonomy Lab
13	Nicon SLR Camera	Biology Lab
14	SLR Camera	Biology Lab
15	Grab (Sediment)	Biology Lab
16	Rotary Microtome	Biology Lab
17	PH Meter	Taxonomy Lab
18	Water Purification System	Taxonomy Lab
19	Electronic Balance	Taxonomy Lab
20	Water Environmental Analyser	Biology Lab
21	Spectrophotometer	Taxonomy Lab
22	Sony Cyber Shot	Biology Lab
23	Godrej Refrigerator	Taxonomy Lab
24	Flame Photometer	Biology Lab
25	Rotary Microtome	Biology lab
26	Vest Frost Upright Freezer	Taxonomy Lab
27	Hot Plate	Taxonomy Lab

3. List of Equipments in Post-harvest technology Department

Sl. No.	Name of equipment	Location
1.	Anaerobic work station	Microbiology
2.	Biosafety cabinets (2)	Microbiology, Virology
3.	BSL II Laminar flow	Microbiology
4.	Autoclave (Horizontal)	Microbiology
5.	Autoflow IR-water jacketed CO_2 incubator	Virology
6.	Inverted microscope	Virology
7.	Fluorescent microscope	Virology
8.	Compound light microscope (2)	Virology
9.	PCR machines (2)	Quality Control
10.	2D electrophoresis unit	Quality Control
11.	Refrigerated centrifuge (2)	Quality Control
12.	Hybridization oven	Quality Control
13.	Gel documentation unit	Quality Control
14.	HPLC	Quality Control
15.	Rheometer	Quality Control
16.	Autoclave (Vertical)	Processing
17.	Deboner	Processing
18.	Basket centrifuge	Processing
19.	Battering and breading machine	Processing
20.	GC-MS	Instrumentation
21.	Texture analyser	Instrumentation
22.	Nitrogen analyser	Students
23.	Soxhlet apparatus	Biochemistry

4. Aquatic Environment and Health Management division

The Aquatic Environment and Health Management division has two departments Aquatic Environment Management department and Aquatic Animal Health Management Department Laboratory. The Aquatic Environment Management department is located in old campus, Seven Bungalow and the Aquatic Animal Health Management Department is in New Campus, Yari Road. The Division has Cell culture lab, General Pathology lab;

Molecular lab; Sample storage facility; Wet lab; Microbiology & Histopathology lab; Instrumentation lab; Gas Chromatography Room ; Chemistry lab; Algal room. The details of equipment are given below.

Equipments in Aquatic Animal Health Management Department

Sr. No	Equipment	Location
1.	Student Microscope (3nos)	General Pathology
2.	Refrigerator (400L) 2 Nos	Microbiology lab
3.	Laminar Flow	General Pathology
4.	Phase contrast Microscope	Molecular lab 2
5.	Shaking Water bath	General Pathology
6.	Rotary microtome	General Pathology
7.	Refrigerator Double door (710 L)	General Pathology
8.	Fume hood	General Pathology
9.	Co_2 cylinder	Cell Culture lab
10.	Centrifuge(CC)	General Pathology
11.	Refrigerator (430 l)	Cell Culture lab
12.	Microwave oven	General Pathology
13.	Digital inverted microscope	Cell Culture lab
14.	Real time PCR	
15.	BOD incubator(CC)	Cell Culture lab
16.	Tissue homegeniser	Molecular lab
17.	Hot air oven	General Pathology
18.	Co_2 Incubator	Cell Culture lab
19.	pH meter	General Pathology
20.	Stereo zoom microscope	Cell Culture lab
21.	Table top shaker	Microbiology lab
22.	Digital inverted microscope	Cell Culture lab
23.	Biosafety cabinet	General Pathology
24.	Centrifuge	Microbiology lab
25.	Waterbath shaker(CC)	Microbiology lab
26.	Dry bath	General Pathology
27.	Cryoscopicosmometer	Cell Culture lab
28.	Autoclave	General Pathology
29.	Sanya cool incubator	Cell Culture lab
30.	Rocking platform	General Pathology
31.	DNA vacuum concentrator	General Pathology
32.	Thermal cycler	Molecular lab
33.	Ultra microtome	TEM Lab
34.	Trinocular research microscope	TEM Lab
35.	Table top refrigerated centrifuge	Molecular lab
36.	Transmission Electron microscope	TEM Lab
37.	Gel electrophoresis unit for comet assay	Microbiology lab
38.	Horizontal freezer(chest freezer)	Sample storage room

39.	Thermo cycler	Molecular lab
40.	Table top shaker	General Pathology
41.	Refrigerator	Molecular lab
42.	Biosafety cabinet	Molecular lab
43.	Vacuum cleaner	TEM Lab
44.	ELISA plate washer	Molecular lab
45.	Micromanipulator system	Molecular lab
46.	Refrigerator	Sample storage room
47.	Vertical electrophoresis system with gradient former and power pack	General Pathology
48.	Semi-dry blotting apparatus	General Pathology
49.	Microarray scanner	Molecular lab
50.	Deep freezer -14 to -23 ^{0}C	Sample storage room
51.	Gradient PCR machine	Molecular lab
52.	Electrophoresis unit	General Pathology
53.	Deep freezer -85^{o}C	Sample storage room
54.	Deep freezer -80^{o}C	General Pathology
55.	Weighing balance Avon	General Pathology
56.	Vortex mixer	General Pathology
57.	Electronic balance	Microbiology lab
58.	pH meter microprocessor based -2nos.	General Pathology
59.	Ultrasonic processor –sonicator	General Pathology
60.	BOD Incubator (300lt)	General Pathology
61.	BOD Incubator (650lt)	Microbiology lab
62.	Deep freezer -80 degree	General Pathology
63.	Microcentrifuge	Microbiology lab
64.	Water Purification system	Microbiology lab
65.	Digital hotplate	General Pathology
66.	Deep freezer -20 degree (2 nos)	Sample storage room
67.	Trinocular microscope	Cell Culture lab
68.	Automatic Tissue Processor	General Pathology
69.	Histoembedder	General Pathology
70.	Ultra centrifuge	General Pathology

5. Equipment in Aquatic Environment Management Department

Sr.No.	Name of Equipment	Location
1	Automatic Microbial Identification System(Vitek)	Instrumentation Lab
2	Gas Chromatography (GC)	Gas Chromatography Room
3	CHNS-O Analyser	Instrumentation Lab
4	Flame Photometer	Microbiology Lab
5	Lyophilizer (Freeze Drier)	Instrumentation Lab
6	Weighing Balance	Microbiology Lab
7	Refrigerated Centrifuge	Microbiology Lab

8	-80^{o} Deep Freezer	Microbiology Lab
9	Rotary Evaporator	Instrumentation Lab
10	Automatic Microkjeldahl	Chemistry Lab
11	BOD Incubator	Instrumentation Lab
12	DGGE (Denaturing Gradient Gel Electrophoresis)	Microbiology Lab
13	Gel Electrophoresis Horizontal	Microbiology Lab
14	Table Top Orbital Shaker	Microbiology Lab
15	Trinocular Microscope	Instrumentation Lab
16	Plant Growth Chamber	Algal Room
17	Multi Temperature Water Bath Circulator	Microbiology Lab
18	Ph Meter	Algal Room
19	GPS	Algal Room
20	PCR Thermal Cycler	Microbiology Lab
21	Double Beam UV-VIS Spectrophotometer	Algal room
22	Ph-Meter-Microcessor Based	Algal room
23	Microprocessor Conductivity-TDS-Salinity Temperature Meter with Graphical Display (N and M)	Algal room
24	Digital Flame Photometer with Dyal Channel (N & M)	Chemistry Lab
25	Magnetic Stirrer	Algal Room
26	UV-VIS Spectrophotometer	Algal room
27	Refrigerated Centrifuge	Algal room
28	Vertical Deep Freezer	Algal room Algal Room
29	Bio Mas Burn Furnace	Instrumentation room

6. Fish Genetics and Biotechnology Division

List of Equipment in Fish Genetics and Biotechnology Division

Sr. no.	Details of Instrument	Location
1	Olympus Microscope with accessories (Olympus)	FGB Lab 1
2	Vertical gel electrophoresis unit, Horizontal electrophoresis unit (Techno source)	FGB Lab 2
3	Vertical Gel electrophoresis apparatus (Techno source)	FGB Lab 2
4	CM-12 Cooling microfuge machine; 24x1.5 ml angle rotor (Remi)	FGB Lab 2
5	2 MLH Magnetic Stirrer with hot plate (Remi)	FGB Lab 2
6	RSB-12 Water bath Shaker (Remi)	FGB Lab 2

7	Remi Cyclomixer (M10) (Remi)	
8	Olympus binocular microscope model and accessories	FGB Lab 2
9	Horizontal Gel apparatus: 1) Large model; 2) UV transparent gel platform, 3) Developing chamber light proof large; 4) Levelling table with spirit level; 5) EPS 500 (Genei)	FGB Lab 2
10	Rocking platform	FGB Lab 2
11	Programmable freezer	FGB Lab 1
12	Remi clinical centrifuge with 8x15 ml swing out head and 15 ml tapered bottom glass tubes (Remi)	FGB Lab 2
13	Ultrasonic cleaner capacity 18 litres	FGB Lab 2
14	Vertical Laminar Airflow	FGB Lab 2
15	Control dynamic pH meter	FGB Lab 2
17	Vertical Gel electrophoresis apparatus; Easy to align PTFE C	FGB Lab 2
18	Microfuge with stepless speed control TC 4815 and 24x1.5 ml angle rotor head with tapered bottom polypropylene tubes TC481 (Eltek)	FGB Lab 1
19	Thermostatically controlled water bath; Digital display temperature indicating controller built in	FGB Lab 2
20	Kenstar microwave (Kenstar)	FGB Lab 2
21	Stabilizer 10KVA	FGB Lab 1
22	Stabilizer 10KVA	FGB Lab 1
23	Vertical Autoclave	FGB Lab 2
24	Microscope-Hund Wetzeler Type H; Microscope H600 LL, Phototube, Photo eyepiece P10X, SLR Camera Minolta, T2 Adapter for camera, Electronic release (Hund Wetzeler)	FGB Lab 1
25	LG Refrigerator, 175 litres	
26	Microscope with fluorescence & phase, stereozoom microscope with camera port (Carl Ziess)	Cell Culture Lab
27	Biophotometer (Eppendorf)	FGB Lab 2
28	Hybrilinker (UVP)	FGB Lab 2
29	Motility Analyzer	FGB Lab 1
30	Microwave Oven with Grill, 30 ltrs (LG)	FGB Lab 2
31	Refrigerator, 340 ltrs (Whirlpool)	FGB Lab 2
32	Tag Reader Portable; Qty: 02 nos.	
33	500 VA APC UPS	
34	UV-visible spectrophotometer (Thermo Fisher Scientific)	FGB Lab 2
35	Vertical Deep Freezer, cap 650 ltrs (HMG)	FGB Lab 2
36	Swift Maxi cycler (Esco Thermal cycler/ PCR machine) (ESCO)	FGB Lab 1
37	30 lts upright solid door -20 freezer (Siemens)	FGB Lab 2
38	RO Water Purifier	Old campus wet lab

39	Vertical Dual Maxi Gel System	
40	P-97 Micropipetted Puller (Sutter Instrument Co.)	FGB Lab 2
41	Stereo Zoom Trinocular Microscope Stemi 2000C (Carl Ziess)	FGB Lab 2
42	External power supply for Carl Zeiss cold light source	FGB Lab 2
43	Canon Xerox Machine, Cannon)	SAS lab
44	Conventional PCR machine, (Bio-Rad)	FGB Lab 2
45	Veriti 96 W thermal cycler 0.2 ml PCR, (Invitrogen)	FGB Lab 2
46	Shimadzu Electronic Analytical Balance AX200; Qty: 02 nos. (Shimadzu)	FGB Lab 2
47	Eppendorf Refrigerated Centrifuge (Eppendorf)	FGB Lab 1
48	Godrej Double Door Refrigerator (Godrej)	FGB Lab 1
49	BOD Incubator & Voltage stabilizer for BOD Incubator (Remi)	FGB Lab 2
50	Minus 80 Deep Freezer (Haier)	FGB Lab 3
51	Speed Vaccum Concentrator (Labonco Corporation)	FGB Lab 2
52	Shimadzu Electronic Analytical Balance (Shimadzu)	FGB Lab 2
53	High Speed Refrigerated Table top centrifuge (Thermo Fisher Scientific)	FGB Lab 2
54	Celfrost (Freezer 2D)	Animal house, CIFE
55	Godrej Refrigerator	Animal house, CIFE
56	Deep freezer (Blue Star)	Animal house, CIFE,
57	IF-090-Iceflaker machine	FGB Lab 2
58	Minus 20 Freezer, Vertical type (Vest Frost)	FGB Lab 2
59	Microcentrifuge (spinwin); vortex mixer; magnetic stirrer with hot plate; LG microwave; whirlpool refrigerator 310 ltrs	FGB Lab 2
60	Light cycler 48011, 96 (Roche)	FGB Lab 2
61	Veriti fast 96 well thermal cycler 0.1 ml (Invitrogen)	FGB Lab 2
62	Horizontal Gel Electrophoresis Apparatus	FGB Lab 2
63	Minus 86 degrees ultra freezer (Kaltis)	FGB Lab 2
64	Blue Star Deep Freezer (Blue Star)	FGB Lab 2
65	Gradient PCR machine (DSS Takara)	FGB Lab 1
66	Optima Max XP Ultracentrifuge (Opitma Max XP)	FGB Lab 2
67	Horiba Nano Particle Size Analyzer (Horiba)	FGB Lab 1
68	Water Purification System (Millipore- Merck)	FGB Lab 2
69	Single phase servo controlled voltage stabilizer, 2 nos. (Sentri)	FGB Lab 2
70	Tissue ruptor; Stainless steel probes	FGB Lab 2
71	LMPH10 Digital PH Meter, 2 nos. (LMPH10)	FGB Lab 3
72	Minus 20 Freezer, Vertical type, 2 nos.	FGB Lab 1 &2
73	Transilluminator	FGB Lab 3
74	Samsung Refrigerator, 2 nos. (Samsung)	FGB Lab 1 & 2

75	LG Microwave	FGB Lab 3
76	Low Speed Spin Down Centrifuge, 4 nos. (Tarsons)	FGB Lab 3
77	Micropipettes, 4 sets of 4 pipettes	
78	Vertical Dual Maxi Gel System	FGB Lab 1
79	Neolab Heating Block (Neolab)	FGB Lab 2
80	Vortex mixer 3020 Spinix MC-01 with speed control, 2 nos. (Tarsons)	FGB Lab 2&3
81	Table top centrifuge, 1040SPINWIN-TM Micro Centrifuge (Tarsons)	FGB Lab 2
82	PCR Thermal Cycler Dice Mini (DSS Takara)	FGB Lab 2
83	Refrigerated Circulating Water Bath (Labotech)	FGB Lab 2
84	Refrigerator Double Door 255 litre (LG)	FGB Lab 1
85	Electrophoretic apparatus: 1) Power pack 2) Vertical EA 3) Mini Horizontal EA 4) Medium Horizontal EA (Merck)	FGB Lab 2
86	Electrophoresis Apparatus: Sleeksub, Tubbysub, Electragel (Tech Resource)	FGB Lab 2
87	Biosafety cabinet Class II (Imset)	FGB Lab 2
88	BOD Incubator (Labtro)	Cell Culture Lab
89	Water Purification System (Bio-Age & Services)	FGB Lab 1
90	Deep Freezer (Minus 20), Elanpro	FGB Lab 2
91	Implen Nano Photometer (Implen)	FGB Lab 2

7. Fish Nutrition, Biochemistry and Physiology Division

List of Equipments in Fish Nutrition, Biochemistry and Physiology Division

S.No	Name of the Equipment	Location
1.	Pulverizer	Feed technology Laboratory
2.	Automatic pelletizer	Feed technology Laboratory
3.	Mechanical pelletizer	Feed technology Laboratory
4.	Manual pelletizer	Feed technology Laboratory
5.	Spheronizer	Feed technology Laboratory
6.	Spray dryer	Feed technology Laboratory
7.	Hot air oven	Feed technology Laboratory
8.	Muffle furnace	Feed technology Laboratory
9.	Autoclave	Feed technology Laboratory

10.	Proximate analysis laboratory1 (Room No 102 no)	Feed technology Laboratory
11.	Microkjeldahl Digestion unit	Feed technology Laboratory
12.	Microkjeldahl Distillation unit (2 no)	Feed technology Laboratory
13.	Microkjeldahl titration unit (2 no)	Feed technology Laboratory
14.	Soxhlet Apparatus	Feed technology Laboratory
15.	Weighng balance	Feed technology Laboratory
16.	Bomb Calorimeter	Feed technology Laboratory
17.	Proximate analysis laboratory2 (Room No 103 no)	Feed technology Laboratory
18.	FibroTron Fibre analyser	Feed technology Laboratory
19.	Soxtec fat analyser apparatus	Feed technology Laboratory
20.	Hot air Oven	Feed technology Laboratory
21.	Microkjeldahl Digestion unit	Feed technology Laboratory
22.	Muffle furnace	Feed technology Laboratory
23.	Sand Bath	Feed technology Laboratory
24.	Deep freezers (3 no)	Feed technology Laboratory

S.No.	Name of the Equipment	Location
1.	Rotary evaporator	Biochemistry laboratory
2.	Distillation system (2 no)	Biochemistry laboratory
3.	Laminar flow chamber	Biochemistry laboratory
4.	Sonicator	Biochemistry laboratory
5.	Cooling centrifuge (2 no)	Biochemistry laboratory
6.	Shaking incubator	Biochemistry laboratory
7.	ELISA Plate shaker	Biochemistry laboratory
8.	Water bath (3 no)	Biochemistry laboratory
9.	Weighing balances (2 no)	Biochemistry laboratory
10.	Ice flaker	Biochemistry laboratory

11.	Vaccum dryer for glass apparatus	Biochemistry laboratory
12.	Fridge (2-8 ºC)	Biochemistry laboratory
13.	Molecular Biology Laboratory (Room No. 112 no)	Biochemistry laboratory
14.	Micro-centrifuge	Biochemistry laboratory
15.	Gel electrophoresis system	Biochemistry laboratory
16.	Multiplate stirrer	Biochemistry laboratory
17.	Multi-Magnetic stirrer	Biochemistry laboratory
18.	Uv-trans illuminator	Biochemistry laboratory
19.	Thermocycler	Biochemistry laboratory
20.	Realtime PCR	Biochemistry laboratory
21.	ELISA reader	Biochemistry laboratory
22.	Osmometer	Biochemistry laboratory
23.	pH meter	Biochemistry laboratory
24.	BOD incubator	Biochemistry laboratory
25.	Spectrophotometer	Biochemistry laboratory
26.	Laminar flow chamber	Biochemistry laboratory
27.	Microwave oven	Biochemistry laboratory
28.	HPLC laboratory (Room No. 113 no)	Biochemistry laboratory
29.	HPLC apparatus and detection unit	Biochemistry laboratory
30.	Physiology Laboratory (Room No 118)	Biochemistry laboratory
31.	Blood electrolyte analyser	Biochemistry laboratory
32.	Amino acid analyser	Biochemistry laboratory
33.	Blue light illuminator	Biochemistry laboratory
34.	pH Meter	Biochemistry laboratory
35.	Weighing balances	Biochemistry laboratory

36.	Dry bath	Biochemistry laboratory
37.	Light Microscope	Biochemistry laboratory
38.	Stirrer cum hot plate	Biochemistry laboratory
39.	Deep freezer	Biochemistry laboratory

ICAR-Central Institute of Fisheries Education
(University under Sec.3 of UGC Act 1956)
Indian Council of Agricultural Research
Panch Marg, Off Yari Road, Andheri (West), Mumbai - 400061, India

Self-Study Report for the Colleges

ICAR-Central Institute of Fisheries Education

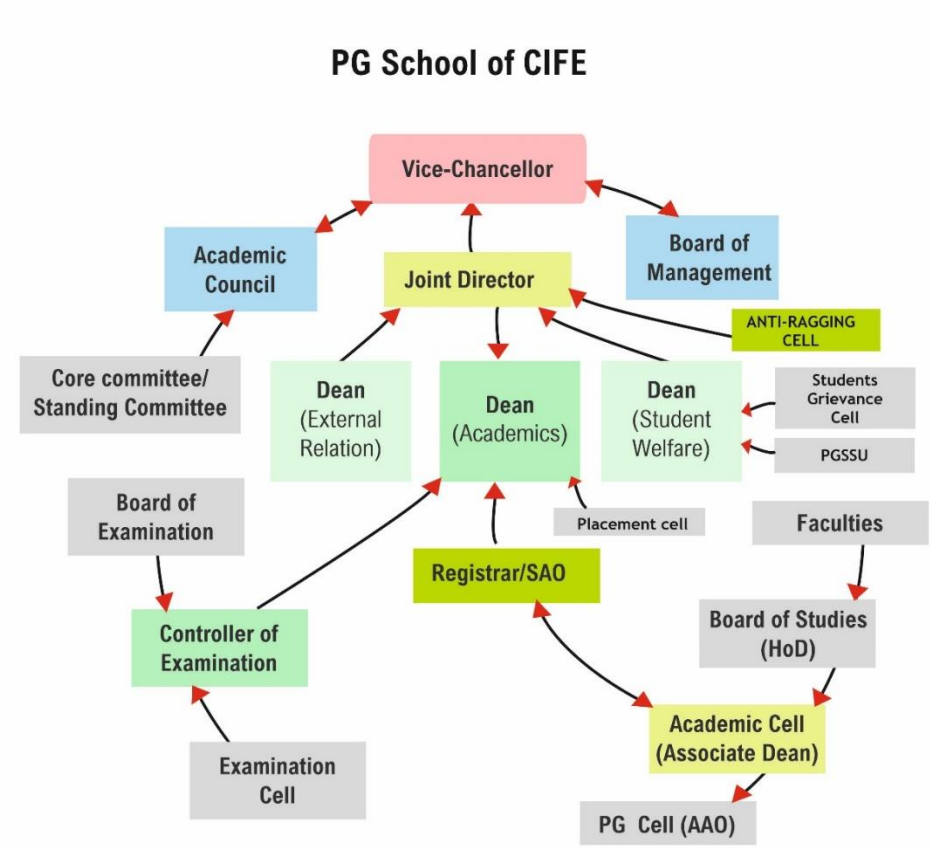
(University under Sec.3 of UGC Act 1956)
Indian Council of Agricultural Research
Panch Marg, Off Yari Road, Andheri (West), Mumbai - 400061, India

6.5. Self-Study Report for the Colleges

6.5.1. College Administration

6.5.1.1. College Dean's Office Establishment

Being a Deemed-to-be University, ICAR-CIFE does not have the statutory 'Dean' post. However, the Joint Director / Senior most Head of the Department/ Principal Scientist delegates the duties of 'Dean' as an additional charge. The organogram of the PG school is given below.



The PG school is governed by the Dean (Academics), with assistance from the Dean (External Relation) and Dean (Students Welfare). The regular academic and other administrative work is executed by the Associate Dean (Academics), Assistant Administrative Officer (AAO) and Assistant. The PG school monitors the academic and students' research activities (M.F.Sc, Ph.D. and other courses) of the six faculties (departments) offered in eleven disciplines namely Aquaculture, Fish Nutrition and Feed Technology, Fish Physiology and Biochemistry, Fisheries Resources Management, Post-Harvest Technology, Aquatic Environment Management, Aquatic Animal Health Management, Fish Genetics and Breeding, Fish Biotechnology, Fisheries Economics and Fisheries Extension.

The examination cell is headed by the Controller of Examination assisted by members of the examination cell. It conducts examinations for all the M.F.Sc. and Ph.D. courses offered by CIFE.

6.5.1.2. Monitoring Mechanism for Quality Education (on-line)

The PG school has internal quality assurance system in line with the ISO 9008 quality standards and these details are given in the Quality Manual submitted for ISO certification. The PG school takes an online feedback from all the students to assess the quality of teaching. Further, the PG school regularly collects the research progress report of each student through Chairman, Board of Studies (BoS) of each discipline. Apart from this, every alternative year, an online feedback is collected from all the passed-out students to improve the quality of the teaching, research and extension. All these efforts resulted in excelling of CIFE students in the national level competitive exams (NET, ARS) and some of the students have also received fellowship to pursue Ph.D. in abroad. Students also bagged several awards for best thesis at national level. Every year, CIFE also announce / present several endowment awards to increase the competitiveness among the students.

6.5.1.3. CC/Board of Studies

A Board of Studies is constituted for each teaching discipline of the Institute. Only approved members of the Post-Graduate faculty are eligible for inclusion as members of the Board of Studies.

The composition of the Board of studies of each discipline is given below.

Head of the Division	:	Chairman
One Principal Scientist	:	Member
One Senior Scientist	:	Member
One Scientist	:	Member
One student representative to the nominated by the Chairman	:	Member

- The Head of the Division is the Chairman of the Board of Studies of the discipline concerned. Normally, the composition of the Board will be as indicated above in the above table, but the composition can be raised to 9 subject to the condition that each sub-discipline is represented as far as possible.
- The quorum for holding the meeting of the Board of Studies is 75% of the total membership.
- The Board of Studies is reconstituted before the commencement of each academic year.

The Board of Studies has the responsibility of reviewing the instructional programmes of the discipline concerned in respect of each semester, preparing recommendations for revision, addition or deletion of courses, organization of the teaching of courses in each semester in the discipline concerned and considering all matters relating to improvement and conduct of postgraduate instructions and research in the discipline. It also discusses all academic matters of the discipline before they are sent to the

Postgraduate faculty. The executive responsibility for implementation is of the Professor and the Head of the Division concerned.

The Board of Studies meets as often as necessary but at least once at the end of each semester to review progress of students, conduct of courses in the previous semester and other academic matters.

The present composition of the Board of Studies is given as an annexure no. 23-24.
The BoS meets at least twice for the academic year and the important proceedings are given below.

- Approval of the courses to be offered to the M.F.Sc and Ph.D. scholars.
- Approval of the synopsis for dissertation/thesis work of M.F.Sc and Ph.D. scholars.
- Approval of any changes in the synopsis after due deliberations.

6.5.1.4. Anti-Ragging Cell

The institute has strict and zero-tolerance policy against ragging. An anti-ragging committee is in place to prevent ragging. The institute also displays posters in prominent places of university/college campus to discourage ragging. The institute undertakes affidavits from every student during the time of admission and maintains a proper record of the same. The same is also displayed in the institute website. The committee for the anti-ragging is given in the annexure 25.

6.5.1.5. Biological waste disposal facility

The institute has a standard protocol for disposing the biological waste generated from various research activities. The biological wastes are segregated in to non-biohazard and bio-hazard and accordingly, the waste is stored in different colour coded containers. The bio-hazard waste is disposed through the third party (authorised by BMC) M/s SMS Envoclean Pvt. Ltd. on payment basis. The non- bio-hazard material is disposed of by burning in the incinerator.

CIFE also practices segregation of wastes into solid, wet and e-waste for better disposal of the wastes.

6.5.1.6. Institutional Ethics Committee for Experiment on Animals

The Institute has Institutional Ethics Committee for Experiment on Animals (IAEC) as per the guidelines of CPCSEA. The research projects proposed to use the lab animals require prior approval of the IAEC. The proforma for submitting the application and the committee for scrutinizing it is given in the annexure 26.

6.5.1.7. Committee for Prevention of Sexual Harassment of Women at Work Places

The Institute has a Committee for Prevention of Sexual Harassment of Women at Work Places (POSH) and the details are given below.

Date of constitution of existing committee:
13 November 2019 Order No 11(5), 2019/ Estt.

Composition of committee

- Dr. Megha Bedekar, Principal Scientist (Chairperson)
- Dr. Manjusha L, Scientist (Member)
- Dr. Mujahaid K Pathan, Scientist (Member)
- Ms Shivangi Prasad, Advocate, (External Member)
  Advocate, High Court, Legal Consultant, External Member
- Mr. Yogesh Jadhao (Member), Sr. Technical Assistant
- Mrs Swati Koli (Member Secretary), Assistant Administrative Officer

Date of meetings

No	Date	Meeting
1	17/11/2018	PoSH Workshop on 'Discrimination and Harassment at Workplace'
2	22/11/2019	Meeting
3	28/11/2019	Meeting
4	05/08/2020	Meeting
5	17/12/2020	PoSH Workshop on 'Sexual Harassment at Workplace'
6	18/12/2020	PoSH Workshop on 'Sexual Harassment at Workplace'

6.5.2. Faculty

6.5.2.1. Faculty Strength

S. No.	Faculty	Sanctioned Position	Faculty in place	Vacant position	Faculty recommended by the ICAR/ UGC/VCI/ other regulatory bodies
1.	Director & Vice-Chancellor	01	01		ICAR
2.	Joint Director	01	1 (from April 2021)		
2.	Professor	10	07	06	
3.	Associate Professor	20	21	1(extra)	
4.	Assistant Professor	77	59	18	
	Total	**109**	**86**	**24**	

6.5.2.2. Faculty Profile (department-wise)

S. No.	Name of the Scientist/Faculty	Designation	Multiple programmes handled
1.	Dr. Gopal Krishna	Director/Vice-Chancellor	RMP
2.	Dr. N. P. Sahu	Joint Director / Pro-Vice Chancellor	RMP (from 27 April 2021)
	Aquaculture		
3.	Dr. N. K. Chadha	Principal Scientist & HoD	PG & Ph.D.
4.	Dr. K. K. Krishnani	Principal Scientist	PG & Ph.D.
5.	Dr. A. K. Verma	Senior Scientist	PG & Ph.D.
6.	Dr. Paramita Banerjee Sawant	Senior Scientist	PG & Ph.D.
7.	Dr. Babitha Rani, A. M.	Senior Scientist	PG & Ph.D.
8.	Dr. Thongam Ibemcha Chanu	Scientist	PG
9.	Dr. Upasana Sahoo	Scientist	PG
10.	Dr. Madhuri Pathak	Scientist	PG
11.	Dr. Kapil Sukhdane	Scientist	PG
	Fishery Resources, Harvest and Post-Harvest Management		
12.	Dr. B. B. Nayak	Principal Scientist & HoD	PG & Ph.D.
13.	Dr. Geetanjali Deshmukhe	Principal Scientist	PG & Ph.D.
14.	Dr. A. K. Jaiswar	Principal Scientist	PG & Ph.D.

15.	Dr. Amjad K. Balange	Principal Scientist	PG & Ph.D.
16.	Dr. Sanath Kumar H.	Principal Scientist	PG & Ph.D.
17.	Dr. Asha T. Landge	Senior Scientist	PG & Ph.D.
18.	Dr. Zeba Jaffer Abidi	Senior Scientist	PG & Ph.D.
19.	Dr. Martin Xavier, K. A.	Scientist	PG & Ph.D.
20.	Dr. Manjusha, L.	Scientist	PG & Ph.D.
21.	Dr. Shashi Bhushan	Scientist	PG & Ph.D.
22.	Dr. Layana P.	Scientist	PG
23.	Mr. Karan kumar K. Ramteke	Scientist	PG
24.	Mr. Abuthagir Iburahim S.	Scientist	PG
25.	Ms. Shobha Rawat	Scientist	PG
26.	Ms. V. Vidhya	Scientist	PG
27.	Mr. Dayal Devdas	Scientist	PG
	Fish Nutrition, Biochemistry & Physiology		
28.	Dr. N. P. Sahu (Up to 26th April 2021)	Principal Scientist & HoD	PG & Ph.D.
29.	Dr. P. P. Srivastava (On Deputation)	Principal Scientist	PG & Ph.D.
30.	Dr. Parimal Sardar	Principal Scientist	PG & Ph.D.
31.	Dr. Subodh Gupta	Principal Scientist	PG & Ph.D.
32.	Dr. Ashutosh D. Deo	Principal Scientist	PG & Ph.D.
33.	Dr. Sikendra Kumar	Scientist	PG & Ph.D.
34.	Dr. Tincy Verghese	Scientist	PG & Ph.D.
35.	Dr. Shamna N.	Scientist	PG & Ph.D.
36.	Dr. Manish Jayant	Scientist	PG & Ph.D.
	Aquatic Environment and Health Management		
37.	Dr. K.V. Rajendran	Principal Scientist & HoD	PG & Ph.D.
38.	Dr. K. Pani Prasad	Principal Scientist	PG & Ph.D.
39.	Dr. P. K. Pandey (On deputation)	Principal Scientist	PG & Ph.D.
40.	Dr. R.P. Raman	Principal Scientist	PG & Ph.D.
41.	Dr. Gayatri Tripathi	Principal Scientist	PG & Ph.D.
42.	Dr. S. P. Shukla	Principal Scientist	PG & Ph.D.
43.	Dr. Megha Kadam Bedekar	Principal Scientist	PG & Ph.D.
44.	Dr. Vidya Shree Bharati	Senior Scientist	PG & Ph.D.
45.	Dr. Kundan Kumar	Senior Scientist	PG & Ph.D.
46.	Dr. Jeena K.	Scientist	PG & Ph.D.
47.	Dr. Saurav Kumar	Scientist	PG & Ph.D.
48.	Dr. Rathi Bhuvaneshwari	Scientist	PG & Ph.D.
49.	Dr. Dhamotharan K.	Scientist	PG
50.	Dr. Arun Sharma	Scientist	PG
	Fish Genetics & Biotechnology		
51.	Dr. Aparna Chaudhari	Principal Scientist & HoD	PG & Ph.D.
52.	Dr. Naresh S. Nagpure	Principal Scientist	PG & Ph.D.
53.	Dr. S. Jahageerdar	Principal Scientist	PG & Ph.D.

54.	Dr. Rupam Sharma	Principal Scientist	PG & Ph.D.
55.	Dr. Mukunda Goswami	Principal Scientist	PG & Ph.D.
56.	Dr. Manoj Pandit Brahmane	Principal Scientist	PG & Ph.D.
57.	Dr. Annam Pavan Kumar	Senior Scientist	PG & Ph.D.
58.	Dr. Mujahidkhan Pathan	Scientist	PG & Ph.D.
59.	Mr. Angom Lenin Singh	Scientist	PG
60.	Mr. Kiran D. Rasal	Scientist	PG
	Fisheries Economics, Extension & Statistics		
61.	Dr. S. N. Ojha	Principal Scientist HoD, (Acting)	PG & Ph.D.
62.	Dr. Arpita Sharma	Principal Scientist	PG & Ph.D.
63.	Dr. Swadesh Prakash	Principal Scientist	PG & Ph.D.
64.	Dr. P. S. Ananthan	Principal Scientist	PG & Ph.D.
65.	Dr. Rama Sharma	Principal Scientist	PG & Ph.D.
66.	Mr. Vinod Kumar Yadav	Scientist	PG & Ph.D.
67.	Dr. Neha W. Qureshi	Scientist	PG & Ph.D.
68.	Dr. Shivaji Argade	Scientist	PG & Ph.D.
69.	Dr. Ankush L. Kamble	Scientist	PG & Ph.D.
	ICAR-CIFE, Kolkatta Centre		
70.	Dr. G. H. Pailan	Principal Scientist & Scientist In-charge	PG, Ph.D. & one year PGDIF&AM
71.	Dr. B. K. Mahapatra	Principal Scientist	-do-
72.	Dr. Subhendu Datta	Principal Scientist	-do-
73.	Dr. Sukham Munil Kumar	Principal Scientist	-do-
74.	Dr. Subrata Dasgupta	Principal Scientist	-do-
75.	Dr. Sujata Sahoo	Scientist	-do-
76.	Mr. Dilip Kumar Singh	Scientist	-do-
77.	Ms. Husne Banu	Scientist	-do-
78.	Dr. Suman Manna	Scientist	-do-
	ICAR-CIFE, Powerkheda Centre		
79.	Dr. Sunil Kumar Nayak	Scientist & Scientist In-charge	PG & Ph.D.
80.	Mr. Dhalong Saih Reang	Scientist	PG
	ICAR-CIFE, Kakinada Centre		
81	Dr. Muralidhar Penchala Ande	Senior Scientist & Scientist In-charge	PG, one year Skill development program in Hatchery at Kakinada, Andhra Pradesh
82	Dr. Kartireddy Syamala	Scientist	-do-

	ICAR-CIFE, Rohtak Centre		
83	Mr. Vungarala Hari Krishna	Scientist & Scientist In-charge	PG & Ph.D.
84	Dr. Pankaj Kumar	Scientist	PG
85	Dr. Sreedhran K.	Scientist	PG
86	Mr. Satya Prakash	Scientist	PG
	ICAR-CIFE, Motipur Centre		
87	Dr. Md. Aklakur	Scientist & Scientist In-charge	PG

6.5.2.3. Credentials of the Faculty:

Division-wise faculty details are given below along with their experience in research, teaching, number of publications and H-index. The faculty profile is sufficient to meet the academic requirements of the university.

Aquaculture Division						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. N. K. Chadha	Principal Scientist & HoD (Acting)	Ph.D.	30	30	112	10
Dr. V. K. Tiwari	Principal Scientist (Rtd. on December 2019)	Ph.D.	30	30	34	9
Dr. A.K. Verma	Senior Scientist	Ph.D.	18	18	52	12
Dr. Babitha Rani A. M	Senior Scientist	Ph.D.	13	13	34	8
Dr. Kishore K. Krishnani	Principal Scientist	Ph.D.	02	28	69	23
Dr. Paramita Banerjee Sawant	Senior Scientist	Ph.D.	11	15	74	8
Ms. Madhuri Shrikant Pathak	Scientist	Ph.D.	02	04	03	--
Ms. Upasana Sahoo	Scientist	Ph.D.	02	04	03	--
Ms. Thongam I Chanu	Scientist	Ph.D.	02	07	34	6

Fisheries Resources, Harvest and Post-Harvest Division						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. B. B. Nayak	Principal Scientist & Head	Post Doc; Ph.D.	25	25	114	18
Dr. Geetanjali Deshmukhe	Principal Scientist	Ph.D.	20	20	42	11
Dr. A. K. Jaiswar	Principal Scientist	Ph.D.	30	30	183	14
Dr. Sanath Kumar H	Principal Scientist	Post Doc Ph.D	10	15	96	30
Dr. A. K. Balange	Principal Scientist	Ph.D.	12	12	95	15
Dr. Asha T. Landge	Senior Scientist	Ph.D.	30	30	23	5
Dr. Zeba Jaffer Abidi	Senior Scientist	Ph.D.	30	30	10	--
Dr. Martin Xavier	Scientist	Ph.D.	15	15	81	10
Dr. Manjusha	Scientist	Ph.D.	11	11	35	11
Dr. Shashi Bhushan	Scientist	Ph.D.	06	06	21	5
Dr. Karankumar K. Ramteke	Scientist	PG	05	05	14	2
Dr. Layana	Scientist	Ph.D.	05	05	07	2
Mr. Abuthagir Iburahim S.	Scientist	PG	01	01	--	--
Ms. Shobha Rawat	Scientist	PG	01	01	--	--
Ms. V. Vidya	Scientist	PG	01	01	--	--
Mr. Dayal Devadas	Scientist	PG	01	01	--	--

Fish Nutrition, Biochemistry & Physiology Division						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. N. P. Sahu	Head & Principal Scientist	Ph.D.	28	28	244	41
Dr. P. P. Srivastava	Principal Scientist	Ph.D.	31	31	101	10
Dr. Subodh Gupta	Principal Scientist	Ph.D.	13	13	71	11
Dr. Parimal Sardar	Principal Scientist	Ph.D.	24	24	56	7
Dr. Ashutosh D. Deo	Principal Scientist	Ph.D.	07	07	39	8
Dr. Sikendra Kumar	Scientist	Ph.D.	07	07	16	3
Dr. Shamna N	Scientist	Ph.D.	07	07	28	8
Dr. Tincy Varghese	Scientist	Ph.D.	07	07	64	8
Dr. Manish Jayant	Scientist	Ph.D.	06	06	11	4

Fish Genetics and Biotechnology Division						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. Aparna Chaudhari	Head & Principal Scientist	Ph.D.	30	30	51	11
Dr. S. Jahageerdar	Principal Scientist	Ph.D.	30	30	42	8
Dr. N. S. Nagpure	Principal Scientist	Ph.D.	06	30	99	23
Dr. Rupam Sharma	Principal Scientist	Ph.D.	14	14	48	9
Dr. Mukunda Goswami	Principal Scientist	Post Doc. Ph.D.	07	15	56	16
Dr. Manoj P. Brahmane	Principal Scientist	Ph.D.	01	25	26	10
Dr. A. Pavan Kumar	Senior Scientist	Ph.D.	12	12	69	11
Dr. Mujahid Khan Pathan	Scientist	Ph.D.	06	06	8	4
Mr. Angom Lenin Singh	Scientist	M.F.Sc	05	05	2	--
Mr. Kiran D. Rasal	Scientist	M.F.Sc	01	06	29	7

Aquatic Environment and Health Management Division						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. K.V. Rajendran	Head & Principal Scientist	Post Doc. Ph.D.	29	29	72	23
Dr. K. Pani Prasad	Principal Scientist		26	26	93	16
Dr. R.P. Raman	Principal Scientist	Ph.D.	32	32	39	15
Dr. Gayatri Tripathi	Principal Scientist	Ph.D.	14	20	45	12
Dr. S. P. Shukla	Principal Scientist	Ph.D.	13	13	50	9
Dr. Megha Kadam Bedekar	Principal Scientist	Ph.D.	14	14	47	6
Dr. Vidya Shree Bharti	Senior Scientist	Ph.D.	14	14	38	4
Dr. Kundan Kumar	Scientist	Ph.D.	12	12	54	14
Dr. Jeena K	Scientist	Ph.D.	6	6	18	5
Dr. Saurav Kumar	Scientist	Ph.D.	6	6	63	11
Dr. Rathi Bhuvaneswari	Scientist	Ph.D.	6	6	10	4
Dr. Dhamotharan K	Scientist	Ph.D.	3	6	9	4

Fisheries Economics, Extension and Statistics Division						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. S. N. Ohja	Head & Principal Scientist	Ph.D.	32	32	17	3
Dr. Arpita Sharma	Principal Scientist	Ph.D.	25	25	73	3
Dr. Swadesh Prakash	Principal Scientist	Ph.D.	14	14	21	4
Dr. Ananthan P. S.	Principal Scientist	Ph.D.	19	19	57	6
Dr. Rama Sharma	Principal Scientist	Ph.D.	35	35	24	3
Dr. V. K. Yadav	Principal Scientist	Ph.D.	12	12	22	3
Dr. Neha W. Qureshi	Principal Scientist	Ph.D.	5	5	30	2
Dr. Shivaji D. Argade	Principal Scientist	Ph.D.	3	3	--	--

CIFE Regional Centers

Kolkata Regional Center						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. G. H. Palian	Principal Scientist	Ph.D.	14	14	52	7
Dr. B. K . Mahapatra	Principal Scientist	Ph.D.	14	14	108	9
Dr. Subrata Das Gupta	Principal Scientist	Ph.D.	11	11	60	12
Dr. Munil Kumar	Principal Scientist	Ph.D.	14	14	51	9
Dr. Sujatha Sahoo	Principal Scientist	Ph.D.	09	09	30	4
Dr. Subendu Datta	Principal Scientist	Ph.D.	22	22	98	7

Kakinada Regional Center						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. A. P. Muralidhar	Senior Scientist	Ph.D.	12	12	42	6
Dr. K. Syamala	Scientist	Ph.D.	05	05	18	3
Dr. Arun Sharma	Scientist	Ph.D.	06	06	24	4

Powarkheda Regional Center						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. Sunil Kumar Nayak	Scientist	Ph.D.	6	6	13	3
Mr. Dhalong S. Reang	Scientist	PG	5	5	5	2

Rohtak Regional Center						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Mr. V. Hari Krishna	Scientist	PG	13	13	20	5
Dr. Pankaj Kumar	Scientist	Ph.D.	05	05	17	6
Dr. Sreedharan K	Scientist	Ph.D.	04	04	14	8
Mr. Satya Prakash	Scientist	Ph.D.	04	04	14	2

Mothihar Regional Center						
Name	**Designation**	**Academic Degree**	**Teaching experience (years)**	**Research experience (Years)**	**Number of research publications**	**H-index**
Dr. Md. Aklakur	Scientist	Ph.D.	06	06	21	8

6.5.2.4. Technical and Supporting Staff

Department	Technical Staff	Supporting Staff
Aquaculture	3	1
Fisheries Resources, Harvest and Post- Harvest Management	3	--
Fish Nutrition, Biochemistry and Physiology	1	1
Aquatic Environment and Health Management	1	--
Fish Genetics and Biotechnology	2	--
Fisheries Economics, Extension & Statistics Division	3	1

6.5.3. Learning resources

6.5.3.1 College Library (digital)

The library is located at the academic building, Panch Marg Campus. The university library has a wide collection of books, journals, magazines and e-books. It also has a huge collection of literature in the form of electronic media and available to students and staff through the CIFE website. The details of books available in the library are given below

Particulars	Quantity
Books	41,007
Hindi Books	5300
e-books	1309
CIFE Price Publications	42
Back volumes of INDIAN journals	4228
Back volumes of Foreign journals	8759
M.F.Sc Dissertation	1423
Ph.D. Thesis	392
Total collection	**62,460**

The library can accommodate 65 users at a time to refer and read the library books.

Library Automation: The books and other reading material are catalogued in the LMS (Library Management System) using Koha software, a comprehensive search facility through the Open Public Access Catalogue(OPAC). It can be accessed anytime from anywhere through the url: http://cifeopac.bestbookbuddies.com/

Library extends the facility to index theses and dissertations of Masters and Ph.D. research scholars. Currently, it has uploaded 1187 of theses/dissertations on 'Krishi kosh' and the same could be accessed through url: https://krishikosh.egranth.ac.in/handle/1/33860. CIFE has adopted RFID (Radio frequency identification) technology to manage the library books for lending, returning, sorting and tagging etc.

The library team of CIFE consists of a Librarian, 2 Sr. Library Assistants, attendant, 2 data operators and 1 supporting staff. CIFE is an active member of ICAR-Consortium for e-Resources in Agriculture (popularly known as CeRA). Library operates from 10 am to 6 pm. WiFi and LAN connections are available in the campus.

6.5.3.2. Laboratories, Instructional farm, Workshops, Dairy Plant, Veterinary Clinic, Hatchery, Ponds etc.:

The institute has several labs, hatchery and ponds for conducting the practical and hands on training. The list is given below.

Old Campus

Facility	Area in SQM
Soil and Water Chemistry Lab	209.25
Wet Laboratory	45.00
Aquaculture lab	34.65
Aquatic Environment lab	32.00
Fish Biochemistry lab	24.00
Fish Processing lab	122.00
Quality Control lab	71.00
Product Development lab	43.00
Computer lab	65.00
Digital Imaging lab	24.00
Photography lab	23.00
Giant Freshwater Prawn Hatchery	84.33
Carp Hatchery	84.33
Museum	69.00
Auditorium	115.00
Workshop	534.75
Gymnasium	209.00
Guest House	102.30

Yari Road Campus

Facility
Aquaculture Division
Water and Soil Chemistry Lab
Wet lab
Ornamental fish hatchery
Ponds
Aquatic Environment and Health Management Division
Cell culture lab (Room No. 131)
General Pathology (Room No. 132)
Molecular lab (Room No. 133)
Microbiology and Histopathology Lab (Room no. 127)
Fisheries Resources, Harvest and Post-Harvest Management Division
Craft and Gear technology (Engineering) Lab (Room no. 210)
Taxonomy lab 1 (Room No. 201)
Taxonomy lab 1 (Room No. 202)
Biology Lab (Room No. 012)
Algal lab (Room No. 26D)

Fish Genetics and Biotechnology Division
Fish Genetics Lab (Room No. 427)
Computational Genetics lab (Room No. 425)
Fish Biotechnology lab (Room No. 432)
Fish Nutrition, Biochemistry and Physiology Division
Fish Biochemistry & Physiology lab (Room no. 111)
Molecular Biology lab (112)
Physiology Histology lab (Room no.118)
Fish Feed Technology lab (Room no. 101)
Nutrition Analysis Lab (Room no. 102)
Proximate Analysis Lab (Room no. 103)
NAHEP Lab

Farm Facilities

The additional strengths of CIFE are its aqua farms located at five places all over the country. The farm facilities are used for research, practical training and students' internship purposes. The details of farm facilities at different centers

S. No	Place	Farm	Area in hectares
1.	Kakinada, Andhra Pradesh	Brackishwater farm	03.2
2.	Balabhadrapuram, Andhra Pradesh	Freshwater farm	08.0
3.	Powerkheda, Madhya Pradesh	Freshwater farm	44.0
4.	Rohtak, Haryana	Freshwater farm	02.3
5.	Rohtak, Haryana	Ground Saline Water Farm	10.0
6.	Motipur, Haryana		

Vessels

The institute has two research vessels namely M.F.V. Saraswati – 36.87 m (OAL) and M.F.V. Narmada – 11.60 m (OAL)

To support its on-board training and research programmes in fishing, navigation, oceanography, fishery biology, pollution and other related studies. The students are sent on cruise as a part of their curriculum which gives them an on board experiences.

6.5.3.3. Student READY/ In-Plant Training / Internship / Experiential Learning Programmes

The institute has specialized training for skill development and competence in lieu of Student Ready/Experiential Learning for M.F.Sc. students for a period of 30 days. Training is conducted after the second semester break. The students undergo training in any government or private fish farm/hatchery/industry/enterprise, ICAR institute, university, non-governmental organization or fisheries cooperative society. The chairman (BoS) coordinates the training programme. The training report is evaluated by three designated members based on the attendance of the student at the field stations, contents and the presentation of the report.

6.5.3.4. Curricula Delivery Through IT (smart class rooms/interactive board etc.)

Three classrooms and one conference room have been upgraded to smart classes for effective teaching and organizing lectures through online. The institute is also using the online meeting tools such as Zoom, Webex, Google Meet and Microsoft tools to deliver the lectures to the students. The faculty are undergoing training to upload the lecture videos in Agri-Diksha Portal.

6.5.4. Student Development:

Student Development at the College directs its educational efforts at fostering the intellect and character of students by integrating in-class and co-curricular experiences. To accomplish this, the College provides a wide range of educational experiences through programs and activities that complement and support the academic experience in the classroom.

6.5.4.1. Student Intake and Attrition

Name of the Degree Programmes	Students enrolled in last five years (2016-21)					Attrition (%)				
	2016-17	2017-18	2018-19	2019-20	2020-21	2016-17	2017-20	2018-19	2019-20	2020-21
Sanctioned Strength in M.F.Sc.	77	77	77	96	96	-	-	-	-	-
Students enrolled in M.F.Sc.	79*	77	76	97*	96	5.19	6.49	3.89	8.33	13.54
Sanctioned Strength in Ph.D.	44	44	44	55	55	-	-	-	-	-
Students enrolled in Ph.D.	57*	56*	67*	73*	65*	0	15.90	34.09	23.63	60.00

***Minimum 11 students for in-service and foreign students get admitted over and above the sanctioned strength*

6.5.4.2. Average Number of Students in Theory and Practical Classes

S. No.	Name of the Degree Programme	Batch of students in Theory class	Batch of students in practical class
1.	FGB (M.F.Sc.)	6	6
2.	FGB (Ph.D.)	3	3
3.	FBT (M.F.Sc.)	6	6
4.	FBT (Ph.D.)	4	4
5.	AQC (M.F.Sc.)	13	13
6.	AQC (Ph.D.)	13	13
7.	FRM (M.F.Sc.)	9	9
8.	FRM (Ph.D.)	10	10
9.	FNFT (M.F.Sc.)	6	6
10.	FNFT (Ph.D.)	5	5
11.	FPB (M.F.Sc.)	6	6
12.	FPB (Ph.D.)	3	3
13.	FEC (M.F.Sc.)	6	6
14.	FEC (Ph.D.)	3	3
15.	FEX (M.F.Sc.)	6	6
16.	FEX (Ph.D.)	4	4
17.	AEM (M.F.Sc.)	6	6
18.	AEM (Ph.D)	4	4
19.	AAHM (M.F.Sc.)	8	8
20.	AAHM (Ph.D.)	6	6
21.	PHT (M.F.Sc.)	7	7
22.	PHT (Ph.D.)	7	7

6.5.4.3. Admission Process

The Institute admits students to various academic programmes under two separate categories namely i) Open competition, and ii) Foreign students

Open competition

An advertisement for admissions to PG courses is published in the leading newspapers of India each year during March/April inviting applications for admission. The last date for receipt of applications is generally in the last week of May.

Eligibility

M.F.Sc.
The candidates having their Bachelor's Degree in the concerned field under 10 + 2 + 4 are eligible to apply for admission. Candidates must have obtained at least 60% marks or an overall grade point average (OGPA) of 6.50 out of 10.00, 3.25 out of 5.00 or 2.60 out of 4.00 (for SC/ST candidates 55% marks or OGPA of 6.00 out of 10.00, 3.00 out of 5.00 or 2.40 out of 4.00).
Ph.D.
B.F.Sc. & M.F.Sc. (4 +2 yrs) or B.Sc & M.Sc. (3yrs) from CIFE (till 1995), with M.F.Sc./M.Sc. OGPA 7.5 out of 10 and 3.75 out of 5 For General / OBC candidates (OGPA for SC/ST candidates is 7.00 out of 10 and 3.50 out of 5). (OR) D.F.Sc. from CIFE, provided the candidate holds a Bachelor's degree in biological science and has two years of experience in fisheries development work after obtaining D.F.Sc. In case of sponsored candidates, those holding M.Sc. in Fish and Fisheries and related disciplines with at least two years' experience in fisheries development work are also eligible to apply.

Selection for M.F.Sc.

A combined examination for the award of ICAR Junior Research Fellowship and admissions to 100% seats of Master's Degree Programme at CIFE is conducted by the Indian Council of Agricultural Research, Krishi Anusandhan Bhavan, Pusa, New Delhi, in the first week of June. Candidates are selected for the award of ICAR Junior Research Fellowship and admission to State Agricultural Universities and Deemed Universities on the basis of merit in the Entrance Examination and Counselling.

Selection for Ph.D.

Admissions are made on the basis of written test and interview for Ph.D. The academic score has a weightage of 20%, the subject matter written test score constitutes 70 %, while the interview score contributes the remaining 10%. However, from the year 2020, National Testing Agency (NTA) is organizing national level Ph.D. entrance test for admission to the CIFE.

Foreign students

Foreign students seeking admission forward their applications through their respective Embassies at New Delhi or through the respective Indian Missions abroad to the Government of India/ICAR and their candidature is considered only if they are sponsored by the Government of India/ICAR.

Eligibility

Foreign students are exempted from appearing in the written test and interview. Thus admission is made on the scrutiny of the bio-data and on the recommendation of the Head of the concerned discipline.

Procedure for application

The last date for receipt of applications and results/marks-sheets from the applicants who are foreign nationals but are resident in India will be the same as prescribed for the applicants who are Indian citizens, and that the self-financing foreign students out of them are called for the written test and interview only if they have prescribed qualifications as for the Indian applicants, admission is through the open competition**.**

6.5.4.4. Conduct of Practical and Hands on Training

The syllabus/course content is designed in such a way that appropriate weightage/importance is given to the practicals. Accordingly, the course credit hours are designed that at least minimum 1 credit hour (120 minutes) is allotted to each course. Few courses that require more practicals are designed to have 3 credit hours.

The headquarters of the university has earthen ponds, FRP tanks, hatcheries and wet lab facilities for conducting practicals on aquaculture, nutrition and health management. The university is unique in having farm facilities with brackish water (Kakinada regional centre), freshwater (Powarkheda, Kakinada) and Inland saline water (Rohtak) for conducting hands-on-training experience on freshwater/brackish water aquaculture systems. CIFE has two fishing vessels namely MFV Saraswati (OAL-36m) and MFV Narmada (OAL-11m) to support its on-board research and training programmes on fishing, navigation, oceanography and other such studies. The vessel Saraswati is equipped with Global Positioning System (GPS), Very High Frequency Radio (VHFR), Radiotelephone (RP), Echo sounder, Sonar and Trawl eye for conducting practicals in fisheries resource management.

Each division of the university has dedicated laboratories with all the basic and advanced instruments (Amino Acid Analyser, Fluorescence-activated Cell Sorter, AutomaticTissue Processor, -80^0 Deep Freezer, Tissue Embedder, Real Time PCR, Refrigerated Centrifuge Ultra Centrifuge, Microtissue Processor etc.) to conduct practical for the students. Each course teacher prepares the learning material for conducting practical and distributes it to the students. Further, CIFE allows students to work in labs beyond the office hours to complete their research based activities.

6.5.4.5. Examination and Evaluation Process
System of evaluation for PG courses (M.F.Sc)

First Quiz Test: This test is conducted during the 5th/6th week of the semester and is of objective type. This is a part of internal assessment.

Mid-Semester Examination: During the 11th week of each semester, mid-semester exam is conducted by the concerned Course Teacher. The question paper consists of objective questions (10% of maximum marks) and subjective questions covering the prescribed syllabus.

End-of-Semester or Final Examination: For Master's programme, the final examination is set and evaluated by the external expert. In case of Doctoral scholars, the paper is set by the internal paper faculty and the evaluation is also internal. Final practical examination is conducted and evaluated by the course teacher.

Comprehensive Examination for M.F.Sc

A comprehensive examination is conducted for the M.F.Sc. students for 100 marks covering all the courses the student registered in the first year. The questions are concept / application oriented with an objective to test the comprehensive knowledge of the student. The answer sheets of the comprehensive test are evaluated by the external expert and the student should get minimum 60% to pass the comprehensive exam. A student who fails in the written paper of comprehensive examination is given a chance to reappear in next scheduled exam in February and *viva-voce* is conducted only after the student has passed in the written paper. Marks of the comprehensive examination are not accounted towards calculation of the GPA/OGPA.

Comprehensive Examination and *Viva-voce* for Ph.D.

For Ph.D. scholars also, a comprehensive exam is conducted for the Ph.D. scholars for 100 marks covering all the courses the student has registered in the first year. The questions concept / application oriented with an objective to test the comprehensive knowledge of the student. The answer sheets of the comprehensive test are evaluated by the external expert and the student should get minimum 60% to pass the comprehensive exam. A student who fails in the written paper of comprehensive examination shall be given a chance to reappear in next scheduled exam in February Accordingly, viva-voce is held after second year to test the knowledge of the student on the selected research topic. Marks of the comprehensive examination are not accounted towards calculation of the GPA/OGPA.

Thesis Evaluation: The M.F. Sc dissertation is evaluated by the external expert and the final viva-voce is conducted by the BoS of the respective discipline. For Ph.D. scholars, the theses will be evaluated by two external experts and the final open *viva-voce* will be conducted by the Controller of Examination, ICAR-CIFE.

6.5.4.6. NCC/NSS/RVC Units:

NA

6.5.4.7. Language Laboratory:

NA

6.5.4.8. Cultural Centre:

The Institute has a cultural centre with musical instruments and other accessories. The student representatives of Post-graduate School Students Union (PGSSU) lead the cultural committee and activities. The institute organizes several cultural programmes on the occasion of CIFE annual day, Hostel day, Fish farmers day and other special occasions to inculcate the team spirit and unity among the students.

6.5.4.9. Personality Development

The institute has a Personality Development Centre with an aim to improve the communication skills in the students. The centre has organized several workshops for students and the details are given below.

Activity	Number of students attended	Brief Particulars
Personality development program	26	A personality development program was conducted by Mr. Animesh Gupta on “Limitless, Mumbai” during 16 May-18 August, 2015. The program consisted of various activities intended to boost the confidence, composed thought process, improvement of body language, positive thinking, emotional intelligence, stress management etc. The activities included group discussions, presentations, team work and neuro-linguistic programing.
English language training	30	The English language program was organized from 22 August-28 November, 2015 every Saturday from 3 pm to 6 pm. The program was conducted by BM English training institute, Mumbai. The goal of the program was to impart professional English language skills to first year Master’s students. The program consisted of intense training in general speaking skills, sentence formation, grammar improvement, presentation skills, assertive attitude, etiquettes and manners and vocabulary.
two-day personality development programme	30	PDCCC organized ‘Personality Development Programme for ICAR-CIFE students during 21-28 April 2018. The program covered confidence building, motivation, self-assessment, facing interview, conflict management, stress management and team work.
English language training program	30	Organized for the students of CIFE from 03 May-26 June 2018. This training program consisted of 40 hours of training on vocabulary, introduction, conversation skills, negotiating, objection handling, issue handling, telephonic etiquette, e-mail etiquette, interview skills, resume writing etc.

6.5.5. Physical facilities

6.5.5.1. Hostels

ICAR-CIFE has four hostels of which two are for girl students and two for Boys' students. The details are given below.

1.	CSM Boys Hostel Seven Bungalow Campus	69
2.	PhD Boys Hostel New Campus	86
3.	Students per room accommodated in C.S.M. Hostel, Seven Bungalow Campus	02
4.	Students per room accommodated in Ph.D Hostel	01
5.	Mess facility	YES
6.	Drinking water	YES
7.	Indoor games especially for Boys	YES
8.	Cleaning of hostel premises	YES
9	Transport facility	YES
10.	Emergency medical facility	YES

Girls Hostel

There are two hostels for the accommodation of girl students in ICAR-CIFE, one at new campus and another one at old campus.

The Girls' Hostel at New Campus

The hostel in new campus has a capacity of 60 rooms spread over 5 floors with 12 rooms in each floor. A total of 120 students can be accommodated on twin sharing basis. All rooms are provided with balcony, and well-furnished with curtains, cots, tables, cupboards and bookshelves. Each floor has 3 washrooms and toilets each, with other facilities such as washing machine, hand wash area and mirrors. Sufficient number of cloth drying racks and shoe racks are provided on each floor. Drinking water facilities including water cooler and purifier are provided on each floor. In addition to the regular rooms, there are 3 guest rooms out of which two rooms have got attached washrooms. A napkin vending machine is installed for use in the washroom at 5^{th} floor.

The ground floor of the hostel houses a spacious mess hall with nine sets of dining tables and chairs where food is served for the students. A refrigerator, -20 deep freezer and a water purifier/cooler are provided in the mess hall. The kitchen attached to the mess hall is equipped with all required amenities in order to cater to the food requirements of more than 100 students residing in the hostel. Both vegetarian and non-vegetarian food is served in the mess, which is managed by a committee constituted by the students.

A common room/TV hall in the first floor of the hostel is used by the students in their leisure time for entertainment activities. Newspapers and magazines are also provided there with sufficient seating arrangements for students.
The housekeeping staff employed in the hostel (3 nos) takes care of the regular cleaning and maintenance of hostel rooms and common areas, including the premises surrounding the hostel.

Medical Facility

A first aid box is maintained in the hostel with all essential medicines and wound dressing materials and a wheel chair if any student falling sick or requiring medical attention. The contact numbers of two doctors-on-call are provided to the students whom they can contact in case of an emergency. The contact details of all important personnel including Warden and Deputy Warden and Care taker in connection with hostel, security and medical emergency are displayed on several common places in the hostel. A sanitizer dispenser is installed at the entrance of the Hostel and it is mandatory to use sanitizer before entering the premises. A ramp has been made at the entrance to help differently- abled students.

Necessary care and precautions are taken to safeguard the security of the girl students staying in the hostel. The hostel premises are guarded by a security staff 24x7 on rotation basis. Also, movement register, visitors register, in/out register, late entry register, complaint register etc. are provided and maintained by the hostel caretaker to keep a record of the students' movement and other matters. No visitors are allowed to enter beyond the reception area. The students leaving the hostel are required to fill up and submit the hostel leaving form with the consent and signatures of their major advisors.

Bus facility is arranged for the transportation of students between the campuses. In addition, bicycles are also provided to students.

The Hostel in Old Campus

The girl students staying in old campus have occupied the ground floor of Chatrapathi Shivaji Hostel. There are nine rooms in addition to a dormitory with six beds for the accommodation of girls. A total of 24 students can be accommodated on twin sharing basis in rooms and singly in the dormitory. There are a total of 4 washrooms and 5 toilets.

6.5.5.2. Examination hall

The examination cell uses the following designated classrooms for conducting the final exams.

Room No.	Number of Persons	Seating arrangement
Class Room No. 401	24	2x12
Class Room No. 402	24	2x12
Class Room No. 403	32	2x16
Class Room No 406	50	2x25

CIFE also has an Online examination system (ASRB) with a capacity of 200 students.

6.5.5.3. Sports and Recreation Facilities

S.No.	Name of facility	Details of facility/Sports
1.	Indoor Sports Complex	Badminton court (Synthetic Surface)-One
		Badminton court (Wooden Surface) – One
		Table tennis-Two
		Carrom-Two
		Chess-Two
		Gymnasium with latest equipment-Two
2.	Out Door Sports	Football (soil base with grass)-One
		Volleyball (soil base with grass)-Two
		Basketball (hard court)-One
		Lawn Tennis (hard court)-One
		Badminton (hard court)-Two
		Kabaddi (soil base)-One

The sports facility is maintained by the OIC (sports facility) and a sports committee. The committee arranges all accessories such as badminton rackets, football, cricket kit, basketball, shuttlecocks, and tennis balls etc to the students. To create a healthy and harmonious environment, CIFE organizes indoor and outdoor sports between faculty and staff. The experienced staff members coach students on different games such as badminton, athletics, basketball, cricket etc.

6.5.5.4. Auditorium

ICAR-CIFE has auditorium at both Seven Bungalow and Yari Road campuses. The details are given below.

Auditorium / Conference Hall	Capacity
Seven Bungalows Campus	110
Yari Road Campus	250
Conference Hall (Yari Road Campus)	100

The Yari Road campus auditorium was constructed in the year 1999 and it is used for organizing annual day, student's fresher day/ farewell day and for organizing seminars and symposia.

6.5.5.5. Exhibition Hall/Museum

CIFE has a Museum at Seven Bungalow Campus covering an area of 60 Sq. M to showcase the different freshwater and Marine water fishes.

6.5.6. Research Facilities

6.5.6.1. Post-graduate Laboratories and Equipments

1. Aquaculture Division

Aquaculture Division has two labs namely Biology lab and Soil and Water chemistry Lab. The details of equipment are given below.

List of Equipments in Aquaculture Division

Sr. No.	Equipment	Location
1	Gel Doc	Biology lab
2	Micro Wave Oven	Biology lab
3	pH Meter	Soil & Water lab
4	Centrifuge (Cooling)	Biology lab
5	PCR Machine	Biology lab
6	Tissue Homogenizer	Biology lab
7	Electronic Automatic Microprocessor	Soil & Water lab
8	Turbidity Analyser	Soil & Water lab
9	Motic Binocular Microscope	Biology lab
10	Analytical Balance	Soil & Water lab
11	Uv-Visible Spectrophotometer	Soil & Water lab
12	Motic Binocular Microscope No.10	Biology lab
13	Semi Microbalance and Optional Accessories Printer	Soil & Water lab
14	Digital Flocculator (Jar Test Apparatus)	Soil & Water lab
15	Deep Freezer	biology lab
16	Electronic Balance	Soil & Water lab
17	Bench Photometer with Dot Matrix LCD	Biology lab
18	Automatic Balance	Soil & water
19	Nephalometer	Biology lab
20	Water Bath (6 Hole)	Soil & water
21	Ph Meter Digital	Soil & water
22	Balance	soil & water
23	DO Meter Pen Digital	Soil & water
24	Vortex Mixer	Biology lab
25	Digital Autoclave	Biology lab

2. Fisheries Resource and Post-Harvest Management Division

Fisheries Resource and Management division has four labs viz., Craft and Gear technology lab, Taxonomy labs, Algal culture lab and Biology lab. The list of equipment is given below.

List of Equipment in Fisheries Resource Management Department

Sr. No.	Equipment	Location
1	Deep Freezer	Biology lab
2	Deep Freezer Horizontal	Taxonomy Lab
3	Garmin GPS	Biology Lab
4	Wireless Communication GPS Receiver	Biology Lab
5	GPS	Biology Lab
6	Canon Digicam	Biology Lab
7	Primer Software	Biology Lab
8	Gel Documentation System	Taxonomy Lab
9	Digital Hot Air Oven	Taxonomy Lab
10	Laminar Flow	Taxonomy Lab
11	Thermocycler	Taxonomy Lab
12	Digital Autoclave	Taxonomy Lab
13	Nikon SLR Camera	Biology Lab
14	SLR Camera	Biology Lab
15	Grab (Sediment)	Biology Lab
16	Rotary Microtome	Biology Lab
17	PH Meter	Taxonomy Lab
18	Water Purification System	Taxonomy Lab
19	Electronic Balance	Taxonomy Lab
20	Water Environmental Analyser	Biology Lab
21	Spectrophotometer	Taxonomy Lab
22	Sony Cyber Shot	Biology Lab
23	Godrej Refrigerator	Taxonomy Lab
24	Flame Photometer	Biology Lab
25	Rotary Microtome	Biology lab
26	Vest Frost Upright Freezer	Taxonomy Lab
27	Hot Plate	Taxonomy Lab

3. List of Equipments in Post-harvest technology Department

Sl. No.	Name of equipment	Location
1.	Anaerobic Work Station	Microbiology
2.	Biosafety Cabinets (2)	Microbiology, Virology
3.	BSL II Laminar Flow	Microbiology
4.	Autoclave (Horizontal)	Microbiology
5.	Autoflow IR-Water Jacketed CO_2 Incubator	Virology
6.	Inverted Microscope	Virology
7.	Fluorescent Microscope	Virology
8.	Compound Light Microscope (2)	Virology
9.	PCR Machines (2)	Quality Control
10.	2D Electrophoresis Unit	Quality Control
11.	Refrigerated Centrifuge (2)	Quality Control
12.	Hybridization Oven	Quality Control
13.	Gel Documentation Unit	Quality Control
14.	HPLC	Quality Control
15.	Rheometer	Quality Control
16.	Autoclave (Vertical)	Processing
17.	Deboner	Processing
18.	Basket centrifuge	Processing
19.	Battering and Breading Machine	Processing
20.	GC-MS	Instrumentation
21.	Texture Analyser	Instrumentation
22.	Nitrogen Analyser	Students
23.	Soxhlet Apparatus	Biochemistry

4. Aquatic Environment and Health Management division

The Aquatic Environment and Health Management division has two departments Aquatic Environment Management Department and Aquatic Animal Health Management Department Laboratory. The Aquatic Environment Management department is located in old campus, Seven Bungalow and the Aquatic Animal Health Management Department is in New Campus, Yari Road. The Division has Cell culture lab, General Pathology lab; Molecular lab; Sample storage facility; Wet lab; Microbiology & Histopathology lab; Instrumentation lab; Gas Chromatography Room ; Chemistry lab; Algal room. The details of equipment are given below.

Equipments in Aquatic Animal Health Management Department (New campus)

Sr. No	Equipment	Location
1.	Student Microscope (3nos)	General Pathology
2.	Refrigerator (400L) 2 Nos	Microbiology lab
3.	Laminar Flow	General Pathology
4.	Phase Contrast Microscope	Molecular lab 2
5.	Shaking Water Bath	General Pathology

6.	Rotary Microtome	General Pathology
7.	Refrigerator Double Door (710 L)	General Pathology
8.	Fume Hood	General Pathology
9.	Co_2 Cylinder	Cell Culture lab
10.	Centrifuge(CC)	General Pathology
11.	Refrigerator (430 L)	Cell Culture lab
12.	Microwave Oven	General Pathology
13.	Digital Inverted Microscope	Cell Culture lab
14.	Real Time PCR	
15.	BOD Incubator(CC)	Cell Culture lab
16.	Tissue Homegeniser	Molecular lab
17.	Hot Air Oven	General Pathology
18.	Co_2 Incubator	Cell Culture lab
19.	pH Meter	General Pathology
20.	Stereo Zoom Microscope	Cell Culture lab
21.	Table Top Shaker	Microbiology lab
22.	Digital Inverted Microscope	Cell Culture lab
23.	Biosafety Cabinet	General Pathology
24.	Centrifuge	Microbiology lab
25.	Waterbath Shaker (CC)	Microbiology lab
26.	Dry Bath	General Pathology
27.	Cryoscopic Osmometer	Cell Culture lab
28.	Autoclave	General Pathology
29.	Sanya Cool Incubator	Cell Culture lab
30.	Rocking Platform	General Pathology
31.	DNA Vacuum Concentrator	General Pathology
32.	Thermal Cycler	Molecular lab
33.	Ultra Microtome	TEM Lab
34.	Trinocular Research Microscope	TEM Lab
35.	Table Top Refrigerated Centrifuge	Molecular lab
36.	Transmission Electron Microscope	TEM Lab
37.	Gel Electrophoresis Unit for Comet Assay	Microbiology lab
38.	Horizontal Freezer(Chest Freezer)	Sample storage room
39.	Thermo Cycler	Molecular lab
40.	Table Top Shaker	General Pathology
41.	Refrigerator	Molecular lab
42.	Biosafety Cabinet	Molecular lab
43.	Vacuum Cleaner	TEM Lab
44.	ELISA Plate Washer	Molecular lab
45.	Micromanipulator System	Molecular lab
46.	Refrigerator	Sample Storage room
47.	Vertical Electrophoresis System with Gradient Former and Power Pack	General Pathology
48.	Semi-Dry Blotting Apparatus	General Pathology
49.	Microarray Scanner	Molecular lab
50.	Deep Freezer -14 to -23 ^{0}C	Sample Storage room

51.	Gradient PCR machine	Molecular lab
52.	Electrophoresis Unit	General Pathology
53.	Deep Freezer -85^{o}c	Sample storage room
54.	Deep Freezer -80^{o}c	General Pathology
55.	Weighing Balance	General Pathology
56.	Vortex Mixer	General Pathology
57.	Electronic Balance	Microbiology lab
58.	pH Meter Microprocessor Based -2nos.	General Pathology
59.	Ultrasonic Processor–Sonicator	General Pathology
60.	BOD Incubator (300lt)	General Pathology
61.	BOD Incubator (650lt)	Microbiology lab
62.	Deep Freezer -80 Degree	General Pathology
63.	Microcentrifuge	Microbiology lab
64.	Water Purification System	Microbiology lab
65.	Digital Hotplate	General Pathology
66.	Deep Freezer -20 Degree (2 Nos)	Sample storage room
67.	Trinocular Microscope	Cell Culture lab
68.	Automatic Tissue Processor	General Pathology
69.	Histoembedder	General Pathology
70.	Ultra Centrifuge	General Pathology
71.	Fluorescent Automated Cell Sorter	NAHEP lab

5. Equipment in Aquatic Environment Management Department (Old campus)

Sr.No.	Name of Equipment	Location
1	Automatic Microbial Identification System (Vitek)	Instrumentation Lab
2	Gas Chromatography (GC)	Gas Chromatography Room
3	CHNS-O Analyser	Instrumentation Lab
4	Flame Photometer	Microbiology Lab
5	Lyophilizer (Freeze Drier)	Instrumentation Lab
6	Weighing Balance	Microbiology Lab
7	Refrigerated Centrifuge	Microbiology Lab
8	-80^{o} Deep Freezer	Microbiology Lab
9	Rotary Evaporator	Instrumentation Lab
10	Automatic Microkjeldahl	Chemistry Lab
11	BOD Incubator	Instrumentation Lab
12	DGGE (Denaturing Gradient Gel Electrophoresis)	Microbiology Lab
13	Gel Electrophoresis Horizontal	Microbiology Lab
14	Table Top Orbital Shaker	Microbiology Lab
15	Trinocular Microscope	Instrumentation Lab
16	Plant Growth Chamber	Algal Room
17	Multi Temperature Water Bath Circulator	Microbiology Lab
18	pH Meter	Algal Room

19	GPS	Algal Room
20	PCR Thermal Cycler	Microbiology Lab
21	Double Beam UV-VIS Spectrophotometer	Algal room
22	Ph-Meter-Microcessor Based	Algal room
23	Microprocessor Conductivity-TDS-Salinity Temperature Meter with Graphical Display (N and M)	Algal room
24	Digital Flame Photometer with Dual Channel (N & M)	Chemistry Lab
25	Magnetic Stirrer	Algal Room
26	UV-VIS Spectrophotometer	Algal room
27	Refrigerated Centrifuge	Algal room
28	Vertical Deep Freezer	Algal room Algal Room
29	Biomass Burn Furnace	Instrumentation room

6. Fish Genetics and Biotechnology Division

List of Equipment in Fish Genetics and Biotechnology Division

Sr. no.	Details of Instrument	Location
1	Olympus Microscope	Fish Genetics Laboratory 1
2	Vertical Gel Electrophoresis Unit, Horizontal Electrophoresis Unit	Fish Genetics Laboratory 2
3	Vertical Gel Electrophoresis Apparatus	Fish Genetics Laboratory 2
4	CM-12 Cooling Microfuge Machine	Fish Genetics Laboratory 2
5	2 MLH Magnetic Stirrer With Hot Plate	Fish Genetics Laboratory 2
6	RSB-12 Water Bath Shaker	Fish Genetics Laboratory 2
7	Remi Cyclomixer (M10)	Fish Genetics Laboratory 2
8	Olympus Binocular Microscope Model	Fish Genetics Laboratory 2
9	Horizontal Gel Apparatus	Fish Genetics Laboratory 2
10	Rocking Platform	Fish Genetics Laboratory 2
11	Programmable Freezer	FGB Lab 1
12	Remi Clinical Centrifuge	Fish Genetics Laboratory 2
13	Ultrasonic Cleaner Capacity 18 Litres	Fish Genetics Laboratory 2
14	Vertical Laminar Airflow	Fish Genetics Laboratory 2
15	Control Dynamic pH Meter	Fish Genetics Laboratory 2
17	Vertical Gel Electrophoresis Apparatus	Fish Genetics Laboratory 2
18	Microfuge with Stepless Speed Control	FGB Lab 1
19	Thermostatically Controlled Water Bath	Fish Genetics Laboratory 2
20	Kenstar Microwave (Kenstar)	Fish Genetics Laboratory 2
21	Stabilizer 10KVA	FGB Lab 1
22	Stabilizer 10KVA	FGB Lab 1

23	Vertical Autoclave	Fish Genetics Laboratory 2
24	Microscope-Hund Wetzeler	FGB Lab 1
25	LG Refrigerator	
26	Microscope With Fluorescence & Phase, Stereozoom Microscope With Camera Port (Carl Ziess)	Cell Culture Lab
27	Biophotometer (Eppendorf)	Fish Genetics Laboratory 2
28	Hybrilinker (UVP)	Fish Genetics Laboratory 2
29	Motility Analyzer	FGB Lab 1
30	Microwave Oven With Grill, 30 Ltrs (LG)	Fish Genetics Laboratory 2
31	Refrigerator, 340 Ltrs	Fish Genetics Laboratory 2
32	Tag Reader Portable; Qty: 02 Nos.	
33	500 Va Apc Ups	
34	UV-Visible Spectrophotometer (Thermo Fisher Scientific)	Fish Genetics Laboratory 2
35	Vertical Deep Freezer, Cap 650 Ltrs (HMG)	Fish Genetics Laboratory 2
36	Swift Maxi Cycler (Esco Thermal Cycler/ PCR Machine) (ESCO)	FGB Lab 1
37	30 Lts Upright Solid Door -20 Freezer (Siemens)	Fish Genetics Laboratory 2
38	RO Water Purifier	Old campus wet lab
39	Vertical Dual Maxi Gel System	
40	P-97 Micropipetted Puller	Fish Genetics Laboratory 2
41	Stereo Zoom Trinocular Microscope	Fish Genetics Laboratory 2
44	Conventional PCR Machine, (Bio-Rad)	Fish Genetics Laboratory 2
45	Veriti 96 W Thermal Cycler 0.2 Ml PCR, (Invitrogen)	Fish Genetics Laboratory 2
46	Shimadzu Electronic Analytical	Fish Genetics Laboratory 2
47	Eppendorf Refrigerated Centrifuge	FGB Lab 1
48	Godrej Double Door Refrigerator	FGB Lab 1
49	BOD Incubator & Voltage Stabilizer For BOD Incubator (Remi)	Fish Genetics Laboratory 2
50	Minus 80 Deep Freezer (Haier)	FGB Lab 3
51	Speed Vaccum Concentrator (Labconco Corporation)	Fish Genetics Laboratory 2
52	Shimadzu Electronic Analytical Balance (Shimadzu)	Fish Genetics Laboratory 2
53	High Speed Refrigerated Table Top Centrifuge (Thermo Fisher Scientific)	Fish Genetics Laboratory 2
54	Celfrost	Animal house, CIFE
55	Godrej Refrigerator	Animal house, CIFE
56	Deep Freezer	Animal house, CIFE
57	Iceflaker Machine	Fish Genetics Laboratory 2

58	-20 Degree Freezer, Vertical Type (Vest Frost)	Fish Genetics Laboratory 2
59	Microcentrifuge (Spinwin); Vortex Mixer; Magnetic Stirrer With Hot Plate; LG Microwave; Whirlpool Refrigerator 310 Ltrs	Fish Genetics Laboratory 2
60	Light Cycler 48011	Fish Genetics Laboratory 2
61	Veriti Fast 96 Well Thermal Cycler 0.1 Ml (Invitrogen)	Fish Genetics Laboratory 2
62	Horizontal Gel Electrophoresis Apparatus	Fish Genetics Laboratory 2
63	-86 Degree Ultra Freezer	Fish Genetics Laboratory 2
64	Blue Star Deep Freezer	Fish Genetics Laboratory 2
65	Gradient PCR Machine	FGB Lab 1
66	Optima Max XP Ultracentrifuge	Fish Genetics Laboratory 2
67	Horiba Nano Particle Size Analyzer	FGB Lab 1
68	Water Purification System (Millipore- Merck)	Fish Genetics Laboratory 2
69	Single Phase Servo Controlled Voltage Stabilizer	Fish Genetics Laboratory 2
70	Tissue Ruptor; Stainless Steel Probes	Fish Genetics Laboratory 2
71	LMPH10 Digital PH Meter,	FGB Lab 3
72	-20 Degree Freezer, Vertical Type, 2 Nos.	FGB Lab 1 &2
73	Transilluminator	FGB Lab 3
74	Samsung Refrigerator, 2 Nos.	FGB Lab 1 & 2
75	LG Microwave	FGB Lab 3
76	Low Speed Spin Down Centrifuge, 4 Nos.	FGB Lab 3
77	Micropipettes, 4 Sets of 4 Pipettes	
78	Vertical Dual Maxi Gel System	FGB Lab 1
79	Neolab Heating Block	FGB Lab 2
80	Vortex Mixer 2 Nos.	FGB Lab 2&3
81	Table Top Centrifuge, 1040 SPINWIN-TM Micro Centrifuge (Tarsons)	FGB Lab 2
82	PCR Thermal Cycler Dice Mini (DSS Takara)	FGB Lab 2
83	Refrigerated Circulating Water Bath (Labotech)	FGB Lab 2
84	Refrigerator Double Door 255 Litre (LG)	FGB Lab 1
85	Electrophoretic Apparatus:	FGB Lab 2
86	Electrophoresis Apparatus	FGB Lab 2
87	Biosafety Cabinet Class II	FGB Lab 2
88	Bod Incubator (Labtro)	Cell Culture Lab
89	Water Purification System (Bio-Age & Services)	FGB Lab 1
90	Deep Freezer (Minus 20 ^{0}C), Elanpro	FGB Lab 2
91	Nano Photometer	FGB Lab 2

7. Fish Nutrition, Biochemistry and Physiology Division

List of Equipments in Fish Nutrition, Biochemistry and Physiology Division

S.No	Name of the Equipment	Location
1.	Pulverizer	Feed technology Laboratory
2.	Automatic Pelletizer	Feed technology Laboratory
3.	Mechanical Pelletizer	Feed technology Laboratory
4.	Manual Pelletizer	Feed technology Laboratory
5.	Spheronizer	Feed technology Laboratory
6.	Spray Dryer	Feed technology Laboratory
7.	Hot Air Oven	Feed technology Laboratory
8.	Muffle Furnace	Feed technology Laboratory
9.	Autoclave	Feed technology Laboratory
10.	Microkjeldahl Digestion Unit	Feed technology Laboratory
11.	Microkjeldahl Distillation Unit (2 No)	Feed technology Laboratory
12.	Microkjeldahl Titration Unit (2 No)	Feed technology Laboratory
13.	Soxhlet Apparatus	Feed technology Laboratory
14.	Weighing Balance	Feed technology Laboratory
15.	Bomb Calorimeter	Feed technology Laboratory
16.	Proximate Analysis Laboratory 2 (Room No 103 No)	Feed technology Laboratory
17.	Fibrotron Fibre Analyser	Feed technology Laboratory
18.	Soxtec Fat Analyser Apparatus	Feed technology Laboratory
19.	Hot Air Oven	Feed technology Laboratory
20.	Microkjeldahl Digestion Unit	Feed technology Laboratory
21.	Sand Bath	Feed technology Laboratory
22.	Deep Freezers (3 No)	Feed technology Laboratory

S.No.	Name of the Equipment	Location
1.	Rotary Evaporator	Biochemistry laboratory
2.	Distillation System (2 No)	Biochemistry laboratory
3.	Laminar Flow Chamber	Biochemistry laboratory
4.	Sonicator	Biochemistry laboratory
5.	Cooling Centrifuge (2 No)	Biochemistry laboratory
6.	Shaking Incubator	Biochemistry laboratory
7.	ELISA Plate Shaker	Biochemistry laboratory
8.	Water Bath (3 No)	Biochemistry laboratory
9.	Weighing Balances (2 No)	Biochemistry laboratory
10.	Ice Flaker	Biochemistry laboratory
11.	Vaccum Dryer For Glass Apparatus	Biochemistry laboratory
12.	Fridge	Biochemistry laboratory

13.	Molecular Biology Laboratory (Room No. 112 No)	Biochemistry laboratory
14.	Micro-Centrifuge	Biochemistry laboratory
15.	Gel Electrophoresis System	Biochemistry laboratory
16.	Multiplate Stirrer	Biochemistry laboratory
17.	Multi-Magnetic Stirrer	Biochemistry laboratory
18.	UV-Trans Illuminator	Biochemistry laboratory
19.	Thermocycler	Biochemistry laboratory
20.	Realtime PCR	Biochemistry laboratory
21.	ELISA Reader	Biochemistry laboratory
22.	Osmometer	Biochemistry laboratory
23.	pH Meter	Biochemistry laboratory
24.	BOD Incubator	Biochemistry laboratory
25.	Spectrophotometer	Biochemistry laboratory
26.	Laminar Flow Chamber	Biochemistry laboratory
27.	Microwave Oven	Biochemistry laboratory
28.	HPLC Laboratory (Room No. 113 No)	Biochemistry laboratory
29.	HPLC Apparatus And Detection Unit	Biochemistry laboratory
30.	Physiology Laboratory (Room No 118)	Biochemistry laboratory
31.	Blood Electrolyte Analyser	Biochemistry laboratory
32.	Amino Acid Analyser	Biochemistry laboratory
33.	Blue Light Illuminator	Biochemistry laboratory
34.	pH Meter	Biochemistry laboratory
35.	Weighing Balances	Biochemistry laboratory
36.	Dry Bath	Biochemistry laboratory
37.	Light Microscope	Biochemistry laboratory
38.	Stirrer Cum Hot Plate	Biochemistry laboratory
39.	Deep Freezer	Biochemistry laboratory

6.5.6.2. Research Contingency

CIFE is providing a contingency amount of Rs. 6,000/- per annum for PG Students and Rs.10,000/- for PhD scholars. Additionally, an amount of Rs. 10,00,000/- is earmarked to each division towards the research contingency.

6.5.7. Outcome/Output

6.5.7.1. Student Performance in National Examinations

	2016	2017	2018	2019	2020
ICAR JRF /SRF	9	--	--	--	12
UGC JRF / DST inspire	1	1	--	1	1
NET	80	82	90	90	90
ARS	7	10	0	4	--

* Remaining students opted for higher studies

6.5.7.2. Students Placement Profile

Job	2020	2019	2018	2017	2016	2015
ARS		4	0	10	7	8
Assistant Professor	3	16	20	11	6	3
Department of Fisheries, GoI	1	1	4	2	2	3
State Fisheries Department	15	20	27	20	12	8
RA/SRF	7	8	9	7	6	8
Private Sector	5	3	4	5	7	6
Higher studies (abroad)	4	5	6	5	4	5
Banking sector	2		2	5	2	2
Total	**37**	**57**	**72**	**65**	**46**	**43**

6.5.7.3. Awards/Recognitions/Certificates

Students Awards

Name of the student	Award		Conferred by	Date
Mr. Sudhan C. FRM-Ph.D. 2018-21	Best Presentation Award	Oral presentation	Satyabhama Institute,Chennai National Workshop on the Awareness of Marine Plastic Debris in Indian Seas (Pollution and Solution)-WAMP 2020	22-23 January, 2020
Mr. Tapas Paul AEM-Ph.D. 2019-22	Best Master's Thesis Award-2020	Best Thesis M.F.Sc.	3 International Symposium on Genomics in Aquaculture (ISGA-III), ICAR-CIFA, Bhubaneswar	23 January, 2020
Mr. Sudhan C. FRM-Ph.D. 2018-21	Second Best Poster Award	Poster presentation	Biodiversity of Gorai Creek, United Way of Mumbai, Wetland Day 2020	02 February, 2020
Mr. Sudhan C. FRM- Ph.D.	Consolation Prize	Article writing	Amrita Vishwa Vidyapeeth-National Article Writing	25 October 2020

ICAR-CIFE Endowment awards announced on 31st October, 2020

1. Dr. D.R. Jalihal Award Gold Medal

S. No.	Year	Name of the Awardee
1.	2018	Mr. Rahul Krishnan
2.	2019	Ms. Kasturi Chattopadhyay
3.	2020	Mr. Kuntal Krishna Bera

2. Dr. C.V. Kulkarni Best M.F.Sc. Student Research Award

S. No.	Year	Name of the Awardee
1.	2017	Mr. Vignaesh. D
2.	2019	Mr. Tapas Paul
3.	2020	Ms. Abhilipsa Biswal

3. Smt. Nirmala C. Kulkarni Best Girl Student Research Award

S. No.	Year	Name of the Awardee
1.	2017	Ms. Sahna Don
2.	2019	Ms. Ritty Maria Thomas
3.	2020	Ms. Suchismita Prusty

4. Dr. C.V. Kulkarni Best Ph.D. Student Research Award

S. No.	Year	Name of the Awardee
1.	2018	Dr. Anutosh Paria
2.	2019	Dr. Neha Wajahat Qureshi
3.	2020	Dr. Parvathy Unnikrishnan

5. Prof. KH Alikunhi Gold Medal for Best Ph.D. Thesis

S. No.	Year	Name of the Awardee
1.	2018	Dr. Amit Ranjan
2.	2019	Dr. Kithulampitiya Koralege Tharaka Nuwansi
3.	2020	Dr. Somu Sunder Lingam R

6. Dr. C.V. Kulkarni Best Young Scientist Award

S. No.	Year	Name of the Awardee
1.	2017	Dr. Martin Xavier K.A.
2.	2018	Dr. Janmejay Parhi
3.	2020	Dr. Saurav Kumar

7. Dr. Hiralal Chaudhuri Best Young Scientist Award

S. No.	Year	Name of the Awardee
1.	2017	Dr. Shivendra Kumar
2.	2018	Dr. Neeraj Kumar
3.	2020	Dr. Kundan Kumar

8. Dr. Hiralal Chaudhuri Best Fish Farmer Award

S. No.	Year	Name of the Awardee
1.	2020	Mr. Chetan Jawahir Parmar

9. Dr. C.V. Kulkarni International Travel Award

S. No.	Year	Name of the Awardee
1.	2019	Mr. Tapas Paul
2.	2020	Ms. Abhilipsa Biswal

10. Prof. Ravindranath Krothapalli International Travel Award

S. No.	Year	Name of the Awardee
1.	2018	Dr. Sandesh V. Patil
2.	2019	Dr. Somu Sunder Lingam R

6.5.7.4. Employability

The in-depth knowledge on basic and applied science of fisheries science helped our students to address the field related problem with a scientific approach. Most of the students were employed in state agricultural universities and scientists in ICAR.

Students are given ample opportunities to attend several national and international conference, symposia, seminars and training programmes. This exposure helped them immensely to gain the confidence in presenting their research results to the scientific community as well as to face interviews.

The students also undergo one-month training in their chosen field in another reputed lab. This helps them to enhance their knowledge. Students also have to present their assignment and credit seminar which gives them the confidence & increases their presentation skills. M.F.Sc students have to publish minimum one research paper and Ph.D. Students have to publish minimum two research papers to be eligible to receive the degree. This helps them to develop their writing, thinking, research capability and problem solving skills.

Students are exposed to various competitive platforms in the area of science, art, culture and sports for holistic development. The students also benefit from the skill development programmes conducted by the institute which helps them in securing employment in private sector. The personality development programmes conducted by the institute have helped students to develop their self-confidence and have motivated them to meet higher goals and some of the students are pursuing higher studies abroad.

Overall extra efforts are taken by the institute to mentor and nurture the students in a holistic manner, so that they are well equipped to secure employment or start their own business and not only empower themselves but also contribute to the economy as well as the community as a whole.

6.5.9. Certificate (Applicable when SSR is submitted for Programmes & College).

I, the Dean **Dr. N. P. Sahu** hereby certify that the information contained in Sections 6.4 and Section 6.5.1 to 6.5.7.4 are furnished as per the records available in the college and degree awarding university.

20/12/22

Signature of Dean of the college with Date & Seal

List of Equipments

Sr. No.	Equipment	Location
1	2 MLH Magnetic Stirrer With Hot Plate	Fish Genetics Laboratory 2
2	-20 Degree Freezer, Vertical Type (Vest Frost)	Fish Genetics Laboratory 2
3	-20 Degree Freezer, Vertical Type, 2 Nos.	FGB Lab 1 &2
4	2D Electrophoresis Unit	Quality Control
5	30 Lts Upright Solid Door -20 Freezer (Siemens)	Fish Genetics Laboratory 2
6	500 Va Apc Ups	
7	-80o Deep Freezer	Microbiology Lab
8	-86 Degree Ultra Freezer	Fish Genetics Laboratory 2
9	Amino Acid Analyser	Biochemistry laboratory
10	Anaerobic Work Station	Microbiology
11	Analytical Balance	Soil & Water lab
12	Autoclave	General Pathology
13	Autoclave	Feed technology Laboratory
14	Autoclave (Horizontal)	Microbiology
15	Autoclave (Vertical)	Processing
16	Autoflow IR-Water Jacketed CO2 Incubator	Virology
17	Automatic Balance	Soil & water
18	Automatic Microbial Identification System (Vitek)	Instrumentation Lab
19	Automatic Microkjeldahl	Chemistry Lab
20	Automatic Pelletizer	Feed technology Laboratory
21	Automatic Tissue Processor	General Pathology
22	Balance	soil & water
23	Basket centrifuge	Processing
24	Battering and Breading Machine	Processing
25	Bench Photometer with Dot Matrix LCD	Biology lab
26	Biomass Burn Furnace	Instrumentation room
27	Biophotometer (Eppendorf)	Fish Genetics Laboratory 2
28	Biosafety Cabinet	General Pathology
29	Biosafety Cabinet	Molecular lab
30	Biosafety Cabinet Class II	FGB Lab 2
31	Biosafety Cabinets (2)	Microbiology, Virology
32	Blood Electrolyte Analyser	Biochemistry laboratory
33	Blue Light Illuminator	Biochemistry laboratory
34	Blue Star Deep Freezer	Fish Genetics Laboratory 2
35	BOD Incubator	Instrumentation Lab
36	BOD Incubator	Biochemistry laboratory
37	BOD Incubator & Voltage Stabilizer For BOD Incubator (Remi)	Fish Genetics Laboratory 2
38	BOD Incubator (300lt)	General Pathology
39	BOD Incubator (650lt)	Microbiology lab
40	Bod Incubator (Labtro)	Cell Culture Lab

41	BOD Incubator(CC)	Cell Culture lab
42	Bomb Calorimeter	Feed technology Laboratory
43	BSL II Laminar Flow	Microbiology
44	Canon Digicam	Biology Lab
45	Celfrost	Animal house, CIFE
46	Centrifuge	Microbiology lab
47	Centrifuge (Cooling)	Biology lab
48	Centrifuge(CC)	General Pathology
49	CHNS-O Analyser	Instrumentation Lab
50	CM-12 Cooling Microfuge Machine	Fish Genetics Laboratory 2
51	Co2 Cylinder	Cell Culture lab
52	Co2 Incubator	Cell Culture lab
53	Compound Light Microscope (2)	Virology
54	Control Dynamic pH Meter	Fish Genetics Laboratory 2
55	Conventional PCR Machine, (Bio-Rad)	Fish Genetics Laboratory 2
56	Cooling Centrifuge (2 No)	Biochemistry laboratory
57	Cryoscopic Osmometer	Cell Culture lab
58	Deboner	Processing
59	Deep Freezer	biology lab
60	Deep Freezer	Biology lab
61	Deep Freezer	Biochemistry laboratory
62	Deep Freezer	Animal house, CIFE
63	Deep Freezer (Minus 20 0C), Elanpro	FGB Lab 2
64	Deep Freezer -14 to -23 0C	Sample Storage room
65	Deep Freezer -20 Degree (2 Nos)	Sample storage room
66	Deep Freezer -80 Degree	General Pathology
67	Deep Freezer -80oc	General Pathology
68	Deep Freezer -85oc	Sample storage room
69	Deep Freezer Horizontal	Taxonomy Lab
70	Deep Freezers (3 No)	Feed technology Laboratory
71	DGGE (Denaturing Gradient Gel Electrophoresis)	Microbiology Lab
72	Digital Autoclave	Biology lab
73	Digital Autoclave	Taxonomy Lab
74	Digital Flame Photometer with Dual Channel (N & M)	Chemistry Lab
75	Digital Flocculator (Jar Test Apparatus)	Soil & Water lab
76	Digital Hot Air Oven	Taxonomy Lab
77	Digital Hotplate	General Pathology
78	Digital Inverted Microscope	Cell Culture lab
79	Digital Inverted Microscope	Cell Culture lab
80	Distillation System (2 No)	Biochemistry laboratory
81	DNA Vacuum Concentrator	General Pathology
82	DO Meter Pen Digital	Soil & water
83	Double Beam UV-VIS Spectrophotometer	Algal room
84	Dry Bath	General Pathology

85	Dry Bath	Biochemistry laboratory
86	Electronic Automatic Microprocessor	Soil & Water lab
87	Electronic Balance	Soil & Water lab
88	Electronic Balance	Taxonomy Lab
89	Electronic Balance	Microbiology lab
90	Electrophoresis Apparatus	FGB Lab 2
91	Electrophoresis Unit	General Pathology
92	Electrophoretic Apparatus:	FGB Lab 2
93	ELISA Plate Shaker	Biochemistry laboratory
94	ELISA Plate Washer	Molecular lab
95	ELISA Reader	Biochemistry laboratory
96	Eppendorf Refrigerated Centrifuge	FGB Lab 1
97	Fibrotron Fibre Analyser	Feed technology Laboratory
98	Flame Photometer	Biology Lab
99	Flame Photometer	Microbiology Lab
100	Fluorescent Automated Cell Sorter	NAHEP lab
101	Fluorescent Microscope	Virology
102	Fridge	Biochemistry laboratory
103	Fume Hood	General Pathology
104	Garmin GPS	Biology Lab
105	Gas Chromatography (GC)	Gas Chromatography Room
106	GC-MS	Instrumentation
107	Gel Doc	Biology lab
108	Gel Documentation System	Taxonomy Lab
109	Gel Documentation Unit	Quality Control
110	Gel Electrophoresis Horizontal	Microbiology Lab
111	Gel Electrophoresis System	Biochemistry laboratory
112	Gel Electrophoresis Unit for Comet Assay	Microbiology lab
113	Godrej Double Door Refrigerator	FGB Lab 1
114	Godrej Refrigerator	Taxonomy Lab
115	Godrej Refrigerator	Animal house, CIFE
116	GPS	Biology Lab
117	GPS	Algal Room
118	Grab (Sediment)	Biology Lab
119	Gradient PCR machine	Molecular lab
120	Gradient PCR Machine	FGB Lab 1
121	High Speed Refrigerated Table Top Centrifuge (Thermo Fisher Scientific)	Fish Genetics Laboratory 2
122	Histoembedder	General Pathology
123	Horiba Nano Particle Size Analyzer	FGB Lab 1
124	Horizontal Freezer(Chest Freezer)	Sample storage room
125	Horizontal Gel Apparatus	Fish Genetics Laboratory 2
126	Horizontal Gel Electrophoresis Apparatus	Fish Genetics Laboratory 2
127	Hot Air Oven	General Pathology
128	Hot Air Oven	Feed technology Laboratory

129	Hot Air Oven	Feed technology Laboratory
130	Hot Plate	Taxonomy Lab
131	HPLC	Quality Control
132	HPLC Apparatus And Detection Unit	Biochemistry laboratory
133	HPLC Laboratory (Room No. 113 No)	Biochemistry laboratory
134	Hybridization Oven	Quality Control
135	Hybrilinker (UVP)	Fish Genetics Laboratory 2
136	Ice Flaker	Biochemistry laboratory
137	Iceflaker Machine	Fish Genetics Laboratory 2
138	Inverted Microscope	Virology
139	Kenstar Microwave (Kenstar)	Fish Genetics Laboratory 2
140	Laminar Flow	Taxonomy Lab
141	Laminar Flow	General Pathology
142	Laminar Flow Chamber	Biochemistry laboratory
143	Laminar Flow Chamber	Biochemistry laboratory
144	LG Microwave	FGB Lab 3
145	LG Refrigerator	
146	Light Cycler 48011	Fish Genetics Laboratory 2
147	Light Microscope	Biochemistry laboratory
148	LMPH10 Digital PH Meter,	FGB Lab 3
149	Low Speed Spin Down Centrifuge, 4 Nos.	FGB Lab 3
150	Lyophilizer (Freeze Drier)	Instrumentation Lab
151	Magnetic Stirrer	Algal Room
152	Manual Pelletizer	Feed technology Laboratory
153	Mechanical Pelletizer	Feed technology Laboratory
154	Micro Wave Oven	Biology lab
155	Microarray Scanner	Molecular lab
156	Microcentrifuge	Microbiology lab
157	Micro-Centrifuge	Biochemistry laboratory
158	Microcentrifuge (Spinwin); Vortex Mixer; Magnetic Stirrer With Hot Plate; LG Microwave; Whirlpool Refrigerator 310 Ltrs	Fish Genetics Laboratory 2
159	Microfuge with Stepless Speed Control	FGB Lab 1
160	Microkjeldahl Digestion Unit	Feed technology Laboratory
161	Microkjeldahl Digestion Unit	Feed technology Laboratory
162	Microkjeldahl Distillation Unit (2 No)	Feed technology Laboratory
163	Microkjeldahl Titration Unit (2 No)	Feed technology Laboratory
164	Micromanipulator System	Molecular lab
165	Micropipettes, 4 Sets of 4 Pipettes	
166	Microprocessor Conductivity-TDS-Salinity Temperature Meter with Graphical Display (N and M)	Algal room
167	Microscope With Fluorescence & Phase, Stereozoom Microscope With Camera Port (Carl Ziess)	Cell Culture Lab
168	Microscope-Hund Wetzeler	FGB Lab 1
169	Microwave Oven	General Pathology

170	Microwave Oven	Biochemistry laboratory
171	Microwave Oven With Grill, 30 Ltrs (LG)	Fish Genetics Laboratory 2
172	Minus 80 Deep Freezer (Haier)	FGB Lab 3
173	Molecular Biology Laboratory (Room No. 112 No)	Biochemistry laboratory
174	Motic Binocular Microscope	Biology lab
175	Motic Binocular Microscope No.10	Biology lab
176	Motility Analyzer	FGB Lab 1
177	Muffle Furnace	Feed technology Laboratory
178	Multi Temperature Water Bath Circulator	Microbiology Lab
179	Multi-Magnetic Stirrer	Biochemistry laboratory
180	Multiplate Stirrer	Biochemistry laboratory
181	Nano Photometer	FGB Lab 2
182	Neolab Heating Block	FGB Lab 2
183	Nephalometer	Biology lab
184	Nikon SLR Camera	Biology Lab
185	Nitrogen Analyser	Students
186	Olympus Binocular Microscope Model	Fish Genetics Laboratory 2
187	Olympus Microscope	Fish Genetics Laboratory 1
188	Optima Max XP Ultracentrifuge	Fish Genetics Laboratory 2
189	Osmometer	Biochemistry laboratory
190	P-97 Micropipetted Puller	Fish Genetics Laboratory 2
191	PCR Machine	Biology lab
192	PCR Machines (2)	Quality Control
193	PCR Thermal Cycler	Microbiology Lab
194	PCR Thermal Cycler Dice Mini (DSS Takara)	FGB Lab 2
195	pH Meter	Soil & Water lab
196	PH Meter	Taxonomy Lab
197	pH Meter	General Pathology
198	pH Meter	Algal Room
199	pH Meter	Biochemistry laboratory
200	pH Meter	Biochemistry laboratory
201	Ph Meter Digital	Soil & water
202	pH Meter Microprocessor Based -2nos.	General Pathology
203	Phase Contrast Microscope	Molecular lab 2
204	Ph-Meter-Microcessor Based	Algal room
205	Physiology Laboratory (Room No 118)	Biochemistry laboratory
206	Plant Growth Chamber	Algal Room
207	Primer Software	Biology Lab
208	Programmable Freezer	FGB Lab 1
209	Proximate Analysis Laboratory 2 (Room No 103 No)	Feed technology Laboratory
210	Pulverizer	Feed technology Laboratory
211	Real Time PCR	
212	Realtime PCR	Biochemistry laboratory
213	Refrigerated Centrifuge	Microbiology Lab

214	Refrigerated Centrifuge	Algal room
215	Refrigerated Centrifuge (2)	Quality Control
216	Refrigerated Circulating Water Bath (Labotech)	FGB Lab 2
217	Refrigerator	Molecular lab
218	Refrigerator	Sample Storage room
219	Refrigerator (400L) 2 Nos	Microbiology lab
220	Refrigerator (430 L)	Cell Culture lab
221	Refrigerator Double Door (710 L)	General Pathology
222	Refrigerator Double Door 255 Litre (LG)	FGB Lab 1
223	Refrigerator, 340 Ltrs	Fish Genetics Laboratory 2
224	Remi Clinical Centrifuge	Fish Genetics Laboratory 2
225	Remi Cyclomixer (M10)	Fish Genetics Laboratory 2
226	Rheometer	Quality Control
227	RO Water Purifier	Old campus wet lab
228	Rocking Platform	General Pathology
229	Rocking Platform	Fish Genetics Laboratory 2
230	Rotary Evaporator	Instrumentation Lab
231	Rotary Evaporator	Biochemistry laboratory
232	Rotary Microtome	Biology Lab
233	Rotary Microtome	Biology lab
234	Rotary Microtome	General Pathology
235	RSB-12 Water Bath Shaker	Fish Genetics Laboratory 2
236	Samsung Refrigerator, 2 Nos.	FGB Lab 1 & 2
237	Sand Bath	Feed technology Laboratory
238	Sanya Cool Incubator	Cell Culture lab
239	Semi Microbalance and Optional Accessories Printer	Soil & Water lab
240	Semi-Dry Blotting Apparatus	General Pathology
241	Shaking Incubator	Biochemistry laboratory
242	Shaking Water Bath	General Pathology
243	Shimadzu Electronic Analytical	Fish Genetics Laboratory 2
244	Shimadzu Electronic Analytical Balance (Shimadzu)	Fish Genetics Laboratory 2
245	Single Phase Servo Controlled Voltage Stabilizer	Fish Genetics Laboratory 2
246	SLR Camera	Biology Lab
247	Sonicator	Biochemistry laboratory
248	Sony Cyber Shot	Biology Lab
249	Soxhlet Apparatus	Biochemistry
250	Soxhlet Apparatus	Feed technology Laboratory
251	Soxtec Fat Analyser Apparatus	Feed technology Laboratory
252	Spectrophotometer	Taxonomy Lab
253	Spectrophotometer	Biochemistry laboratory
254	Speed Vaccum Concentrator (Labconco Corporation)	Fish Genetics Laboratory 2
255	Spheronizer	Feed technology Laboratory
256	Spray Dryer	Feed technology Laboratory
257	Stabilizer 10KVA	FGB Lab 1

258	Stabilizer 10KVA	FGB Lab 1
259	Stereo Zoom Microscope	Cell Culture lab
260	Stereo Zoom Trinocular Microscope	Fish Genetics Laboratory 2
261	Stirrer Cum Hot Plate	Biochemistry laboratory
262	Student Microscope (3nos)	General Pathology
263	Swift Maxi Cycler (ESCO Thermal Cycler/ PCR Machine) (ESCO)	FGB Lab 1
264	Table Top Centrifuge, 1040 SPINWIN-TM Micro Centrifuge (Tarsons)	FGB Lab 2
265	Table Top Orbital Shaker	Microbiology Lab
266	Table Top Refrigerated Centrifuge	Molecular lab
267	Table Top Shaker	Microbiology lab
268	Table Top Shaker	General Pathology
269	Tag Reader Portable; Qty: 02 Nos.	
270	Texture Analyser	Instrumentation
271	Thermal Cycler	Molecular lab
272	Thermo Cycler	Molecular lab
273	Thermocycler	Taxonomy Lab
274	Thermocycler	Biochemistry laboratory
275	Thermostatically Controlled Water Bath	Fish Genetics Laboratory 2
276	Tissue Homegeniser	Molecular lab
277	Tissue Homogenizer	Biology lab
278	Tissue Ruptor; Stainless Steel Probes	Fish Genetics Laboratory 2
279	Transilluminator	FGB Lab 3
280	Transmission Electron Microscope	TEM Lab
281	Trinocular Microscope	Cell Culture lab
282	Trinocular Microscope	Instrumentation Lab
283	Trinocular Research Microscope	TEM Lab
284	Turbidity Analyser	Soil & Water lab
285	Ultra Centrifuge	General Pathology
286	Ultra Microtome	TEM Lab
287	Ultrasonic Cleaner Capacity 18 Litres	Fish Genetics Laboratory 2
288	Ultrasonic Processor–Sonicator	General Pathology
289	UV-Trans Illuminator	Biochemistry laboratory
290	UV-VIS Spectrophotometer	Algal room
291	Uv-Visible Spectrophotometer	Soil & Water lab
292	UV-Visible Spectrophotometer (Thermo Fisher Scientific)	Fish Genetics Laboratory 2
293	Vaccum Dryer For Glass Apparatus	Biochemistry laboratory
294	Vacuum Cleaner	TEM Lab
295	Veriti 96 W Thermal Cycler 0.2 Ml PCR, (Invitrogen)	Fish Genetics Laboratory 2
296	Veriti Fast 96 Well Thermal Cycler 0.1 Ml (Invitrogen)	Fish Genetics Laboratory 2
297	Vertical Autoclave	Fish Genetics Laboratory 2
298	Vertical Deep Freezer	Algal room Algal Room
299	Vertical Deep Freezer, Cap 650 Ltrs (HMG)	Fish Genetics Laboratory 2

300	Vertical Dual Maxi Gel System	
301	Vertical Dual Maxi Gel System	FGB Lab 1
302	Vertical Electrophoresis System with Gradient Former and Power Pack	General Pathology
303	Vertical Gel Electrophoresis Apparatus	Fish Genetics Laboratory 2
304	Vertical Gel Electrophoresis Apparatus	Fish Genetics Laboratory 2
305	Vertical Gel Electrophoresis Unit, Horizontal Electrophoresis Unit	Fish Genetics Laboratory 2
306	Vertical Laminar Airflow	Fish Genetics Laboratory 2
307	Vest Frost Upright Freezer	Taxonomy Lab
308	Vortex Mixer	Biology lab
309	Vortex Mixer	General Pathology
310	Vortex Mixer 2 Nos.	FGB Lab 2&3
311	Water Bath (3 No)	Biochemistry laboratory
312	Water Bath (6 Hole)	Soil & water
313	Water Environmental Analyser	Biology Lab
314	Water Purification System	Taxonomy Lab
315	Water Purification System	Microbiology lab
316	Water Purification System (Bio-Age & Services)	FGB Lab 1
317	Water Purification System (Millipore- Merck)	Fish Genetics Laboratory 2
318	Waterbath Shaker (CC)	Microbiology lab
319	Weighing Balance	Microbiology Lab
320	Weighing Balance	Feed technology Laboratory
321	Weighing Balance	General Pathology
322	Weighing Balances	Biochemistry laboratory
323	Weighing Balances (2 No)	Biochemistry laboratory
324	Wireless Communication GPS Receiver	Biology Lab

ICAR-Central Institute of Fisheries Education
(University under Sec.3 of UGC Act 1956)
Indian Council of Agricultural Research
Panch Marg, Off Yari Road, Andheri (West), Mumbai - 400061, India

Self-Study Report of Agricultural University

ICAR-Central Institute of Fisheries Education

(University under Sec.3 of UGC Act 1956)
Indian Council of Agricultural Research
Panch Marg, Off Yari Road, Andheri (West), Mumbai - 400061, India

6.6. Self-Study Report of Agricultural University

6.6.1. University Governance

6.6.1.1. Vision, Mission and Goals

Vision: To become a globally recognized knowledge and innovation centre of fisheries and allied disciplines for providing leadership in fisheries education and research.

Mission: To achieve academic and research excellence in order to prepare the sector to successfully respond to local, regional and global challenges.

Goals

- Developing highly flexible and new academic programmes including sandwich programme with overseas universities.
- Evolving each specialized disciplines into full-fledged schools or centres of excellence.
- Developing strategic partnerships.
- Introduction of distance education.
- Special initiatives to attract and retain youth in fisheries.
- National and regional harmonisation of educational programmes.
- Developing model guidelines for establishing fisheries colleges and specialized programmes for capacity building.
- Development of globally competitive faculty.
- Looking beyond border: Opening of 'Off-shore Campuses' particularly in Asian and African nations

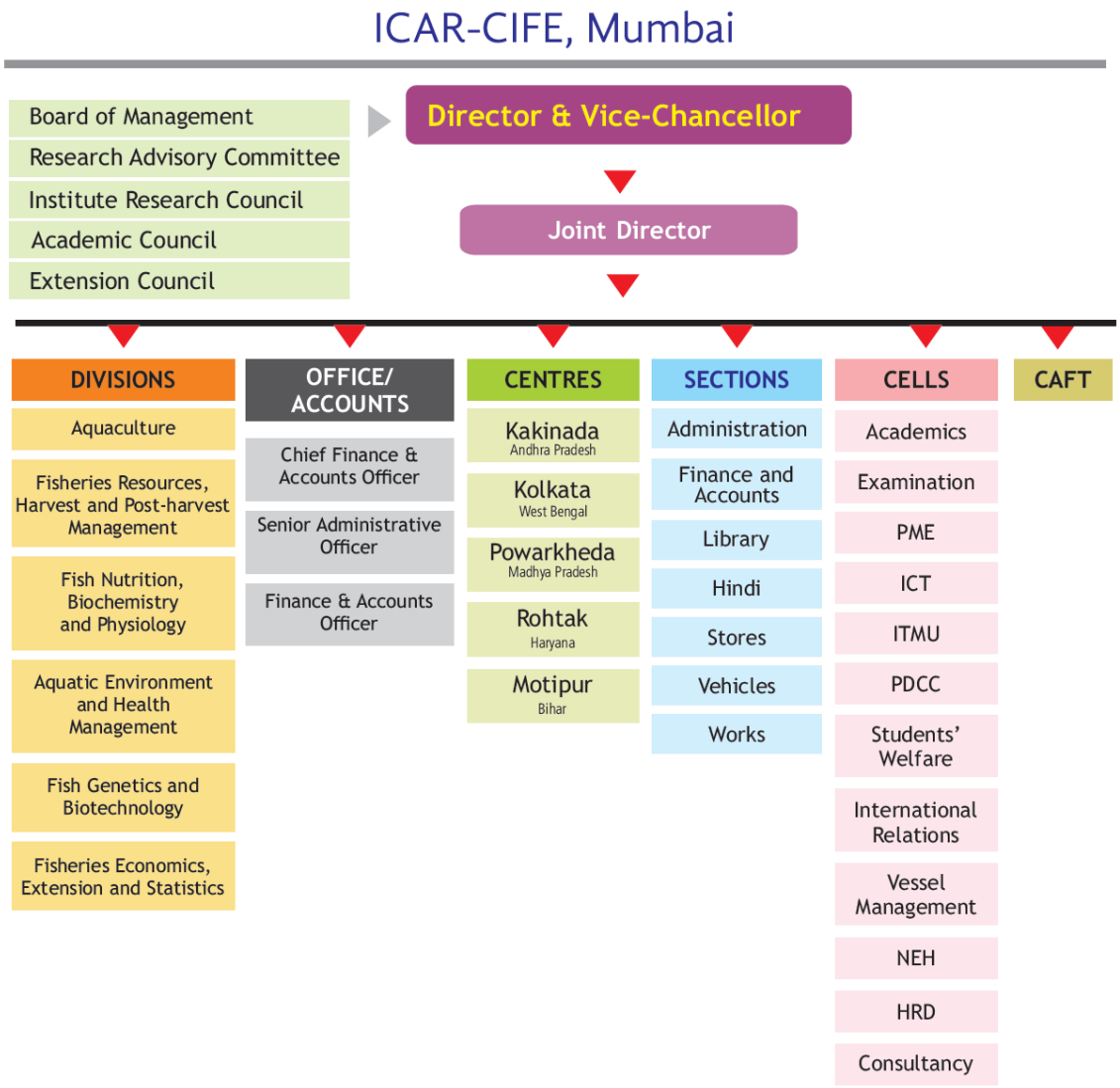


Figure. Organogram of the University

6.6.1.2. Statutes and Regulations

Being a Deemed-to-be University, CIFE is under the administrative control of ICAR and follows all the rules and regulations of the ICAR & UGC.

TO BE PUBLISHED IN THE GAZETTEE OF INDIA PART I SECTION 1

No.F.9-3/88-U.3
Government of India
Ministry of Human Resource Development
(Deptt. of Education)

New Delhi, the 27th March, 1989.

NOTIFICATION

In exercise of the powers conferred by Section 3 of the University Grants Commission Act, 1956 (3 of 1956), the Central Government, on the advice of the Commission, hereby declare that the Central Institute of Fisheries Education, Versova, Bombay, shall be deemed to be a university for the purpose of the aforesaid Act.

(J.D. Gupta)
Joint Secretary to the Govt. of India.

The Manager,
Gazette of India,
Government of India Press,
Faridabad(Haryana)

Copy forwarded for information to:-

1. The Secretary, University Grants Commission, New Delhi(with 15 copies).
2. The Director, Central Institute of Fisheries Education, Jaiprakash Road, Seven Unglows, Versova, Bombay-400061.
3. The Secretary, Indian Council of Agricultural Research, Krishi Anusandhan Bhavan, Dr.K.S.Krishnan Marg, Pusa, New Delhi-110012.
4. All Ministries/Deptt. of the Government of India(including the President's Secretariat, the Prime Minister's Office, the Cabinet Secretariat and Planning Commission).
5. All State Governments and Union Territories.
6. Registrars of all Universities and deemed to be universities.
7. Press Information Bureau(Shri P.S.Bhatnagar)D.PI.O., New Delhi.
8. Parliament Library.
9. Legislative Department(Leg. III Section).
10. Secretary General, Rajya Sabha.
11. Secretary General, Lok Sabha.
12. All Officers in the Ministry.
13. Guard File/Coordination Asstt./Notification File.

(Gurbax Singh)
Deputy to the Govt. of India

6.6.1.3. University Statutory officers and their selection process

Being a Deemed-to-be University, the terminology "Statutory Officer" is not applicable to ICAR-CIFE. However, the institute has officers with the assigned duties on par with the statutory officers of the University. The Director of the institute acts as Vice-Chancellor of the Deemed-to-be University. This post is recruited by the ICAR and the Director nominates the faculty for different posts of the Deemed-to-be University. The faculty delegates the duties as an additional charge along with their regular duties. Each division is led by Head of the Department (HOD), selected by ICAR. The HoD acts as Chairman, Board of Studies of the disciplines of the respective division. The list of officers and their assigned duties are as given below.

S. No.	Post Name	Faculty Name	Recruited by the ICAR for the Post of (Regular Post)
1.	Vice-Chancellor	Dr. Gopal Krishna	Director
2.	Dean (Academics)	Dr. N.P. Sahu	Joint Director
3.	Registrar	Mr. J. P. Davis	Senior Administrative Officer (till 30 April 2021)
		Dr. Ashuthosh Deo	Principal Scientist (from July 2021)
4.	Controller of Examination Associate Dean (Students Welfare)	Dr. Sanath Kumar	Principal Scientist
5.	Dean (External Affairs)	Dr. Aparna Chaudhari	Head of the Department, Fish Genetics and Biotechnology
6.	Dean (Students Welfare)	Dr. Swadesh Prakash	Principal Scientist
7.	Chief Finance & Accounts Officer	Mr. Prashant Sharma	Chief Finance & Accounts Officer
8.	Associate Dean (Academics)	Dr. Rama Sharma	Principal Scientist (Till 30 March 2021)
9.	Chief Warden	Dr. N.S. Nagpure	Principal Scientist
10.	Warden (Boys' Hostel)	Dr. Rupam Sharma	Principal Scientist
11.	Warden (Girls' Hostel)	Dr. Gayatri Tripathi	Principal Scientist
12.	Librarian	Mr. Subash Chandra	Technical Officer
13.	Chairman, Placement Cell	Dr. B.B. Nayak	HoD, Fish Resources, Harvest and Post-Harvest division
14.	Nodal Officer, SDAE; Nodal Officer, Agricultural Education	Dr. Megha Kadam Badekar	Principal Scientist

Deans, Registrar and Controller of Examination etc. are looking after by the faculty / Principal Scientists as additional charge along with their regular duties assigned by the Director of the Institute. These posts are not the sanctioned posts by the

Council and they are nominated by the Director/Vice-Chancellor, ICAR-CIFE, Mumbai.

6.6.1.4. Decentralization of power

The institute has a decentralized system in academics, administration and finance sections. Since it is a Deemed-to-be University, the posts were not 'Statutory', but the faculty have additional charges to delegate the duties of regular academic activities. The delegation of powers is given in Annexure 27.

6.6.1.5. Supporting Units

Maintenance Cell: ICAR-CIFE has a Maintenance Cell headed by the Chairman (works committee), assisted by Officer-In-Charge (works section) and a committee with 6-7 members. The maintenance cell has two sections namely Civil and Electrical to look after the maintenance of laboratories, academic buildings, administrative buildings, hostels and residential quarters. It also maintains the green campus and conserves electricity by promoting the use of LED lights and solar panels wherever possible. The unit maintains the cleanliness on campus and recycles the food waste by bio-composting. Recycling of plastic waste and hazardous chemicals are also done by taking the help of the municipal corporation. A separate Vehicle maintenance section is in place for regular maintenance of vehicles, college buses and to arrange transport for field trips, sample collection and farmers visits.

SC/ST Cell: ICAR-CIFE has a well-placed SCSP (Scheduled Caste Sub Plan) Cell and TSP (Tribal Sub Plan) Cell. The university also has a 'Gender Champion Club' to inculcate the culture of equality among the students. The Club promotes/facilitates equal participation of both genders in all activities of the university. The university has a 'Personality Development and Career Counselling Unit' (PDCCU) on campus to give career counselling and impart training on personality development to the students.

The SCSP Cell of the institute organizes/coordinates various programmes for the development/improvement of students and staff of the 'Scheduled Caste' category. The Cell also arranges awareness workshops/training programmes for the farmers of the Schedule Caste category. The list of the training programmes conducted by the SCSP cell is given below.

List of training programmes conducted under SCSP:

State	Name of the District	Activity	Duration
Kerala	Parakode	Training on aquaculture and aqua -feed	27-30 January, 2020
Jharkhand	Lawalaung Chatra	Demonstration of leaf meal-based farm made feed preparation and on-farm feeding management	23-25 January, 2020
West Bengal	Hingalganj, Sundarban,	Training on freshwater aquaculture	22-24 January 2020
West Bengal	Sandeshkhali II, North 24 PGS,	Training on integrated aquaculture	3 June, 2019
Andhra Pradesh	Intur village, Amruthalur Block, Guntur District	Training on basics in shrimp aquaculture	7 February 2020
West Bengal	Canning-I, South 24 PGS	Training on integrated aquaculture	31 May, 2019

The TSP cell of the institute organizes/coordinates various programmes for the social upliftment of the farmers of tribal community. The list of training programmes organized under TSP Cell are given below.

Training programmes organized during 2016-2020

State	Name of the district	Activity	No.	Bene-ficiaries	Brief Report
Year 2016-17					
Maharashtra	Pune (Dimbhe)	Training	1	50	Training on carp hatchery operation, carp seed rearing in cages and ornamental fish culture in cages and their marketing.
		Infrastructure development	32	30	32 old cages at Dimbhe reservoir were repaired.
		Demonstration	1	30	About 8000 Rohu fingerlings was stocked in cages. Feed and other inputs were provided for the table size fish culture in cages.
West Bengal	South 24 Parganas (Sundarban)	Training/capacity building	1	25	A short-term training programme was conducted on "*Adhunik Upaye Machher Chash*" during 9-11 Nov 2016
	Nadia (Haringhata block)	Training/ capacity building	1	25	A short-term training programme was conducted on "Modern Method of Fish

					Culture' during 19-23 December 2016 which emphasized Integrated Pig-cum-fish farming practices.
	Nadia (Haringhata block)	Front line demonstrations	1	25	50 piglets and inputs have been distributed to the farmers
Year 2017-2018					
Maharashtra	Ahmednagar (Warungshi Village)	Training/capacity building	1	48	One day orientation programme on "Ornamental Fish Culture for Tribal Women" at Warungshi village on 8 Augus,t 2017 for aquarium making
		Front line demonstrations	1	30	A training programme on "Basics of Ornamental Fish Keeping" during 29-31 January, 2018. A field visit also arranged along with training.
	Panvel	Training/capacity building	1	33	A training programme on "Livelihood Improvements Through Value Addition of Fisheries" at Morbe, Panvel, Maharashtra on 21 December, 2017
		Awareness camp/ Exhibitions/ Exposure visits	1	33	An Orientation Programme on "Code of Conduct for Responsible Fisheries (CCRF)" at Morbe, Panvel, Maharashtra on 21 December, 2017
	Nandurbar	Training programme	1	22	A two-day training programme on "Cage Culture" for the farmers of Nandurbar, Maharashtra during 18-20 January, 2018. The programme covered theory and practical aspects of cage culture. A field visit also arranged.
	Pune	Front line demonstration	1	20	On-going activity of cage culture of Rohu fingerlings up to table size at Dimbhe reservoir

West Bengal	South 24 Parganas, (Moukhali)	Training/capacity building	1	115	A training programme on “Modern Method of Fish Culture” on 16 November, 2017 for tribal fish farmers at Moukhali flood relief center for aqua feed making using local ingredients
	Taldi, Canning	Front line demonstrations	1	100	A training programme on “Modern methods of fish culture” on 27 January, 2018 for tribal fish farmers at Taldi, Canning, South 24 Parganas, West Bengal.
	Sundarban	Training/ capacity building	1	25	Training programme on Modern Method of Ornamental Fish Culture for tribal farm women of Sundarbans, West Bengal on March 24-26, 2018
Mizoram	Aizawl	Awareness-cum-hands-on Training	1	60	A two-day awareness programme was organized on “Farm Management Of Fish Feed and Feeding: Rightful Use of Chemicals and Drugs” at the state fisheries department headquarter, Aizawl, Mizoram during 19-20 January, 2018
Nagaland	Dimapur	Skill development training programme	1	26	A training programme on Modern techniques in aquaculture was organized during 8-9 March, 2018 The programme was conducted in collaboration with Department of Fisheries, Government of Nagaland, Kohima. The main objectives of the programme were to impart knowledge on pond preparation, water quality monitoring, feeding strategies and disease management for polyculture fish production systems.

Assam	Dibrugarh	Skill Development Programme	1	70	ICAR-CIFE, Mumbai in collaboration with Department of Fisheries, Govt of Assam and Jeeva-Suraksha, Sivasagar Assam (NGO) organised a two-day skill development programme on “Water And Soil Quality Management for Aquaculture Systems”
	Summary of training programmes organized	Training/capacity building	5	243	
		Front line demonstrations	3	150	
		Awareness camp/ Exhibitions/ Exposure visits	2	093	
		Other (SDP)	2	096	
		Total Beneficiaries	12	582	

Health Facility:

ICAR-CIFE has a primary health centre in the Boys hostel with basic emergency care facilities such as a stretcher, first aid box, oximeter, sphygmomanometer and glucometer etc. Two in-house doctors, Dr. Arun Kumar and Dr. Babita Goyal are available to the students and staff for any medical issue. Further, all students are insured with a group health insurance scheme.

6.6.1.6. Technology Support

The institute has dedicated 100Mbps internet connectivity from NKN and 50 Mbps backup connectivity with Firewall support from a private service provider. All the buildings, classrooms, and hostels have access to the internet through LAN or Wi-Fi. Access to the internet is secured and only the authentic users can use the internet through their credentials given by the IT Cell of the institute.

All classrooms are well-equipped with audio-visual aids and the institute has two smart classrooms for conducting online classes. The latest online learning tools are being used for conducting classes and meetings through licenced online meeting software like Zoom / CISCO Webex etc. The institute also has a Video conferencing facility to organize guest lectures of faculty from abroad.

The institute has a dedicated software/e-application ‘Academic Management System (AMS)’ to coordinate the academic activities such as registration of courses, schedule of classes, course approval by the faculty, sharing the class notes to the students and submission of marks to the examination cell. The enrolled students are provided with CIFE e-mail accounts and credentials to get access to the internet till

the completion of the course. The IT Cell of the institute provides technical help in resolving any hardware or software related issues.

Educational Technology cell is in place to facilitate technical support for academic activities

6.6.1.7. Institutional Data Base and Website Update

The institute has a database of programmes in partnering with other research institutions, universities and industries. Each division of the CIFE maintains a database on students, research projects and publications of their division. However, these databases are yet to be linked with the institutional website.

CIFE has a dedicated website with the URL: https://www.cife.edu.in. The domain name is with the SSL-OV (organization validity) security certificate. The sections of websites such as News, Events, Important Notice, Office orders etc. are updated regularly on a day-to-day basis based on the activities. The committee for updating the website is given in the Annexure 28.

6.6.1.8. Interdepartmental Linkages

This Deemed-to-be University maintains vibrant linkages with a wide range and large number of academic, research and government institutions to provide a fulfilling and holistic learning experience to the students, as well as to maintain the cutting-edge in research programs and extension activities. These natures of linkages are detailed below

1. Multi-Departmental (Divisional) Research Projects

The institute promotes collaboration among the various departments (Divisions) and Centers of ICAR-CIFE. Out of the total 25 institutional projects undertaken during this period, 17 are collaborations between 2 or 3 Divisions/ Centres, while 8 are collaborations between 4 to 7 Divisions/ Centres (Chart 2).

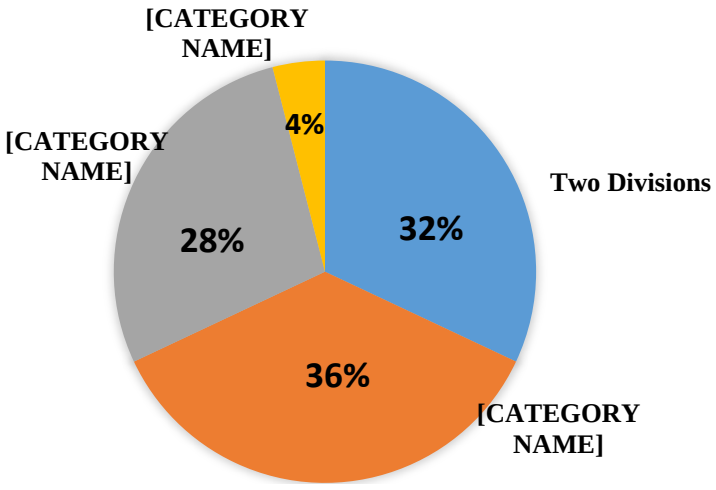


Chart 2. Inter-Divisional Collaboration in Institutional Projects, colour code

2. Collaborative Student Research

At present, about 150 Doctoral students of this Deemed-to-be University are carrying out research where ICAR-CIFE is collaborating with one or more institutions. While most collaborations are with other ICAR institutes/ SAUs/ CAUs, about 15% of the research is in collaboration with IITs/ CSIR/State Govt./ National and International Institutions (Chart 3).

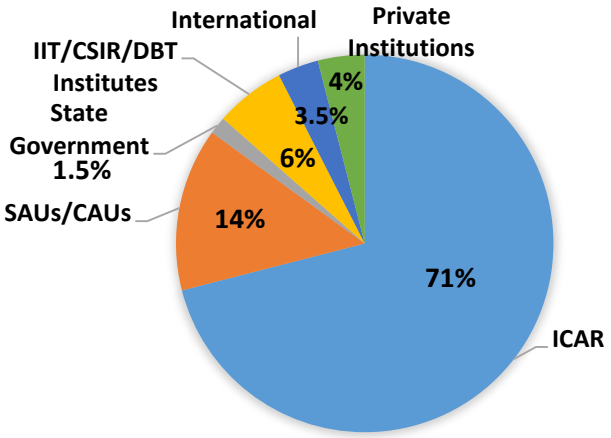


Chart 3. Collaborative Doctoral Research

In addition, about 60 M.F.Sc. students are carrying out research in collaboration with other institutions. In this case too, maximum collaboration is with other ICAR Institutes/ SAUs/ CAUs, while about 30% is with IITs/CSIR Institutes/State Govt./national and international institutions (Chart 4).

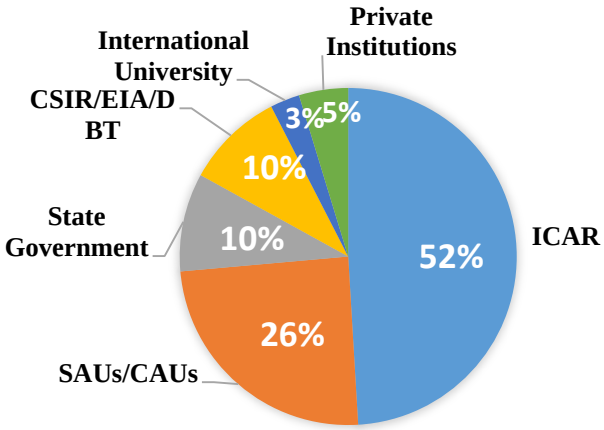


Chart 4. Collaborative Master's Research

6.6.1.9. Monitoring Mechanism

The Chairman, Board of Studies (BoS) of each discipline is authorized to review the examination papers and to assess the effectiveness of each course. Further, the students will submit the feedback of each course to the Chairman (BoS) for further improvement of the teaching methodology/course curriculum.

Syllabus revision is exercised every two years by an expert committee to upkeep with the recent advances.

6.6.1.10. Institute Quality Assurance Cell/PME Cell

The Priority setting, Monitoring and Evaluation (PME) Cell of ICAR-CIFE facilitates/coordinates the submission of concept notes/project proposals, evaluation of research proposals (both Institute-funded and externally-funded). The Cell also provides technical inputs for the development and improvement of various activities of the institute. All the project proposals are routed through PME Cell and the Cell evaluates all the proposals before they are submitted to IRC as well as to external funding agencies. PME Cell facilitates and monitors research publications, Intellectual property issues, plagiarism and scientific issues, preparation and timely submission of technical reports etc. PME Cell also facilitates the assessment process of scientists for their promotion.

The responsibilities of PME Cell are

a. To strengthen prioritization, monitoring, evaluation and impact assessment of the research education and extension programs of the institute.

b. To co-ordinate and facilitate the publications of books, bulletins, research papers, annual reports, etc.
c. Technical correspondence with ICAR, Central and State Government agencies.
d. To promote national and international linkages and extra-mural research
e. To suggest ways and means to enhance the quality of publications, develop & commercialize innovative technologies.
f. Co-ordination with CIFE Centers, Divisions, Sections, Cells and Committees.

Providing necessary inputs to Research Advisory Committee (RAC), Institute Research Council (IRC) and other decision-making authorities in qualitative and quantitative monitoring of the project deliverables, resource allocation and utilization evaluation methods, etc. The composition of the PME Cell is given in the annexure 29-30.

6.6.1.11. Collaboration with Academic Institutions and Industry

CIFE has active collaborations with other academic institutions, research institutions and industries. The institute has Memorandum of Understanding (MoUs) with the following international/national universities and organizations to facilitate knowledge sharing in fisheries research and academics.

S. NO.	DATE	ORGANIZATION	Letter of Intent	STATUS
		International MoUs		
1.	12.07.2019	The Commonwealth Scientific and Industrial Research Organization (CSIRO), Australia	LOI for • To encourage joint activities in the areas of fisheries education and research • Formulate student exchange programmes • Identify other areas of possible interest and collaboration	Signed
2.	23.12.2019	Hawassa University, Ethiopia	For co-operation in Agricultural research and education • Exchange of research students and scientists for educational and research programs of mutual intrest • Exchange academic materials and publications in the field of education and research • Collaborative research programs, seminars and	Signed

	workshops. • Faculty development program of mutual interest • Joint consultancies • Other academic/ research activities as deemed appropriate and mutually agreed by both parties	

Indian Universities				
3.	4.09.2017	Tamil Nadu Dr. J. Jayalalithaa Fisheries University, Nagapattinam, Tamil Nadu	For collaborative work in research and education	Signed
4.	10.04.2018	Maharashtra Animal and Fishery Science University, Nagpur, Maharashtra	For collaborative work in research and education	Signed
5.	25.06.2018	Chhattisgarh Kamdhenu Vishwavidyalaya, Raipur, Chhattisgarh	For collaborative work in research and education	Signed
6.	11.07.2018	Bihar Animal Sciences University, Patna, Bihar	For collaborative work in research and education	Signed
7.	16.02.2019	Kamdhenu University, Gandhi Nagar, Gujarat	For collaborative work in research and education	Signed
8.	04.07.2019	Central Soil Salinity Research Institute, Karnal, under NAHEP project	For collaboration in research and training	Signed
9.	31.10.2019	Assam Agriculture University, Jorhat, Assam	For collaborative work in research and education	Signed
10.	5.11.2019	College of Fisheries Science, Birsa Agriculture University, Ranchi, Jharkhand	For collaborative work in research and education	Signed
Government Institutions				
11.	19.11.2016	MGM'S Institute of Biosciences and Technology, Aurangabad, Maharashtra	• To provide education, training and execute short research project.	Signed
12.	25.01.2019	Institute of Pesticide Formulation Technologies (IPFT), Gurugram, Haryana	• Promotion of efficient application technologies suiting the existing requirements of the newer formulations, training and research.	Signed
13.	2.06.2017	Agriculture Skill Council of India (ASCI), Gurugram	• Training program as per National skill qualification framework • Assessment and certification	Signed

Private Organizations				
14.	16.4.2016	M/s. Tee Wave Technologies, Mr. P.V.S.L. Narasimham (Chairman), Charlapally Industrial Park, Hyderabad, A.P.	For manufacturing CIFE Eco-Hatchery, developed by ICAR-CIFE, Mumbai.	Signed
15.	10.09. 2017	Daryavardi Udyojak Sangh, Arnala; Mr. Prakash Patil (Chairman), Bhandarpada, Vasai, Palghar, Virar (W), Mumbai	Proposed for Prawn pickle developed at Post-harvest Technology lab, ICAR-CIFE, Mumbai.	Signed
16.	30.10.2017	Pavan Green Biotechnology Ltd., Dr. R. M. Belkune (Chairman), MIDC, TTC, Rabale, New Mumbai	Fish waste management through biotechnological interventions	Signed
17.	12.01.2018	West Coast Frozen Foods Pvt. Ltd., Mr. Rahul Kulkarni (Director), Mumbai.	Proposed for technology transfer for Fish sausages developed at Post-harvest Technology lab, ICAR-CIFE, Mumbai.	Signed
18.	10.06. 2019	Aquatic Livelihoods, Mr. Deepen Modi, Managing Committee Member, Kannamwar Nagar II, Vikhroli, Mumbai - 400083	For Recirculatory Aquaculture System (RAS) Aquaponics, developed by ICAR-CIFE, Mumbai.	In process
19.	12.06.2019	The Energy and Resources Institute (TERI), Dr. Ajay Mathur**,** Director General, India Habitat Centre, Lodhi Road, New Delhi – 110003	• Collaborative Research on bioaccumulation in fish and presence of heavy metals and the resulting toxicity • Studies on contaminants including virus in water bodies due to effluents • Study of Enteric bacteria in fish/aquatic environment • Study on the presence of micro plastics in fish tissues • Skill development programs in the areas of Post-Harvest Management for women self-help groups and fishermen communities.	Signed

			• Wastewater utilization for biofuel and value-added products from algae.	
20.	28.08.2020	The Erfinden Technologies Pvt Ltd., Mr. Sachin Deshpande, **(**Co- founder and CEO**),** C101, Five Gardens Society, Near Jagtap Dairy, Pune – 411017, Maharashtra	Collaborative Research activities shall be in the context of following three thrust areas namely i. A proof of concept (POC) for Artificial Intelligence (AI) – POC on identification of fish species ii. Internet of Things (IoT) • Viability study	Signed
21.	28.08.2020	The Erfinden Technologies Pvt Ltd., Mr. Sachin Deshpande; **(**Co- founder and CEO**);** C101, Five Gardens Society, Near Jagtap Dairy, Pune – 411017, Maharashtra	Non veg Mart app Online fresh fish and dried fish sell	Signed

6.6.2. Academic Support

6.6.2.1. Academic Council

In accordance with the UGC Regulations, 2010, the Academic Council of CIFE is constituted and the composition is given below.

i.	Vice-Chancellor /Director	Chairman
i.	Pro Vice-Chancellor / Joint Director	Vice -Chairman
ii.	Dean (Academics)	Member
iii.	Dean (Student Welfare)	Member
iv.	Head of the Departments	Members
v.	Ten Professors/Principal Scientist other than the Heads of the Departments (by rotation of seniority)	Members
vi.	Three Associate Professors / Senior Scientists by rotation of seniority	Members
vii.	Three Assistant Professors /Scientists form the Departments by rotation of seniority	Members
viii.	Three persons from amongst educationists of repute or persons from any other field related to the activities of the Institution deemed to be University who are not in the service of the Institution deemed to be University, nominated by the Vice-Chancellor	Members
ix.	Three persons who are not members of the faculty, co-opted by the Academic Council for their specialized knowledge.	Members
x.	Two student representatives	Members
xi.	Senior Administrative Officer / Registrar	Member Secretary

The powers and functions of the Academic Council:

- To consider matters of academic interest either on its own initiative or at the instance of the Board of Management or those proposed by the divisions/faculties and to take proper action thereon.
- To exercise general supervision over the academic work of the institute and to give direction regarding methods of instruction, evaluation and improvement in academic standards.
- To promote research within the institute, acquire reports on such researches from time to time.
- To prescribe courses of study leading to degrees and diplomas of the institute.

- To make arrangements for the conduct of examinations in conformity with the bye-laws.
- To appoint examiners, moderators, tabulators and such other personnel for different examinations.
- To recognize diplomas and degrees of universities and other institutions, and to determine equivalence with diplomas and degrees of the institute.
- To suggest measures for divisional coordination.
- To make recommendations to the Board of Management on matters related to teaching, research and overall management of the institute.

Details of Academic Council Meeting and Special Meeting during 2016 to 2020

S. No.	Academic Council Meeting	Date on which ACM held	Action Taken Report
1.	52nd ACM	18.11.2016	Annexure I
2.	53rd ACM	14.10.2017	Annexure II
3.	Special Academic Council Meeting for XIII Convocation	02.03.2017	
4.	54th ACM	15.09.2018	Annexure III
5.	Special academic Council Meeting for XIV Convocation	21.04.2019	
6.	55th ACM	04.01.2020	Annexure IV
7.	56th ACM(Online Virtual Meeting)	29.06.2020	Annexure V

The Action taken reports are given in Annexure 31-35.

6.6.2.2. Innovation and Best Practices

For effective learning and understanding of the concepts, several debates / quiz are conducted on specific topics and students are encouraged to participate in these programmes. To discourage the rote learning, some of the internal exams were conducted in open-book mode with the applied and concept oriented questions.

CIFE has taken a lead in adapting and implementing an innovative *hybrid / blended* learning approach to overcome the challenges posed by Covid-19 on in-person teaching. CIFE quickly adapted the novel tools such as Google Classroom, MS Teams, CISCO WebEx and the Zoom conferencing tools to not only deliver classes online but also conduct tests & exams, webinars, thesis viva voce, and and even practical demonstrations for both students and trainees (farmers, faculty, DoF officers).

As early as May-June 2020, CIFE conducted its popular short course “Science Communication for Smart Scholars” for 708 participants (mostly students, research scholars, scientists and faculty from Fisheries and Agricultural colleges across India with 40% of them being women) online by integrative use of the freely available Google Classroom (along with its Drive, Gmail & Meet apps), WhatsApp groups, Zoom Webinar tool etc to deliver expert lectures from across India/world to participants from across the country and even abroad. The program (both content &

delivery) has received a 4.8/5 rating by the participants. This inspired/encouraged several subsequent online training programs in NARES.

6.6.2.3. Library

The library of the CIFE is one of the largest libraries in the country in the area of fisheries education. It has a huge collection of books, journals, magazines and e-books. Currently, the library has 62,460 publications for the benefit of students, scientists and other faculty members. The classification of the publications is given below

Particulars	Quantity
Books	41,007
Hindi Books	5300
e-books	1309
CIFE Publications	42
Indian journals	4228
Foreign journals	8759
M.F.Sc Dissertations	1423
Ph.D. Theses	392
Total	**62,460**

The library has a comfortable space for reading and around 65 persons can visit the library at a time. CIFE library has state-of-the art facilities in cataloguing books and other reading material in library management system (LMS). LMS has comprehensive search facility through the Open Public Access Catalogue(OPAC) and it can be accessed from anywhere through the url: http://cifeopac.bestbookbuddies.com/. Currently, the library has uploaded about 1187 theses/dissertations in 'Krishi kosh' and the same can be accessed through url: https://krishikosh.egranth.ac.in/handle /1/33860.

CIFE has adopted RFID (Radio frequency identification) technology to handle lending, returning, sorting and tagging etc. of books, using RFID tags.

Library team:

The library team of CIFE consists of a Librarian, Sr. Library assistants, attendant, data operators and a supporting staff.

The composition of the Library Advisory Committee is given below:

- Director of the Institute: Chairman
- Members (4 to 7 from all the major disciplines)
- Member (I/c PME Cell)
- Member (Head of Finance)
- Member (Head of Administration)
- I/c Library Services (Member Secretary)

The committee meets on regular interval to discuss about the purchase of books for library, maintenance and development of library.

Library Management System

CIFE library uses ***Koha*** software for Library Management System for efficient functioning of the library activities.

Research journals, Periodicals and e-journals:

CIFE is an active member of ICAR-Consortium for e-Resources in Agriculture (popularly known as CeRA). It provides online access to various literature for the research and development activities. Currently it provides more than 52000 publications with full access to 1279 titles.

Library timing:

Library operates from 10 am to 6 pm. However, members also take advantage of remote facilities 24X7 to access the online contents from anywhere.

6.6.2.4. Centre for Excellence/Advance Studies/Centre for Advanced Faculty Training

CIFE is recognized as Centre for Advanced Faculty Training (CAFT) in Fisheries sciences. The institute has organized several capacity building programmes under CAFT and the details are given below.

Year	Title	Date	No. of Participants
2015-16	Nutrigenomic approaches un fish Nutritional research	8-18 December - 2015	17
	Ornamental Fish breeding and Culture	2-22 March-2016	13
2016-17	Winter School on Rapid Diagnostics in Fish Health Management	18 Nov 2016 08 Dec-2016	10
	Application of Medicinal Feed in Aquaculture	13-23 February 2017	12
	Biotechnological and Nanotechnological Tools in Aquatic Animal Health Management	8-28 March 2017	11
2017-18	Advances in Nano-Biotechnological Tools in Fisheries	4-13 December, 2017	11
	Advances in Microbiological and Biochemical Techniques in the Assessment of Seafood	9-29 January, 2018	16
	Molecular Techniques in Shrimp Health Management	24 Feb-5 March, 2018	08
	Utilization of Proteins Extracted from Leaves and Non-edible Seeds for Preparing Fish Feed	6-16 March, 2018	10

2018-19	Gene Mining Approaches and in silico Functional	03-23 December 2018	12
	Development and Application of Vaccines for Fish Aquaculture	04- 13 February 2019	11
	One Health With Special Reference to Fisheries and Aquaculture	18-27 February 2019	19
2019-20	Precision Fish Farming Automation Principals and Technological Solutions for Sustainable Aquaclture Production and Productivity	26 November-16 December-2019	22

6.6.2.5. Incubation Centre/Start up unit's/ Venture capital

S. No.	Name of the Owner/Proprietor	Name of Start-up	Subject Area	Present Status of Start-up (Active or Stop)	Year (of Start)
1	Mrs. Apurva Salvi	Matsya Ruchi	Fish Processing	Stop	2017-18
2	Mr. Chetan Salunkhe	Silver Aquatics	Aquaculture	Active	2019-20
3	Mr. Rakesh Sawant	Shree aquaculture	Aquaculture	Active	2019-20
4	Mrs. Amruta Koli	Mauli Foods	Fish Processing	Active	2019-20
5	Mr. Bhushan Koli	Fish for fish	Fish Processing	Active	2020-21
6	Mr. Sachin Deshpande	Non veg Mart	Fish Processing	Yet to start	2020-21
7	Mrs. Rekha Phande	Ekvira Seafoods	Fish Processing	Active	2020-21

6.6.2.6. Technology Enabled Learning Resources

ICAR–CIFE has developed the basic infrastructure (1 smart class room / virtual class room) for technology-enabled learning under NAHEP component-2A. The institute also developed two smart class rooms under development grant. ICAR-CIFE is in the process of developing Digital or E-content for selected post graduate courses. Grammarly and Turnitin Software is installed for self education and to improve writing skills. The entire faculty have been trained by IASRI team on using Agri-Diksha portal to upload the e-learning content. The institute is also planning to offer blended courses with off-line and online modules. For monitoring and maintenance of the infrastructure, a Nodal officer is appointed along with two master trainers to record and upload the e-content in the ICAR portal. The Chairman (BoS) of the discipline is authorized to monitor the quality and to evaluate the content of the e-learning module. To sustain these facilities, CIFE is envisaging to offer online courses on selected disciplines for SAARC countries.

Grammarly and Turnitin Software is installed for self education and to improve writing skills

6.6.2.7. Integrated Learning Systems (Experiential Learning)

Experiential Learning is not applicable to ICAR-CIFE, as the university offers PG and Doctoral degree programmes. However, ICAR-CIFE has one-month attachment training with industry or renowned labs for the Master's students to get practical knowledge related to industry or research problems.

6.6.2.8. Academic Industry Interface

The institute has transferred the knowledge generated out of the several research programmes through different channels such as research publications, technical bulletins, brochures, TV and radio talks to all the stake holders of the fisheries. Industry Day is organised for interaction with the entrepreneurs.

Further, the institute has several collaborative and contractual research activities with the industry for effective transfer of knowledge. The knowledge generated through the basic research has been transferred to the scientific community and other stake holders through peer-reviewed publications. The number of publications during the last five years are given below

Year	2016	2017	2018	2019	2020
Number of Publications	150	161	162	155	150

The knowledge generated from the applied research were transferred in the form of patents/technologies for commercialization. The details of patents filed by the CIFE are given below.

Year	2016	2017	2018	2019	2020
Number of patents	--	--	1	4	2

The qualified, knowledgeable human resources graduated from the university have got employment in different universities, research institutions, private industries and other sectors. The details of the student placement for the last five years are given below.

Year	2016	2017	2018	2019	2020
Placement details	46	65	72	57	37

The knowledge transfer by the above methods has directly or indirectly helped in mobilizing resources/ research funds from different agencies/institutes/industries.

6.6.2.9. National Ranking (ICAR/MHRD)

During 2017-18, CIFE secured 35th rank among all the Agricultural Universities of India. During 2018-19, CIFE bagged 7th rank and in 2019-20, CIFE secured 16th rank among all the

Agricultural Universities of India. ICAR-CIFE has been filling the university data under overall category and during 2020, the University was placed at the 96th position among top 150 Government Universities.

6.6.3. Research Support

6.6.3.1. Research Council

The Research activities of the institute are monitored by the Institute Research Council (IRC) under the chairmanship of the Director/Vice-Chancellor. All faculty of the institute (Scientists, Senior Scientists and Principal Scientists) are the members of the council. The council meets half-yearly to review the progress of the projects. Details of IRC meetings conducted during 2016-20 are given below.

S. No.	Research Council Meeting	Date on which IRC held
1.	Annual IRC	4-7 April, 2016
2.	Half yearly IRC	7 November, 2016
3.	Annual IRC	3-5 April, 2017
4.	Half yearly IRC	25 October, 2017
5.	Annual IRC	5-7 April, 2018
6.	Half yearly IRC	22 October, 2018
7.	Annual IRC	26-27 April, 2019
8.	Half yearly IRC	7 November, 2019
9.	Annual IRC (Online)	6-7 and13-14 August, 2020 and 30 September, 2020

Additionally, Research Advisory Committee (RAC) constituted by the ICAR provide the guidance in research related issues. The composition of the Research Advisory Committee (RAC) is given below.

i.	An eminent Scientist from outside the ICAR System nominated by the Director-General ICAR	Chairman
i.	Four-Five external experts (including retired Scientists of ICAR) representing the major areas of research and development programmes of the Institute nominated by the Director-General, ICAR	Member
i.	Director / Vice-Chancellor	Member

6.6.3.2. Directorate of Research

Being a Deemed-to-be University, ICAR-CIFE has a different establishment of the Directorate of Research; wherein all the scientists of the university engages in research and academics. Further, CIFE has five regional stations at i) Kakinada, Andhra Pradesh; ii) Rohtak, Haryana; iii) Kolkata, West Bengal; iv) Hoshangabad, Madhya Pradesh and v) Motipur, Bihar. These regional stations have field facilities and are being utilized to refine the production technology, standardizing the breeding technologies. The centres are also contributing to academic activities by providing hands-on experience on fish farming, breeding, and other research work. The Research Advisory Committee (RAC) and Institutional Research Council (IRC) are the monitoring bodies for research related activities.

6.6.3.3. Technology Developed and its Adoption

S. No.	Year	Name of Technology	Name of Licensee/ Contracting Party	IP Protection No.
1.	2010	Animal Feed Supplement	Ready for commercialization	Granted Patent No.: IN340969 (9 July, 2020)
2.	2010	Feed Supplement for Improving Reproductive Health	Ready for commercialization	Granted Patent No.: IN340970 (9 July, 2020)
3.	2012	Ivermectin Based Medicated Feed Mix for Treatment of Fish Parasites and Growth Restoration in Fish	Submitted to AgIn for commercialization	Granted Patent No.: IN330484 (28 January, 2020)
4.	2013	Novel Primers and a High Throughput Real-Time Assay for White Spot Syndrome Virus (WSSV)		Patent No. IN345451 (Granted on 28 August, 2020)
5.	2016	Rearing of Fish Seed in Cages	Transfer to Women SHG, Dimbhe, Dimbe reservoir, Bhimashankar road, Pune, Maharashtra	---
6.	2016	Sausage of Pangasius Mince	Ready to submit to Agri Innovate for commercialization	---
7.	2016	Solar Powered Cool Boxes to Improve Shelf Life and Hygiene Of Fish Sold In Retail Markets in Mumbai	Ready for commercialization	---
8.	2016	Electrical Device with Charged Column for De-Contamination of Water	Ready for commercialization	---
9.	2017	Laminated Bombay Duck Technology	Ready for commercialization	---

10.	2018	Bicistronic Vaccine for *Edwardsiella Tarda*	Ready for transfer to industry	---
11.	2018	Design of Double Compartment Device for Micro And Macro Plastic Entrapment in Flowing Water	---	---
12.	2018	Novel Formulation of Non-Enzymatic Free Radical Scavenger for Improving Compensatory Growth in Carp	--	Patent Application 201821027496
13.	2019	Eco-Feed: An Aquafeed for Biofloc Based Fish Culture	Under field trials	Provisional patent filed: 201921042385
14.	2019	Dual Vaccine Against Bacterial Pathogens	Ready for transfer to industry	---
15.	2020	Cife – Test Kit	Ready for commercialization	Submitted to AgIn
16.	2019	Anthelmintic Medicated Feed for Routine Deworming and Disinfection of Fishes	---	---
17.	2019	Leaf Meal as a Replacer of DORB in Carp Feed	Popularized	One Fermenter cum mixer has been developed
18.	2019	Protein Isolation from Non-Edible Seeds for Aqua Feed	Prototype is under fabrication stage	---
19.	2019	Inactivated Vaccine Against *Flavobacterium Columnare* for Fish	Under field trials	---
20.	2020	Prototype Automatic Feeder for Aquaculture	Under field trials	---
21.	2020	Timer-Based Power Operated Prototype Water Filtration System for Aquaculture	Under field trials	---
22.	2020	Floating Carp Hatchery for Reservoirs	Under field trials	---
23.	2020	Aquaponics	Under field trials	In process (transfer to Project Sajal Technologies Pvt. Ltd.)
24.	2019	DNA Vaccine for WSSV	Under field trails	

Technologies Commercialised:

S. No.	Year	Name Of Technology/ Innovation/ Material/ Training Module Or Title	Name of Inventor/Researcher/ Project/ Scheme	Name of Licensee/ Contracting Party
1.	2012	Ivermectin Based Medicated Feed Mix for Treatment of Fish Parasites and Growth Restoration in Fish	Dr. Md Aklakur, Dr. A K Pal, Dr. N P Sahu	CIFE – Argunil (submitted to Agri Innovate and in the process of commercialization)
2.	2013	CIFE-Eco Hatchery	Dr. A. K. Verma and Dr. V. K. Tiwari	Licensed to TEEWAVE Pvt. Ltd Andhra Pradesh (16 April 2016)
3.	2015	A Method for Reclamation of Salt Effected Sugarcane Fields Through Sub-Surface Drainage System And Aquaculture	Dr. A. K. Reddy, Dr. W. S. Lakra and Mr. Chandrakant M. H.	Transfer to State fisheries and Agriculture Department, Maharashtra, Pune, Satara, Sangli and Kolhapur
4.	2016	Raising of Fish Seed in Cages	Dr. M. P. Singh Kohli, Dr. Kiran Dube & Dr. A. K. Reddy	Transfer to Dimbe reservoir, Women SHG, Dimbhe, Bhimashankar road, Pune, Maharashtra
5.	2017	Prawn Pickle	PHT Department of CIFE, Mumbai	Transferred to Daryavardi Udyojak Sangh, Arnala, Bhandarpada, Vasai, Palghar, Virar (W), Mumbai
6.	2017	Fish Waste Management Through Biotechnological Interventions	Dr. A. K. Verma	Transferred to Pavan Green Biotechnology Ltd., MIDC, TTC, Rabale, New Mumbai
7.	2018	Fish Sausages	PHT Department of CIFE, Mumbai	Transferred to West Coast Frozen Foods Pvt. Ltd., Mumbai.
8.	2019	Recirculatory Aquaculture System (Ras) Aquaponics	Dr. A. K. Verma	Aquatic Livelihoods, Kannamwar Nagar II, Vikhroli, Mumbai – 400083

6.6.3.4. Research Publication:

Sr. No.	Details of publications	NAAS	NAAS/open/non-NAAS Score	Citation
	2019-20			
1.	Ahmad I, Leya T, Saharan N, Babitha Rani AM, Rathore G, Gora AH, Bhat IA, Verma AK (2019) Carbon sources affect water quality and haemato-biochemical responses of *Labeo rohita* in zero-water exchange biofloc system. *Aquaculture Research.* 50: 2879-2887.	7.50	7.50	2
2.	Ail SKS, Misra CK, Chaudhari AK, Landge AT, Dube K, Nayak BB, Shenoy L (2019) Comparative analysis of fish culture methods in village ponds of Gujarat. *Fishery Technology*. 56(4): 254-260.	5.25	3.94	-
3.	Ajima MN, Pandey PK, Kumar K, Poojary N, Gora AH (2019) Verapamil caused biochemical alteration, DNA damage, and expression of hepatic stress-related gene biomarkers in Nile tilapia, *Oreochromis niloticus*. *Comparative Clinical Pathology*. 26:1-10.	-	1.5	-
4.	Ali S, Kumar P (2019) Testing predictions from an environmental stress on macroinvertebrate diversity across rocky intertidal elevation gradients in Mumbai, India. *National Academy Science Letters- India.* doi.org/10.1007/s40009/-019-00860-8.	6.33	4.75	-
5.	Behera A, Roul SK, Kumar AP, Bhushan S, Gangan SS, Jaiswar AK (2019) First report confirming the occurrence of Jumping halfbeak *Hemiramphus archipelagicus* Collette & Parin, 1978 (Beloniformes: Hemiramphidae) from the western Bay of Bengal. *Thalassas: An International Journal of Marine Sciences*. 11: 1-5.	6.6	0.6	-
6.	Bharti V, Jayasankar J, Sukla SP, Vargese E, Sathianandan TV, George G, Kripa V, Jaiswar AK (2019) Distribution of Indian oil sardine *Sardinella longiceps* along south-west coast of India. *Indian Journal of Animal Sciences*, 89(8): 912–917.	6.23	4.75	-
7.	Bhat IA, Ahmad I, Mir IN, Yousf DJ, Ganie PA, Bhat, RAH, Gireesh-Babu P, Sharma R (2019) Evaluation of the *in vivo* effect of chitosan conjugated eurycomanone nanoparticles on the reproductive response in female fish model. *Aquaculture.* 510: 392-399.	9.02	9.02	-
8.	Bhat NM, Sharma A, Sharma R (2019) Encouraging collective voices of fisherwomen through celebration of fish festivals. *Agricultural Economics Research Review.* 32: 228	5.90	5.90	-

9.	Bhoomaiah D, Krishnan P, Kantharajan G, Sangeeta B, Rajendran KV (2019) A scientometric assessment of research on white spot syndrome virus (WSSV) in India vis-a-vis the world (1998–2017). *Aquaculture*. 734672.	9.02	9.02	1
10.	Bhutia RN, Hari MS, Srinivasan NT, Deshmukhe G, Ramteke KK, Bhushan S, Landge AT (2019) Stock structure of small indigenous and near threatened *Ailia coila* (Hamilton, 1822) from Ganga and Brahmaputra river systems. *Journal of Entomology and Zoology Studies*. 7(3): 1600-1605.	5.53	4.15	1
11.	Borah S, Vaisakh G, Jaiswar AK, Bhattacharjya BK, Sahoo AK, Deshmukhe G, Behera BK, Meena DK, Raman RK, Das BN (2019) Association pattern between dimensions of fish and otolith to expedite morphometric variations of three geographically isolated stocks of *Tenualosa ilisha* (Hamilton, 1822) from diverse ecosystems. *Indian Journal of Fisheries*. 66(3): 48-52	6.26	6.26	1
12.	Chattopadhyay K, Xavier KAM, Balange A, Layana P, Nayak BB (2019) Chitosan gel addition in pre-emulsified fish mince-Effect on quality parameters of sausages under refrigerated storage. *LWT- Food Science and Technology*. 110: 283-291.	9.71	9.71	1
13.	Chattopadhyay K, Xavier KAM, Nayak BB, Balange A, Layana P (2019) Chitosan hydrogel inclusion in fish mince based emulsion sausages: Effect of gel interaction on functional and physicochemical qualities. *International Journal of Biological Macromolecules*. 134: 1063-1069.	10.78	10.78	4
14.	Chhandaprajnadarshini EM, Raoul SK, Swain S, Sen S, Jaiswar AK, Shenoy L, Chakraborty SK (2019) Growth, mortality and stock assessment of brushtooth lizard fish *Saurida undosquamis* (Richarson, 1848) from Mumbai waters, north west coast of India. *Indian Journal of Geo-Marine Science.* 48(10): 1540-1547.	6.30	6.30	-
15.	Chhandaprajnadarsini EM, Chhakraborty SK, Roul SK, Jaiswar AK, Sreekanth GB, Swain S (2019) Stock identification of tiger tooth croaker *Otolithes ruber* (Schneider, 1801) along the Indian coast using truss network analysis. *Indian Journal of Fisheries*. 66(3): 24-31.	6.26	6.26	-
16.	Cristelle T, François NE, Kumar P, Nayak BB (2019) Effect of different smoking processes on the nutritional and PAHs composition of smoked *Clarias gariepinus* and *Cyprinus carpio*. *Food Science and Nutrition*. 7 (7): 2412-2418.	7.75	7.75	1

17.	Dar SA, Srivastava PP, Rather MA, Varghese T, Rasool SI, Gupta S (2019) Molecular and computational analysis of Ghrelin, growth hormone Secretagogues receptor and mRNA expression of growth-related genes after exogenous administered ghrelin peptide in *Labeo rohita*. *International Journal of Biological Macromolecules.* 142: 756-68.	10.78	10.78	1
18.	Dar SA, Srivastava PP, Varghese T, Gupta S, Krishna G, Nuzaiba PM, Leya T (2019) Expression of growth and hunger related genes and physio-biochemical responses in *Labeo rohita* (Hamilton, 1822) fed with lysine and betaine. *Cellular Physiology and Biochemistry*. 53: 851-864.	11.50	11.50	1
19.	Das MM, Misra AK, Singh KK, Pailan GH, Khan TA (2019) Variation in straw grain ratio and straw quality in different rice cultivars of India. *Indian Journal of Animal Nutrition*. 36:164-172.	5.02	3.75	-
20.	Das O, Kumar SH, Nayak BB (2019) Relative abundance of halophilic archaea and bacteria in diverse salt-fermented products. *LWT- Food Science and Technology*. 117: 108688	9.71	9.71	-
21.	Das O, Lekshmi M, Kumar S, Nayak BB (2019) Incidence of norovirus in tropical seafood harbouring fecal indicator bacteria. *Marine Pollution Bulletin*.150:110777.	9.78	9.78	1
22.	Das SCS, Joshi KD, Chakraborty SK, Panda D, Jaiswar AK (2019) Length-weight relationship and condition factor of *Cyprinus carpio* Linnaeus, 1758 from the river Ganga, Allahabad, India. *Journal of Entomology and Zoology Studies.* 7(3): 1420-1424.	5.53	5.53	-
23.	Deepika A, Sreedharan K, Rajendran KV (2019) Molecular characterisation, ontogeny and tissue level expression analysis of a downstream signalling molecule of the Toll-pathway, Dorsal (an NF-κB homologue) in black tiger shrimp (*Penaeus monodon*). *Journal of Indian Fisheries Association*. 46(1): 7-15.	3.12	3.12	4
24.	Devi MS, Singh VV, Xavier KAM, Shenoy L (2019) Catch composition of trawl landings along Mumbai Coast, Maharashtra. *Fishery Technology*. 56: 89-92.	5.25	5.25	-
25.	Devivilla S, Lekshmi M, Kumar SH, Valappil RK, Roy SD, Nayak BB (2019) Effect of sodium hypochlorite on biofilm-forming ability of histamine-producing bacteria isolated from fish. *Journal of Food Protection*. 82(8):1417-1422.	7.56	7.56	1
26.	Devivilla S, Stephen J, Lekshmi M, Kumar SH, Nayak BB (2019) Evaluation of modified Zobell marine agar for differential isolation of histamine-forming bacteria from	7.80	7.80	1

	fresh fish. *Journal of Microbiological Methods*. 163:105649.			
27.	Dhamotharan K, Tengs T, Wessel Ø, Braaen S, Nyman IB, Hansen EF, Christiansen DH, Dahle MK, Rimstad E, Markussen T (2019) Evolution of the Piscine orthoreovirus Genome Linked to Emergence of Heart and Skeletal Muscle Inflammation in Farmed Atlantic Salmon (*Salmo salar*). *Viruses*. 11(5): 465-471	9.81	9.81	3
28.	Dhanabalan V, Xavier KAM, Murthy LN, Asha KK, Balange A, Nayak BB (2019) Evaluation of physicochemical and functional properties of spray dried protein hydrolysate from non-penaeid shrimp (*Acetes indicus*). *Journal of the Science of Food and Agriculture*. 100(1): 50-58.	8.42	8.42	-
29.	Dhanabalan V, Balange AK, Nayak BB, Murthy LN, Asha KK, Xavier M, (2020) Effect of proteolytic enzymes on the extent of deproteinisation of Acetes shell residue. *Journal of Experimental Zoology, India* 23(1): 947-951.	5.51	5.51	-
30.	Dhayanath M, Prasad KP, Juliet MA, Paul T, Hardik M (2019) Prevalence of antimicrobial resistance among *Vibrio* spp isolated from the digestive tract of cultured *Penaeus vannamei*. *Journal of Animal Research*. 9(5): 675-681.	6.44	6.44	-
31.	Dona P, Nair VR, Ojha SN, Vipinkumar VP, Nalini RK, Salas S (2019) Change agency facilitated social entrepreneurship towards community-based fisheries management (CBFM) in Vembad lake, Kerala. *Multilogic in Science.* 9(30): 1-7.	5.20	5.20	1
32.	Ebeneezar S, Vijayagopal P, Srivastava PP, Gupta S, Varghese T, Prabu DL, Chandrasekar S, Varghese E, Sayooj P, Tejpal CS, Wilson L (2019) Dietary lysine requirement of juvenile Silver pompano, *Trachinotus blochii* (Lacepede, 1801). *Aquaculture*. 511: 734234.	9.02	6.77	-
33.	Ezhilarasi V, Verma AK, Babitha Rani AM, Harikrishna V, Chandrakant MH, Ahmad I, Nageshwari P (2019) Effect of different carbon sources on growth, non-specific immunity and digestive enzyme activity of amur carp, *Cyprinus rubrofuscus* (Lacepede, 1803) fingerlings in biofloc based rearing system using inland saline groundwater. *Indian Journal of Fisheries.* 66(3): 85-92	6.26	6.26	-
34.	Garima, Jaiswar AK, Landge AT, Deshmukhe G (2019) Observation on primary productivity and ecology of Karanja creek, Maharashtra, India. *Journal of Indian Fisheries Association*. 45(2): 55-65.	3.12	3.12	-

35.	Ghosh SK, Lekshmi M, Das O, Kumar S, Nayak BB (2019) Occurrence of human enteric Adenoviruses in fresh tropical seafood from retail markets and landing centers. *Journal of Food Science*. 84 (8): 2256-2260	8.08	8.08	-
36.	Gomathy V, Ananthan PS (2019) Chicken feet' farming potential in inland salt affected areas: striking gold for farmers and entrepreneurs. *Journal of Aquaculture in the Tropics*, 34(3-4): 209-215	3.86	3.86	-
37.	Gomathy V, Sharma R, Sharma A (2019) Assessment of Chank fishing as livelihood in Therespuram, Tuticorin. *International Journal of Pure & Applied Bioscience*, 7(4): 207-216	4.74	4.74	-
38.	Gopan A, Sahu NP, Varghese T, Sardar P, Gupta S, Gupta G, Maiti MK (2019) Preparation of protein isolate from neem seed: biochemical evaluation, antinutrients and *in vitro* digestibility study. *Animal Nutrition and Feed Technology*. 19(2): 203-216.	6.31	6.31	1
39.	Gopan A, Sahu NP, Varghese T, Sardar P, Maiti MK (2019) Karanj protein isolate prepared from karanj seed cake: Effect on growth, body composition and physio-metabolic responses in *Labeo rohita* fingerlings. *Aquaculture Nutrition.* 19: 1-15.	8.10	8.10	-
40.	Goswami, Chaudhari A, Nagpure NS, Gireesh-Babu P, Dubey A, Das DK (2020). Development and characterization of a new DRCF cell line from Indian wild strain zebrafish *Danio rerio* (Hamilton1822). *Fish Physiology Biochemistry* https://doi.org/10.1007/s10695-020-00792-x	7.77	7.77	-
41.	Gupta G, Chatterjee A, Kumar M, Sardar P, Varghese T, Srivastava PP, Gupta S (2019) Efficacy of single and multiple doses of fenbendazole against gill parasites (*Dactylogyrus* sp.) of *Labeo rohita* (Hamilton, 1822) and its physio-metabolic effects on the fish. *Aquaculture Research*. doi.org/10.1111/are.14470	7.50	7.50	-
42.	Hari MS, Abidi ZJ, Ayyathurai K (2019) Lack of genetic differentiation of Milkfish, *Chanos chanos* (Forsskål, 1775) revealed by mitochondrial ATPase 6/8 genes. *Mitochondrial DNA* Part A. 30(3): 511-516.	7.76	7.76	-
43.	Harshavardhan DJ, Tiwari VK, Gupta S, Sharma R, Lakra WS, Sahoo U (2019) Application of nanotechnology for the production of masculinized Tilapia, *Oreochromis niloticus* (Linnaeus, 1758). *Aquaculture*, 511: 734206.	9.02	9.02	-
44.	Hoilenting, Kumar DK, Sharma R, Borah BC, Kumar RS 2019. Status of Indian shad fishery in Dhubri district of Assam, India. *International Journal of Agriculture & Environmental Science* 6(5): 18-23.	-	2.0	-

45.	Hussain T, Chakraborty SK, Jaiswar AK, Kumar T, Sandhya KM, Sadawarte R (2019) Stock assessment of oil sardine *Sardinella longiceps* Valanciennes 1847 (Clupeiformes: Clupeidae) in the northern Arabian Sea. *Indian Journal of Geo-Marine Sciences*. 45(5): 613-621.	6.30	6.30	-
46.	Iburahim SA, Pradhan SK, Nirmal T, Jaiswar AK (2019) Blue bottles and its consequences along the Mumbai coast of Maharashtra, India. *Journal of Aquaculture in the Tropics*. 34(1):107-113.	3.86	3.86	-
47.	Iffat J, Tiwari VK, Verma AK, PavanKumar A (2019) Effect of different salinities on breeding and larval development of Common carp, *Cyprinus carpio* (Linnaeus, 1758) in inland saline groundwater. *Aquaculture*. 518 (15): 734658.	9.02	9.02	-
48.	Jahan I, Tiwari VK, Verma AK, Ranjan A (2019) Effect of salinity on lipid profile of *Cyprinus carpio* reared in inland saline water. *Journal of Environmental Biology*. 56: 175-181.	6.73	6.73	-
49.	Jaiswar R, Chavan B, Srivastava PP (2019) Length-weight relationship of two gobids *Boleophthalmus boddarti* (pallas, 1770) and *Boleophthalmus dussumieri* (valenciennes, 1837) of Mumbai coast, India. *Journal of Indian Fisheries Association.* 45 (2): 47-53 (3.120, 0.014)	3.12	3.12	-
50.	Jayant M, Sahu NP, Deo AD, Gupta S, Garg CK, Rajendran KV (2019) Nutritional evaluation of fermented sweet potato leaf meal as a replacer of deoiled rice bran in the diet of *Labeo rohita* fingerlings. *Journal of Experimental Zoology, India*. 23(1): 1-10. (5.53, --)	5.51	5.51	-
51.	Jenishma JS, Kesavan S, Shenoy L, Xavier KAM, Bhendekar SN, Kamat SS, Singh R, Sundhar S (2019) Study on catch composition and bycatch from shrimp trawl along Mumbai coast. *Journal of Experimental Zoology, India*. 22 (2): 693-705. (5.51, -)	5.51	5.51	-
52.	Kalita N, Pavan-Kumar A, Phukan B, Chaudhari A, Nagpure NS (2020) Genetic diversity of vulnerable Assamese Kingfish, *Cyprinion semiplotum* (McClelland, 1839) inferred from mitochondrial DNA marker. *National Academic Science Letter* https://doi.org/10.1007/s40009-020-00905-3	6.33	6.33	-
53.	Karmakar S, Abraham T J, Kumar S, Shukla SP, Roy U, Kumar K (2019) Triclosan exposure induces varying extent of reversible antimicrobial resistance in *Aeromonas hydrophila* and *Edwardsiella tarda*. *Ecotoxicology & Environmental Safety*. 180: 309-316.	10.53	10.53	3

54.	Kesavan S, Jenishma JS, Nirmal T, Kamat SS, Bhutia TP, Xavier KAM, Shenoy L (2019) Length-weight relationship of three stomatopod species from Mumbai coast, India. *Crustaceana*. 92(9): 1141-1149. (6.794, 0.794)	6.79	6.79	-
55.	Khot M, Jaiswar AK, Peter KL (2019) The taxonomy of two species of Xenophthalmidae from Maharashtra, India, and the generic placement of *Xenophthalmus garthii* Sankarankutty, 1969 (Decapoda, Brachyura). *Crustaceana*, 92(11-12): 1337-1348. (6.79, 0.79).	6.79	6.79	-
56.	Kiranmayi D, Sharma A, Prasad KP, Sharma R (2019) Socio-economic profile of fish farmers of Telangana and usage of mobile apps. *Asian Journal of Agricultural Extension, Economics & Sociology.* 37: 1-9	4.35	4.35	1
57.	Kumar A, Pradhan PK, Chadha NK, Mohindra V, Tiwari VK, Sood N, Gisbert E (2019) Ontogeny of the digestive tract in stinging catfish, *Heteropneustes fossilis* (Bloch) larvae. *Fish Physiology and Biochemistry*, 45(2): 667–679.	7.74	7.74	2
58.	Kumar A, Reddy AK, Babitha Rani AM, Rathore G, Lakra WS, Jayant M (2019) Water quality and nutrient dynamics of biofloc with different C/N ratios in inland saline water. *Journal of Animal Research*, 9 (5): 783-791	5.68	5.68	-
59.	Kumar, L R. G., Kumar, H. S., Anas, K K., ,Tejpal, C. S., Chatterjee, N S., Nayak, B.B., Mathew, S., Ravishankar, C. N., (2020) In-vitro release Properties of Squalene Stabilized by Chitosan-whey Protein isolate. *Fishery Technology* 57 : 115 - 120	5.25	5.25	-
60.	Kumar M, Varghese T, Sahu NP, Gupta G, Dasgupta S (2019) Changes in the biochemical and mineral composition of hilsa shad, *Tenualosa ilisha* (hamilton, 1822) during upstream spawning migration. *International Journal of Current Microbiology and Applied Sciences*. 8(6): 338-346	5.38	5.38	-
61.	Kumar M, Varghese T, Sahu NP, Gupta G, Dasgupta S (2019) Pseudobranch mimics gill in expressing Na^+-K^+ ATPase 1 α-subunit and carbonic anhydrase in concert with H^+-ATPase in adult hilsa (*Tenualosa ilisha*) during river migration. *Fish Physiology and Biochemistry.* 1:14	7.74	7.74	-
62.	Kumar N, Brahmchari RK, Bhushan S, Thorat ST, Kumar P, Chandan NK, Kumar M, Singh NP (2019) Synergistic effect of dietary selenium nanoparticles and riboflavin on the enhanced thermal efficiency of fish against multiple stress factors. *Journal of Thermal Biology*. 85: 102417.	7.90	5.95	-

63.	Kumar N, Gupta SK, Bhushan S, Singh NP (2019) Impacts of acute toxicity of arsenic (III) alone and with high temperature on stress biomarkers, immunological status and cellular metabolism in fish. *Aquatic Toxicology*. 214: 105233.	9.79	7.35	--
64.	Kumar P, Pal AK, Sahu NP, Christina L, Jha AK (2019) Biochemical and haematological responses to thermal stress in *Labeo rohita* (Hamilton, 1822) fingerlings. *Indian Journal of Fisheries.* 66 (2): 71-77.	6.26	6.26	-
65.	Kumar R, Bharadiya SA, Dineshbabu AP, Jaiswar AK, Shenoy L, Kumar AP, Rahangdale S (2019) New distributional record for Monacanthid fishes (Tetradontiiforems: Monacanthidae) from north eastern Arabian Sea, western Indian Ocean. *Thalassas: An International Journal of Marine Sciences*. 35(2): 431-436	-	2.0	-
66.	Kumar S, Lekshmi M, Parvathi A, Ojha M, Wenzel N, Varela MF (2020) Functional and structural roles of the major facilitator superfamily bacterial multidrug efflux pumps. *Microorganisms*. doi:10.3390/microorganisms8020266	-	2.0	-
67.	Kumar S, Pandey PK, Kumar S, Anand T, Suryakumar B, Bhuvaneswari R (2019) Effect of periphyton (aquamat installation) in the profitability of semi-intensive shrimp culture systems. *Indian Journal of Economics and Development*. 7(1): 1-9.	4.82	4.82	-
68.	Kumar S, Sahu NP, Ranjan A, Gupta S, Deo AD (2019) Physio-metabolic and haematological changes of *Labeo rohita* fed with graded level of de-oiled rice bran-based diet. *Fish Physiology and Biochemistry*, 15: 1-11.	7.74	7.74	-
69.	Kumari P, Kumar S, Ramesh M, Shameena S, Deo AD, Rajendran KV, Raman RP (2019) Antiparasitic effect of aqueous and organic solvent extracts of *Azadirachta indica* leaf against *Argulus japonicus* in *Carassius auratus*. *Aquaculture*. 511: 634175.	9.02	9.02	-
70.	Kumari R, Bedekar MK, Prasad KP, Kumar K, Rajendran KV (2019) Expression analysis of Interleukin-1 receptor associated kinase-4 (irak-4) gene in midgut of lipopolysaccharide induced *Penaeus monodon*. *Journal of Experimental Zoology India.* 22(2): 707-711.	5.51	5.51	-
71.	Layana P, Xavier KAM, Lekshmi S, Deshmukhe G, Nayak BB, Balange AK (2019) Antioxidant and antimicrobial potential of hydroethanolic extracts of *Padina tetrastomatica* from Northwest coast of India. *Fishery Technology.* 56: 199-204	5.25	5.25	-

72.	Lekshmi MN, Praveen KV, Sreekanth GB, Singh NP, Vennila A, Kumar RR, Pandey PK (2019) Economic evaluation of different aquaculture systems in coastal waters of Goa, Southwest Coast of India. *Fishery Technology.* 56(3): 231-241.	5.25	5.25	-
73.	Lingam SS, Sawant PB, Chadha NK, Prasad KP, Muralidhar AP, Syamala K, Xavier KM (2019) Duration of stunting impacts compensatory growth and carcass quality of farmed milkfish, *Chanos chanos* (Forsskal, 1775) under field conditions. *Scientific Reports*. 9(1):1-11.	10.01	10.01	-
74.	Lingam SS, Sawant, PB, Chadha NK, Prasad KP, Muralidhar AP, Syamala K, Xavier KA (2019) Effect of duration of stunting on physiological recovery of stunted Milkfish under field conditions: A relevant farmers' advisory. *Journal of Coastal Research*. 86(1): 32-42.	6.80	6.80	-
75.	Mahapatra BK, Pradhan A, Kumar S (2019) Length-weight relationship of three indigenous ornamental fishes from North Eastern hilly region, Assam, India. *Journal of Indian Fisheries Association*. 46(1): 25-29	3.12	3.12	-
76.	Maiti MK, Sahu NP, Sardar P, Shamna N, Deo AD, Gopan A, Sahoo S (2019) Optimum utilization of *Hygrophila spinosa* leaf meal in the diet of *Labeo rohita* (Hamilton, 1822) fingerlings. *Aquaculture Reports.* 15: 1002-1013.	7.89	7.89	1
77.	Malik MS, Bjørgen H, Dhamotharan K, Wessel Ø, Koppang EO, Di-Cicco E, Hansen EF, Dahle MK, Rimstad E (2019) Erythroid progenitor cells in Atlantic salmon (*Salmo salar*) may be persistently and productively infected with Piscine Orthoreovirus (PRV). *Viruses*. 11(9): 824-830.	9.81	7.35	1
78.	Markad AT, Landge AT, Nayak BB, Inamdar AB, Mishra AK (2019) Trophic state modeling for shallow freshwater reservoir: a new approach. *Environmental Monitoring and Assessment*. 191 (9): 586.	7.96	7.96	2
79.	Mary AS, Jayachandran KV, Landge AT, Gladston Y, Kumar AP (2019) Establishment of taxonomic status of *Macrobrachium indicum* Jayachandran & Joseph (Decapoda:Palaemonidae) through molecular characterization with a note on related species. Zootaxa. 4652(1): 174–182.	6.99	6.99	-
80.	Matolia J, Shukla SP, Kumar S, Kumar K, Singh A (2019) A Physical entrapment of chitosan in fixed down-flow column bed enhances triclosan removal from water. *Water Science & Technology.* 80(7): 1374-1383.	7.60	7.60	-
81.	Medhi K, Nirmal T, Bhattacharjya BK, Bhushan S, Kakati A, Borah S, Mallik A, Das BK (2019) An	5.51	5.51	-

	inventory on the freshwater fish diversity of two tropical flood plain wetlands of Brahmaputra basin, Assam, India. *Journal of Experimental Zoology: India*. 22(2): 1243-1251.			
82.	Mir IN, Srivastava PP, Bhat IA, Dar SA, Sushila N, Varghese T, Muralidhar AP, Jain KK (2019) Expression and activity of key lipases during the larval development of walking catfish (*Clarias magur*). *Journal of Experimental Zoology* Part B: *Molecular and Developmental Evolution.* 332(5): 149-57.	7.72	7.72	1
83.	Mir IN, Srivastava PP, Bhat IA, Jaffar YD, Sushila N, Sardar P, Kumar S, Muralidhar AP, Jain KK (2019) Optimal dietary lipid and protein level for growth and survival of catfish *Clarias magur* larvae. *Aquaculture*. Doi:10.1016/j.aquaculture.2019.734678	9.02	9.02	-
84.	Naik RN, Ghosh S, Sreedhar U, Jaiswar AK, Shenoy L (2019) Length-weight relationship of selected commercially important marine fishes from east coast of India. *Journal of Entomology and Zoology Studies*. 7(1): 1650-1652.	5.53	5.53	-
85.	Narway K, Chakravarty S, Jain A, Pailan GH, Dasgupta S (2019) Fish diversity and fisheries of Kotwal reservoir, Morena, Madhya Pradesh. *Journal of Entomology and Zoology Studies.* 7(6): 316-323.	5.53	5.53	-
86.	Neethu M, Dube K, Tiwari VK, Poojary N (2019) Methyl farnesoate enhances growth in *Macrobrachium rosenbergii*. *Journal of Indian Fisheries Association*. 46(1): 53-57.	3.12	3.12	-
87.	Nuwansi KKT, Verma AK, Rathore G, Chandrakant MH, Prabhath GPWA, Peter RM (2019) Effect of hydraulic loading rate on the growth of koi carp (*Cyprinus carpio* var. *koi*.) and gotukola (*Centella asiatica* (L.) using phytoremadiated aquaculture wastewater in aquaponics. *Aquaculture International.* doi.org/10.1007/s10499-019-00485-0	7.46	7.46	-
88.	Nuzaiba PM, Varghese T, Gupta S, Sahu NP, Banani M, Srivastava PP, Krishna G. Dietary genistein disrupts sex steroid and vitellogenic response in female common carp, *Cyprinus carpio* L. *Aquaculture*. 522:735062.	9.02	9.02	-
89.	Ojha SN (2019) Ontological design of aqua-chambers of commerce framework: a private fisheries and aquaculture extension strategy. *MEDC Economic Digest*. 2(1): 24-27.	-	0.5	-
90.	Pailan GH, Sahoo S, Singh DK (2019) Role of carotenoids in ornamental fish nutrition: A review. *Indian Journal of Animal Nutrition*. 36 (3): 218-227	5.02	5.02	-

91.	Pathak MS, Lakra WS, Reddy AK, Chadha NK, Tiwari VK, Srivastava PP (2019) Growth and survival of silver pompano *Trachinotus blochii* (Lacepede, 1801) at different salinities in inland saline ground water. *Indian Journal of Animal Sciences.* 89(5): 581–587	6.28	6.28	-
92.	Pathan MA, Chaudhari A, Krishna G 2019. Inbred zebrafish lines: A genetic repository for zebrafish researchers. *Indian Journal of Genetics*. 79(1): 150-159.	6.47	6.47	-
93.	Patil S, Sharma A (2019) Shrimp industry gender gap in India: Case of Maharashtra state. *Journal of Entomology and Zoology Studies.* 7(6): 380-383.	5.53	5.53	-
94.	Pattanaik SS, Sawant PB, Xavier KM, Dube K, Srivastava PP, Dhanabalan V, Chadha NK (2019) Characterization of carotenoprotein from different shrimp shell waste for possible use as supplementary nutritive feed ingredient in animal diets. *Aquaculture.* 515: 734594.	9.02	9.02	4
95.	Paul T, Kumar S, Shukla SP, Pal P, Kumar K, Poojary N, Biswal A, Mishra A. (2020) A multi-biomarker approach using integrated biomarker response to assess the effect of pH on triclosan toxicity in *Pangasianodon hypophthalmus* (Sauvage, 1878). *Environmental Pollution*. 17:114001.	11.71	11.71	-
96.	Paul T, Shukla SP, Kumar K, Poojary N, Manickwasagam, Kumar S (2019) Effects of temperature and pH on acute toxicity of triclosan in *Pangasianodon hypohthalmus* (Sauvage, 1878). *Proceedings of National Academy of Science B: Biological Science* Doi: 10.1007/s40011-019-01143-4	-	2.0	1
97.	Peter RM, Verma AK, Saharan N, Tiwari VK, Thomas RM (2019) Optimizing pearlspot, *Etroplus suratensis* (Bloch, 1790) stocking density with tomato (*Solanum lycopersicum*) in recirculating aqaponics system. *Journal of Experimental Zoology, India.* 22(2): 1109-1113.	5.51	5.51	-
98.	Prasad KP, Mary AJ, Dhayanath M (2019) Assessment of incidence of *Enterocytozoon hepatopenaei* (EHP) in *Penaeus vannamei* in Maharashtra and Gujarat. *Journal of Animal Research*. 9 (4): 597-604	6.20	6.20	-
99.	Priyadarshi S, Ojha SN, Sharma A (2019) An Assessment of vulnerability of fishers' livelihood to climate change in coastal Odisha. *Current World Environment*. 14(1): 60-67.	4.98	4.98	-
100.	Qureshi NW, Krishnan M, Ramasubramanian V (2019) Cross impact analysis and data mining variable hierarchy of stakeholder responses for sustainable	7.62	7.62	-

	development of Schizothorax fisheries in Kashmir lakes, India. *Fisheries Management and Ecology*. 5: 1-8.			
101.	Ranjan A, Sahu NP, Deo AD, Kumar S (2019) Solid state fermentation of de-oiled rice bran: Effect on *in vitro* protein digestibility, fatty acid profile and anti-nutritional factors. *Food Research International*. 119: 1-5.	9.58	9.58	2
102.	Rao BM, Kole S, Gireesh-Babu P, Sharma R, Tripathi G, Bedekar MK (2019) Evaluation of persistence, bio-distribution and environmental transmission of chitosan/PLGA/pDNA vaccine complex against *Edwardsiella tarda* in *Labeo rohita*. *Aquaculture.* 500: 385-392.	9.02	9.02	3
103.	Rasal VM, Yadre SG, Shukla SP, Dasgupta S (2019) Temporospatial variation in zooplankton abundance and diversity in the Narmada River near Chutka, Madhya Pradesh, India. *Journal of Entomology and Zoology Studies* 7(5): 716-723	5.53	5.53	-
104.	Rasal VM, Yadrel SG, Shukla SP, Ravi PM, Mishra MK, Munilkumar S, Pal AK, Lakra WK, Dasgupta S (2019) Microalgae Distribution and Diversity in the Narmada River Basin around Chutka, Madhya Pradesh, India. *International Journal of Current Microbiology and Applied Sciences*. 8(9): 1488-1501	5.38	5.38	-
105.	Ratheesh KR, Dineshbabu AP, Singh VV, Jaiswar AK, Shenoy L, Shukla SP, Manju LN, Sreekanth GB (2019) Temporal variations in catch composition of stationary bagnets along Maharashtra coast in relation to environmental factors. *Journal of Experimental Zoology of India*. 22(1): 251-263.	5.51	4.13	-
106.	Raut S, Bharti VS, Ramteke K (2019) Examining the heavy metal contents of an estuarine ecosystem: case study from Maharashtra, India. *Journal of Coastal Conservation*. 23: 977-984.	7.26	7.26	-
107.	Reddy AK, Gauri SS, Chandrakant HM, Ananthan PS, Tiwari VK (2019) Carp culture in salt affected agricultural lands of Maharashtra. *Journal of Indian Fisheries Association*. 46(1): 47-52.	3.12	3.12	-
108.	Remya L, Zacharia PU, Shukla SP, Varghese M, Jaiswar AK, Nazar AKA (2019) Relative condition factor and food and feeding of Jones's pony fish *Eubleekeria jonesi* (James, 1971) from Mandapam waters, Tamilnadu, India. *Indian Journal of Fisheries*. 66(4):30-38	6.28	6.28	-
109.	Roul SK, Kumar R, Rahangdale S, and Jaiswar AK (2019) Extending geographical distribution range of Reef needlefish *Strongylura incisa* (Valenciennes,	-	2.0	-

	1846) (Teleostei: Beloniformes: Belonidae) in the Eastern Indian Ocean with a key to the species of needlefish occurring in the area. *Thalassas: An International Journal of Marine Sciences*. 34 (2): 209-214.			
110.	Sadasivan S, Gurjar U, Shukla SP, Jaiswar AK, Shenoy L Deshmukhe G (2019) Zooplankton abundance and its seasonal distribution in Patalganga estuary, Maharashtra, India. *Journal of Entomology and Zoology Studies*. 7(1): 1156-1160	5.53	5.53	-
111.	Sadasivan S, Shukla SP, Jaiswar AK, Shenoy L, Deshmukhe G, (2019) Study on phytoplankton composition, abundance and the productivity of Patalganga estuary, Maharashtra, India. *International Journal of Fisheries and Aquatic Studies*. 7(4): 411-415.	3.99	3.99	-
112.	Sagar V, Sahu NP, Pal AK, Hassaan M, Jain KK, Salim HS, Kumar V (2019) Effect of different stock types and dietary protein levels on key enzyme activities of glycolysis-gluconeogenesis, the pentose phosphate pathway and amino acid metabolism. *Journal of Applied Ichthyology.* 35(4): 1016-1024.	6.77	6.77	1
113.	Sahoo U, Mahapatra BK, Sawant PB, Sukham MK, Pailan GH, Datta S (2019) Biometric studies of dwarf gourami, *Colisa lalia* (Hamilton, 1822) occurring along river Hoogly, East Coast, India. *International Journal of Advanced Biological Research*. 9(2): 128-132	4.63	4.63	-
114.	Saleh M, Montero R, Kumar G, Sudhagar A, Friedl A, Kollner B, El-Mathouli M (2019) Kinetics of local and systemic immune cell responses in whirling disease infection and resistance in rainbow trout. *Parasites and Vectors*, 12: 249-253.	9.03	6.87	1
115.	Sanjeet DB, Tiwari VK, Reddy AK, PavanKumar A, Babitha Rani AM (2019) Effect on compensatory growth, body composition and Insulin like growth factor gene expression in *Cyprinus carpio*. *Turkish Journal of Fisheries and Aquatic Sciences*. 20(6): 499-50	6.74	6.74	-
116.	Saravanan K, Rajendran KV, Gireesh-Babu P, Purushothaman CS, Makesh M (2019) Molecular characterization and expression analysis of secretory immunoglobulin M (IgM) heavy chain gene in rohu, *Labeo rohita*. *Animal Biotechnology*. 11: 1-3.	7.26	5.20	-
117.	Shameena SS, Kumar K, Kumar S, Kumar S, Rathore G. (2020) Virulence characteristics of *Aeromonas veronii* biovars isolated from infected freshwater goldfish (*Carassius auratus*). *Aquaculture*. 518:734819.	9.02	9.02	-

118.	Sharma A, Dhenuvakonda K (2019) Virtual fisheries through mobile apps: The way forward. *Journal of Entomology and Zoology*, 7(6): 1093-1099 (5.53, NA)	5.53	5.53	-
119.	Sharma A, Sethulakshmi (2019) Assessment of occupational hazards and usage of sea safety devices by fishers of Kerala, India. *Journal of Agromedicine*, 24(3): 374-380.	7.32	7.32	-
120.	Sibina M, Jaiswar AK, Panikkar P, Behera BK, Kumar SH, Roshit CM, Vijaykumari ME, Sharma SK, Manna RK, Das BK (2019) Length-weight relationship and relative condition factor of five *Labeo* spp. from river Cauvery in India. *Indian Journal of Fisheries*. 66(2):115-119.	6.26	6.26	-
121.	Singh AK, Shukla SP, Neeraj K, Saurav K, Kundan K (2019) Application of low magnitude electric charge enhanced arsenic removal from water: a study on a newly designed column bed. *Journal of Experimental Zoology, India*. 22(2): 927-931	5.51	5.51	-
122.	Singh DK, Gupta S, Sahu NP, Srivastava PP, Sardar P, Deo AD, Md Aklakur (2019) Chemical composition of Berseem (*Trifolium alexandrinum*) leaf meal and leaf protein concentrate. *Journal of Entomology and Zoology Studies*. 7(4): 1418-1421.	5.53	5.53	-
123.	Singh R, Pandey NN, Tiwari VK, Gupta M, Ganie PA, Prakash C, Babitha Rani AM (2019) Histological assessment of gonadal cyclicity of *Chagunius chagunio*. *Journal of Entomology and Zoology Studies*. 7(5): 391-395.	5.53	4.15	-
124.	Singh S, Reddy AK, Srivastava PP, Lakra WS (2019) Influence of different salinity on carcass composition of amur carp (*Cyprinus Carpio haematopterus*) reared in semi-arid region of India. *Journal of Experimental Zoology, India.* 22 (1): 633-637 (	5.51	5.51	1
125.	Singh SK, Tiwari VK, Chadha NK, Kumar SM, Prakash C, Nilesh A (2019) Effect of dietary synbiotic supplementation on growth, immune and physiological status of *Labeo rohita* juveniles exposed to low pH stress. *Fish & Shellfish Immunology*. 91: 358-368.	9.30	9.30	-
126.	Sontakke R, Chaturvedi CS, Saharan N, Tiwari VK, Haridas H, Babitha Rani AM (2019) Growth response, digestive enzyme activity and stress enzyme status in early stages of an endangered fish, *Notopterus chitala* (Hamilton, 1822) fed with live feed and formulated diet. *Aquaculture*. 510:15, 182-190	9.02	9.02	-
127.	SriHari M, Bhutia RN, Kathirvelpandian A, Sharma R, Ramteke KK, Sreekanth GB, Abidi ZJ (2019) Differentiation in morphometric traits of *Chanos chanos*	6.30	6.30	-

	(Forsskål, 1775) stocks along Indian coast. *Indian Journal of Geo-Marine Sciences*. 48(02): 233-238			
128.	SriHari M, Dhanya M, Sreekanth GB, Jaiswar AK (2019) Length-weight relationship of 11 fish species from tropical estuarine ecosystem from central west coast of India. *Journal of the Marine Biological Association of India*. 61(2):110-113.	5.28	5.28	-
129.	SriHari M, Gladston Y, Ajina SM, Sreekanth GB, Raghavan R, Jasiwar AK (2019) Demographics of an endemic and threatened small cyprinid, *Pethia setnai* from the Northern Western ghats, India. *Marine and Freshwater Research*. doi.org/10.1071/MF19122	8.0	2.0	-
130.	SriHari M, Jose N, Gangan SS, Viswambaram D, Jaiswar AK (2019) First record on the absence of anal fin in the white sardine, *Escualosa thoracata* (Valenciennes, 1847) from Indian waters. *Indian Journal of Geo-Marine Sciences*. 48(10), 1521-1523.	6.30	6.30	-
131.	SriHari M, Kathrivelpandian A, Sreekanth GB, Sajina AM, Gangan SS, Abidi ZJ (2019) Deciphering the stock structure of *Chanos chanos* (Forsskål, 1775) in Indian waters by truss network and otolith shape analysis. *Turkish Journal of Fisheries and Aquatic Science*. 20(2): 1-18.	6.74	6.74	-
132.	Sudhagar A, Ertl R, Kumar G, El-Mathouli M (2019) Transcriptome profiling of posterior kidney of brown trout, *Salmo trutta*, during proliferative kidney disease. Parasites and Vectors, 12: 569	9.16	9.16	1
133.	Sukhdhane KS, Kripa V, Shukla SP, Sreenath KR, Damodaran D, Vase VK (2019) Assessment of marine litter along four sandy beaches of Saurashtra Coast, Gujarat, India. *International Journal of Current Microbiology and Applied Sciences*. 8(6): 2623-32.	5.51	4.03	-
134.	Sukhdhane KS, Pandey PK, Ajima MN, Jayakumar T, Vennila A, Raut SM (2019) Isolation and characterization of phenanthrene-degrading bacteria from PAHs contaminated mangrove sediment of Thane Creek in Mumbai, India. *Polycyclic Aromatic Compounds*. 39(1):73-83.	7.24	6.00	4
135.	Suma D, Manjusha L, Kumar S, Rajendran KV, Sibnarayanan DR, Nayak BB (2019) Effect of sodium hypochlorite on biofilm-forming ability of histamine-producing bacteria isolated from fish. *Journal of Food Protection*, 82 (8): 1417-1422	7.56	7.56	1
136.	Sushila NG, Das BK, Mir IN, Rout AK, Prasad KP, Tripathi G. (2020) Cloning, characterization and ontogenetic expression profile of RAG-2 and IgM in angelfish (*Pterophyllum scalare*). *Gene.* 739:144496.	8.64	8.64	-

137.	Sushila NG, Das BK, Prasad KP, Babu PG, Sawant PB, Tripathi G (2019) Studies of marker for the development of adaptive immune system during the larval ontogeny of angelfish. *Journal of Entomology and Zoology Studies*. 7: 772-775	5.51	5.51	-
138.	Thilakan AP, Kumar K, Shukla SP, Kumar S, Saharan N, Karmakar S (2019) Occurrences of triclosan in Versova creek of Mumbai, India and its toxicity on selected aquatic organisms. *Journal of Experimental Zoology, India*. 22(2): 737-42	5.51	5.51	-
139.	Thilakan AP, Pandey PK, Manju Lekshmi N, Shukla SP, Sreekanth GB (2019) Effect of biofloc on water quality and growth performance of *Etroplus suratensis* (Bloch, 1790). *Journal of Entomology and Zoology Studies*. 7(1): 1287-1291	5.53	5.53	1
140.	Thomas RM, Verma AK, Prakash C, Krishna H, Prakash S, Kumar A (2019) Utilization of inland saline underground water for bio-integration of Nile tilapia (*Oreochromis niloticus*) and spinach (*Spinacia oleracea*). *Agricultural Water Management*, 222: 154-160.	9.54	9.54	-
141.	Thomas SM, Purayil SBP, Chadha NK, Kandiyil AP, Kavungal V, Joseph I, Sawant PB, Abhijith R (2019) The annual reproductive cycle and sex inversion of the Picnic seabream, *Acanthopagrus berda* (Forsskål 1775) from Indian waters: Histological and morphometric description. *Aquaculture Research.* 50(10): 2917-2931.	7.50	7.50	-
142.	Thongam C, Roy D, Sibnarayan, Chadha, N, Dube K, Sharma A, Singh, SK (2019) Cynodondactylon methanol extract potentiates stress mitigation in response to acidic stress in *Labeo calbasu* fingerlings. *The Indian journal of Animal Sciences*. 89: 107-115. (6.8, 0.279)	6.23	6.23	-
143.	Vaisakh G, Chakraborty SK, Jaiswar AK, Sibina MS, Renjith RK, Sreekanth GB (2019) Stock structure analysis of *Nemipterus bipunctatus* (Valenciennes, 1830) from three locations along the Indian coast. *Indian Journal of Geo Marine Sciences*. 48 (12): 1888-1895.	6.30	6.30	-
144.	Varghese T, Kumar VR, Anand G, Dasgupta S, Pal AK (2019) Dietary GABA enhances hypoxia tolerance of a bottom-dwelling carp, *Cirrhinus mrigala* by modulating HIF-1α, thyroid hormones and metabolic responses. *Fish Physiology and Biochemistry*. 21: 1-4.	7.74	7.74	-
145.	Varghese T, Mishal P, Gupta G, Kumar M, Pal AK, Dasgupta S (2019) Temporal changes in behavioural responses and serum metabolites of *Cirrhinus mrigla*	6.56	6.56	-

	exposed to acute hypoxia. *Journal of Environmental Biology*. 40(4):641-647.			
146.	Velumani T, Ananthan PS, Krishnan P, Lloyd C (2019) Research on climate change and fisheries: A scientometric analysis. *International Journal of Current Microbiology and Applied Sciences*, 8(08): 336-345,	5.38	5.38	-
147.	Yadav VK, Jahageerdar S, Adinarayana J (2019) A comparison of different fuzzy inference systems for prediction of catch per unit of effort (CPUE) of fish. *Indian Journal of Geo-Marine Sciences* 48: 60-69.	6.30	6.30	-
148.	Yadav VK, Jahageerdar S, Adinarayana J (2019) Validation of chlorophyll-a and sea surface temperature concentration and their relationship with the parameters- diffuse attenuation coefficient and photosynthetic active radiation using MODIS data: A case study of Gujarat coastal region. *Indian Journal of Geo-Marine Sciences.* 48(09): 1370-1376	6.30	6.30	-
	Total	**977.79**	**967.99**	**54**

	2018-19				
1.	Acharya AP, Pavan-Kumar A, Gireesh-Babu P, Joshi CG, Chaudhari A, Krishna G (2019) Population genetics of Indian giant river-catfish, *Sperata seenghala* (Sykes, 1839) using microsatellite markers. *Aquatic Living Resources* 32(4): 43-48.	6.86	6.86		1
2.	Agarwal D, Gireesh-Babu P, Pavan-Kumar A, Koringa P, Joshi CG, Gora AH, Bhat I, Chaudhari A (2018) Molecular characterization and expression profiling of 17-beta-hydroxysteroid dehydrogenase 2 and spermatogenesis associated protein 2 genes in endangered catfish, *Clarias magur* (Hamilton, 1822). *Animal Biotechnology doi.org/10.1080/10495398.2018.1545663*.	7.26	7.26		-
3.	Ahirwal SK, Jaiswar AK, Chakraborty SK (2018) Diet composition of oil sardine, *Sardinella longiceps* (Val. 1847) from Mumbai waters of Maharashtra, India. *Indian Journal of Geo-Marine Science* 47 (9): 1880-1887.	6.30	4.72		1
4.	Ahmad I, Dhanashree DJ, Balasinor NH, Rani B, Bhat IA, Chadha NK, Dube K, Saharan N (2018) Inhibin anti-peptide antibody macromolecule: An Approach to improve fecundity in *Clarias batrachus*. *International Journal of Biological Macromolecules* 120: 195-202.	10.78	10.78		3
5.	Ahmad Z, Deo AD, Kumar S, Ranjan A, Aklakur MD, Sahu NP (2019) Effect of replacement of de-oiled rice bran with sweet potato leaf meal on growth performance, digestive enzyme activity and body composition of *Labeo rohita* (Hamilton, 1822). *Indian Journal of Fisheries* 66(1): 73-80.	6.26	6.26		1
6.	Ahmed I, Bhat I, Jagtap A, Balasinor D, Kumar NS, Chanu TI, Rani B, Dar S, Leya T, Gora A, Saharan N (2018) Computational and biological approach for studying structure-function of inhibin chimeric peptide antibodies in *Clarias batrachus*. *Aquaculture* 501: 153-60.	9.02	9.02	-	
7.	Archana C, Saharan N, Rathore G, Srivastava PP, Rani B, Pandey PK (2018) Isolation and characterization of potential pendimethalin degrading bacteria from pesticides polluted soil. *Journal of Entomology and Zoology Studies* 6(4): 1842-1848.	5.53	5.53	-	
8.	Ashutosh M, Chakraborty SK, Jaiswar AK, Sharma A (2018) Length-weight relationship of dominant fish species of two medium reservoirs of Uttarakhand, India. *Indian Journal of Fisheries* DOI 10.21077/ijf.2018.65.1.43179-16.	6.26	6.26	-	

9.	Ayyappan MV, Balange AK, Nayak BB, Kumar S (2018) Distribution of potentially pathogenic *Vibrio parahaemolyticus*in seafood and the aquatic environment of Mumbai, India. *Fishery Technology* 55 (3): 45-51.	5.25	5.25	-
10.	Basha KA, Joseph T, Lalitha KV, Prasad KP (2018) Nitrification potential of *Achromobacter xylosoxidans* isolated from freshwater finfish farms of Kerala, India. *International Journal of Current Microbiology and Applied Sciences* 7(8): 2645-2654.	5.38	4.04	-
11.	Bedekar MK, Soman P, Kole S, Anand D, Tripathi G, Makesh M, Rajendran KV (2018) Evaluation of interferon gamma (IFN-γ) of *Labeo rohita* as an immunomodulator: *in vitro* expression model. *Aquaculture International* 26(6):1401-13.	7.46	7.46	1
12.	Bharti VS, Inamdar AB, Purusothaman CS, Yadav VK (2018) Soft computing and statistical technique – application to eutrophication potential modelling of Mumbai coastal area. *Indian Journal of Geo-Marine Sciences* 42(02): 365-377.	6.30	6.30	1
13.	Bhat IA, Ahmad I, Nazir MI, Bhat RAH, Gireesh-Babu P, Goswami M, Sundaray JK, Sharma R (2018) Chitosan-eurycomanone nanoformulation acts on steroidogenesis pathway genes to increase the reproduction rate in fish. *Journal of Steroid Biochemistry and Molecular Biology* 185: 237-247.	9.79	9.79	1
14.	Bhuvaneswari GR, Purushothaman CS, Pandey PK, Gupta S, Kumar SH, Shukla SP (2018) Toxicological effects of chlorpyrifos on growth, chlorophyll a synthesis and enzyme activity of a Cyanobacterium *Spirulina* (Arthrospira) *platensis*. *International Journal of Current Microbiology and Applied Sciences* 7(6): 2980-2990.	5.38	5.38	-
15.	Chandran R, Tyagi LK, Jaiswar AK, Raizada S, Mandal S, Mayaker T, Bhist A, Singh SK (2018) Fisher's outlook and perception towards fishery resources of river Ib. *Journal of Community Mobilization and Sustainable Management* 13(1): 79-83.	5.30	4.02	-
16.	Chandran R, Tyagi LK, Jaiswar AK, Raizada S, Mandal S, Mayekar TS, Bisht AS, Singh SK, Lakra WS (2019) Diversity and distribution of fish fauna in the Ib river, a tributary of Mahanadi, India. *Indian Journal of Fisheries* 66(1): 10-14.	6.26	4.70	-
17.	Chowdhury DK, Sardar P, Kumar S, Varghese T, Singha KP, Maiti MK (2019) Phospholipid: an essential nutrient for fish larvae. *Journal of Experimental Zoology, India* 22 (1): 1-5.	5.51	5.51	-

18.	Chowdhury LM, Kathirvelpandian A, Divya PR, Basheer VS, Shanis R, Chelath M, Pavan-Kumar A, Krishna G (2018) Molecular identification and phylogenetic assessment of species under genus *Parapenaeopsis* Alcock, 1901, from Indian waters. *Mitochondrial DNA A: DNA Mapping and Sequence Analysis* 30(2): 191-200.	6.00	4.50	-
19.	Daniel N, Muralidhar AP, Srivastava PP, Jain KK, Prasad KP, Anandan R, Manish J (2018) Influence of vitamin C on hematology of *Pangasianodon hypophthalmus* (Sauvage, 1878) juveniles during pre and post-challenge with *Aeromonas hydrophila* (Chester, 1901). Fishery Technology 55: 120-127.	5.25	5.25	-
20.	Daniel N, Pavan-Kumar A, Kathirvelpandian A, Praveenraj J, Damroy S, Chaudhari A (2019) First record of whitebarred goby *Amblygobius phalaena* (Valenciennes, 1837) from Indian waters. *Indian Journal of Fisheries* 65(3): 116-121.	6.26	6.26	-
21.	Dar SA, Srivastava PP, Varghese T, Nazir MI, Gupta S, Krishna G (2019) Temporal changes in superoxide dismutase, catalase, and heat shock protein 70 gene expression, cortisol and antioxidant enzymes activity of *Labeo rohita* fingerlings subjected to starvation and refeeding. *Gene* 692: 94-101.	8.64	8.64	4
22.	Das R, Priyadarshi H, Prakash S, Debnath C, Sahoo L, Singh A, Devi CB, Das SK (2018) Induction of spontaneous captive spawning, embryonic development and larval rearing in *Mystus cavasius*. *International Journal of Current Microbiology and Applied Sciences* 7 (4): 652-658.	5.38	5.38	-
23.	Das UN, Singh AS, Lekshmi M, Nayak BB, Kumar S (2019) Characterization of blaNDM-harboring, multidrug-resistant Enterobacteriaceae isolated from seafood. *Environmental Sciences and Pollution Research* 26(3): 2455-2463.	8.91	8.91	-
24.	Dennies LB, Kumar M, Pailan GH, Singh DK, Bisawal, Udit UK (2018) Effect of Dietary supplementation of*Zingiber officinale* (Ginger) on growth and nutrient utilization of *Cyprinus carpio* (Linnaeus, 1758). *Journal of Experimental Zoology, India* 21(2): 849-853.	5.51	5.51	-
25.	Devi MS, Singh VV, Edwin L, Xavier KAM, Shenoy L (2018) Structural changes in mechanised trawl fleet along Maharashtra coast, India. *Current Journal of Applied Science and Technology* 28(1): 1-12.	5.32	5.32	-
26.	Devi MS, Singh VV, Xavier MKA, Shenoy L (2019) Catch composition of trawl landings along Mumbai Coast, Maharashtra. *Fishery Technology* 56: 89-92.	5.25	5.25	-

27.	Don S, Xavier KAM, Devi ST, Nayak BB, Nagalakshmi K (2018) Identification of potential spoilage bacteria in farmed shrimp (*Litopenaeus vannamei*): Application of Relative Rate of Spoilage models in shelf life-prediction. *LWT - Food Science and Technology* 97: 295 – 301.	9.71	9.71	15
28.	Dutta S, Ray SK, Pailan GH, Suresh VR, Dasgupta S (2019) Alteration in branchial NKA and NKCC ion-transporter expression and ionocyte distribution in adult hilsa during up-river migration. *Journal of Comparative Physiology* B 189(1): 69-80.	8.0	2.0	-
29.	Fahal EM, Saharan N, Rani B, Aklakur MD, Chanu TI (2018) Qualitative analysis of some important phytochemical constituents of *Moringa oleifera* (Lam) leaves and seeds. *International Journal of Chemical Studies* 6(3): 648-650.	5.31	3.98	-
30.	Gameredinn Y, Saharan N, Prakash G, Tiwari VK (2019) Qualitative and quantitative Phytochemical Analysis of Moringa oleifera (Lam) Pod. *International Journal of Current Microbiology and Applied Sciences* 7(5): 657-665.	5.38	4.03	4
31.	Gangan SS, Jaiswar AK, Pavan-Kumar A, Jahageerdar S, Lakra WS, Krishna G (2018) A report on anomalies in pelvic fin and pectoral filament of two species of genus *Setipinna* (Swainson, 1839) from east coast of India. *Indian Journal of Geo-marine Sciences* 47 (9): 1893-1898.	6.30	6.30	-
32.	Gangan SS, Pavan-Kumar A, Jaiswar AK (2019) Multigene barcoding and phylogeny of selected Engraulidae species. *Mitochondrial DNA Part A: DNA Mapping, Sequencing, and Analysis* 30(3): 548-555.	6.00	6.00	-
33.	Garg CK, Sahu NP, Shamna N, Deo AD, Fawole FJ, Kumar S, Maiti MK (2019) Effect of dietary *Houttuynia cordata* leaf meal and leaf extract on the growth performance, nutrient utilization and expression of IGF-I gene in *Labeo rohita*. *Aquaculture Nutrition* 25(3): 702-711.	8.10	8.10	1
34.	Gautam P, Ananthan PS, Subramanian R, Sharma A, Jha BK (2018) Assessment of fisheries and management in Rihand reservoir, Uttar Pradesh. *Current Agriculture Research* 6(3): 378-389.	4.36	4.36	-
35.	Ghosh A, Dana SS, Sharma A, Das SK (2018) A study on consumer preference and satisfaction towards ready to eat fish products of West Bengal State's Fishermen Cooperative Federation. *Fishery Technology* 55: 282-287.	5.25	5.25	1

36.	Gita S, Shukla SP, Prakash C, Saharan N, Deshmukhe G (2019) Evaluation of toxicity of a textile dye (optilan red) towards a green microalga *Chlorella vulgaris*. *International Journal of Current Microbiology and Applied Sciences* 7(8): 3346-3355.	5.38	5.38	-
37.	Gita S, Shukla SP, Saharan N, Prakash C, Deshmukhe G (2019) Toxic effects of selected textile dyes on elemental composition, photosynthetic pigments, protein content and growth of a freshwater Chlorophycean alga *Chlorella vulgaris*. *Bulletin of Environmental Contamination and Toxicology* 102(6): 795–801.	7.48	7.48	6
38.	Gladston Y, Xavier KAM, Ajina SM, Kumar R, Pravesh O, Devi MS, Thakurdas, Chakraborty SK, Shenoy L (2018) Operational performance and catch composition of pomfret gillnets of Maharashtra, India. *Regional Studies in Marine Science* 22: 31–37.	7.46	7.46	1
39.	Gora AH, Sahu NP, Sahoo S, Rehman S, Dar SA, Ahmad I, Agarwal D (2018) Effect of dietary *Sargassum wightii* and its fucoidan-rich extract on growth, immunity, disease resistance and antimicrobial peptide gene expression in *Labeo rohita*. *International Aquatic Research* 10(2): 115-131.	-	1.5	7
40.	Haldar C, Das SP, Pillai BR, Pavan-Kumar A, Gireesh-Babu P, Das P, Chaudhari A (2019) Single-nucleotide polymorphisms linked to body weight revealed in growth selected *Macrobrachium rosenbergii*. *Aquaculture International doi.org/10.1007/s10499-018-0334-3.*	7.46	7.46	-
41.	Hassan MA, Raghuvaran D, Xavier KAM, Gupta S, Nayak BB, Balange AK (2018) Evaluation of the properties of spray dried visceral protein hydrolysate from *Pangasianodon hypophthalmus* (Sauvage, 1978) extracted by enzymatic and chemical methods. *Waste and Biomass Valorization doi: 10.1007/s12649-018-0302-1*.	8.36	8.36	4
42.	Hassan MA, Xavier KAM, Gupta S, Nayak BB, Balange AK (2019) Antioxidant properties and Instrumental quality attributes of spray dried visceral protein hydrolysate prepared by enzymatic and chemical methods. *Environmental Science and Pollution Research* 26(9): 8875–8884.	8.91	8.91	1
43.	Hauzoukim, Xavier KAM, Nagalakshmi K, Balange AK, Venkateshwarlu G (2019) Development of enrobed fish products: Improvement of functionality of coated materials by added aquatic polymers. *Journal of Food Process Engineering* 42(3): 12999-13005.	7.45	7.45	1

44.	Hoilenting, Sharma P, Borah BC, Sharma R (2018) Hygienic fish market to promote fish business vis-a-vis socio-economic upliftment in Lakhimpur, Assam: A case study. *Agri Business in Assam* 5(1): 33-39.	-	-	-
45.	Jasmin F, Muktha M, Ghosh S, Mohamed SK, Jaiswar AK, Laxmilatha P, Shenoy L (2018) Fishery and stock status of cuttlefishes off Andhra coast, India with focus on the needle cuttlefish *Sepia aculeata* Van Hasselt, 1835, *Indian Journal of Fisheries* 65(2): 26-32.	6.26	4.70	-
46.	Jayant M, Hassan MA, Srivastava PP, Meena DK, Kumar P, Kumar A, Wagde MS (2018) Brewer's spent grains (BSGs) as feedstuff for striped catfish, *Pangasianodon hypophthalmus*fingerlings: An approach to transform waste into wealth. *Journal of Cleaner Production* 199: 716-722.	12.40	12.40	3
47.	Jeena K, Krishnan R, Shyam KU, Gireesh Babu P, Lakra WS, Purushothaman CS, Prasad KP (2018) Dynamics of infection in selected tissues of White Spot Syndrome Virus-infected *Litopenaeus vannamei International Journal of Current Microbiology and Applied Sciences* 7(6): 3003-3008.	5.38	5.38	1
48.	Jousy N, Jahageerdar S, Prasad JK, GireeshBabu P, Krishna G (2018) Body weight at harvest and its heritability estimate in *Clarias magur* (Hamilton, 1822) reared under mono and polyculture systems. *Indian Journal of Fisheries* 65(2): 82-88.	6.26	6.26	-
49.	Karthireddy S, Lakra WS, Chadha NK, Sahu NP, Prasad KP, Muralidhar AP (2018) Immuno-physiological response of *Litopenaeus vannamei* in oil palm kernel meal based biofloc systems. *Indian Journal of Animal Sciences* 88(11): 1329–1332.	6.23	6.23	-
50.	Keluskar R, Ghosh S, Mani MK, Nayak BB (2019) Application of a rotating biological contactor and moving bed biofilm reactor hybrid in bioremediating surimi processing wastewater. *Proceedings of the National Academy of Sciences, India Section B: Biological Sciencesdoi: 10.1007/s40011-019-01074-0*.	-	2.0	-
51.	Kharatmol BR, Shenoy L, Singh VV, Landge AT, Mohite AS (2018) Catch efficiency of trawlers off Ratnagiri coast of Maharashtra, India. *The Bioscan* 13(1): 67-72.	5.26	5.26	-
52.	Khot M, Sivaperumal P, Jadhav N, Chakraborty SK, Pawase A, Jaiswar AK (2018) Diversity and composition of phytoplankton around proposed nuclear power plant site Jaitapur, Maharashtra. *Indian Journal of Geo-Marine Science* 47(12): 2429-2441.	6.30	6.30	-

53.	Khot M, Sivaperumal P, Jadhav N, Chinnaesakki S, Bara SV, Ravi PM, Chakraborty SK, Pawase A, Jaiswar AK (2018) Baseline radionuclide concentration in selected marine organisms around Ratnagiri and Sindhudurg district, west coast of Maharashtra, India. *Marine Pollution Bulletin* 135: 1051-1054.	9.78	9.78	-
54.	Kokkattunivarthil S, Krishnan R, Kezhedath J, Prasad KP (2018) New set of PCR primers for SYBR green-based qPCR detection of IMNV in India. *Aquaculture* 495: 726-730.	9.02	9.02	-
55.	Krishnan R, Jeena K, Prasad KP (2018) Preliminary investigations on the role of Drp-1 dependent mitochondrial fission in attenuating RLR downstream signaling during nervous necrosis virus infection. *Fish and Shellfish Immunology* 80: 618-623.	9.30	9.30	-
56.	Krishnan R, Zahoor M, Jeena K, Vismai NT, Prasad KP (2019) Interferon-regulatory factors, IRF3 and IRF7 in Asian seabass, *Lates calcarifer*: Characterization, ontogeny and transcriptional modulation upon challenge with nervous necrosis virus. *Fish & Shellfish Immunology*89: 468-76.	9.30	9.30	2
57.	Kumar A, Reddy AK, Rani B, Rathore G, Lakra WS (2018) Growth and digestive enzymatic activity of *Litopenaeus vannamei* raised in biofloc systems with different C/N ratios in ground saline water. *Journal of Entomology and Zoology Studies* 6(4): 1166-1171.	5.53	5.53	-
58.	Kumar M, Basumatary G, Ram RK, Singh DK, Udit UK (2018) Comparative studies on kisspeptin receptor and their physicochemical characterization. *International Journal of Current Microbiology and Applied Sciences* 7: 2319-2326.	5.38	5.38	3
59.	Kumar N, Krishnani KK, Gupta SK, Sharma R, Baitha R, Singh DK, Singh NP (2018) Immuno-protective role of biologically synthesized dietary selenium nanoparticles against multiple stressors in *Pangasinodon hypophthalmus*. *Fish and Shellfish Immunology* 78: 289–298.	9.30	6.98	12
60.	Kumar N, Krishnani KK, Kumara P, Sharma R, Baitha R, Singh DK, Singh NP (2018) Dietary nano-silver: Does support or discourage thermal tolerance and biochemical status in air-breathing fish reared under multiple stressors. *Journal of Thermal Biology* 77: 111-121.	7.90	5.92	2

61.	Kumar N, Sharma JG, Singh SP, Singh A, Hari-Krishna V, Chakrabarti R (2019) Validation of growth enhancing, immunostimulatory and disease resistance properties of *Achyranthes aspera* in *Labeo rohita* fry in pond conditions. Heliyon 5(2): 12-16.	-	1.5	1
62.	Kumar P, Jain KK, Sardar P (2018) Effects of dietary synbiotic on innate immunity, antioxidant activity and disease resistance of *Cirrhinus mrigala* juveniles. *Fish and Shellfish Immunology*, 5: 124-132.	9.30	9.30	12
63.	Kumar P, Wisdom KS, Bhat IA, Pathakota GB, Nayak SK, Reang D, Nagpure NS, Sharma R (2019) Molecular characterization of gonadotropin-inhibitory hormone (GnIH) gene and effect of intramuscular injection of GnIH peptide on the reproductive axis in *Catla catla*. *Animal Biotechnology doi: 10.1080/10495398.2019.1597730*	7.26	7.26	2
64.	Kumar R, Dineshbabu AP, Jaiswar AK, Shenoy L, Kumar AP, Rahangdale S, Vase VK, Damodaran D (2019) New distributional records for cardinalfishes (Perciformes/ Apogonidae) from north east Arabian Sea, Western Indian ocean. *Thalassas: An International Journal of Marine Sciences* 5: 1-6.	-	1.5	-
65.	Kumar R, Xavier KAM, Lekshmi M, Balange AK, Venkateshwarlu G (2018) Fortification of extruded snacks with chitosan: Effects on techno-functional and sensory quality. *Carbohydrate Polymers* 194: 267–273.	12.04	12.04	10
66.	Kumar S, Krishnani KK, Gramopadhye S, Bharat B, Rajagopal V (2018) Phylogenetic analysis of diverse uncultured eubacterial groups from saline-alkaline soil of basaltic terrain in western Maharashtra, India. *Research Journal of Biotechnology* 13: 11-15.	5.0	5.0	-
67.	Kumar S, Prakash C, Chadha NK, Gupta SK, Jain KK, Pandey PK (2018) Effects of dietary alginic acid on growth and haemato-immunological responses of *Cirrhinus mrigala* (Hamilton, 1822) fingerlings. *Turkish Journal Fisheries and Aquatic Sciences* 19(5): 373-82.	6.74	6.74	1
68.	Kumar S, Sahu NP, Deo AD, Ranjan A (2019) Feeding de-oiled rice bran based diet with varying level of protein and lipid: Effect on physiological responses of *Labeo rohita*. *Aquaculture* 498: 454-463.	9.02	9.02	5
69.	Kumar S, Sahu NP, Deo AD, Ranjan A (2019) Solid state fermentation of de-oiled rice bran: Effect on in vitro protein digestibility, fatty acid profile and anti-nutritional factors. *Food Research International* 119: 1-5.	9.58	9.58	2
70.	Kumar S, Sahu NP, Ranjan A (2018) Feeding de-oiled rice bran (DORB) to rohu, *Labeo rohita*: Effect of varying dietary protein and lipid level on growth, body composition, and insulin like growth factor (IGF)	9.02	9.02	12

	expression. *Aquaculture* 492: 52-66.			
71.	Kumar S, Sahu NP, Ranjan A, Gupta S, Sardar P, Kumar M, Gupta G (2019) Optimization of deoiled rice bran inclusion level in the diet of *Labeo rohita*: Effect on growth performance, nutrient utilization, insulin-like growth factors I and II gene expression. *Aquaculture Nutrition* 25(2): 477-485.	8.10	8.10	3
72.	Kumar V, Kumar K, Raman RP, Prasad KP, Kumar N, Kumar S, Roy S (2018) Evaluation of cellular induction, soluble components of proteins and expression of pro-inflammatory genes in *Labeo rohita* fingerlings. *Journal of Environmental Biology* 39(4): 486-492.	6.56	6.56	1
73.	Kumari S, Tiwari VK, Kumar R, Rani B, Prakash S (2018) Effect of feeding rate on growth, survival and cannibalism in striped snakehead, *Channa striata* (Bloch, 1793) fingerlings. *Journal of Experimental Zoology, India* 21(1): 205-210.	5.51	5.51	-
74.	Lekshmi M, Das O, Kumar S, Nayak BB (2018) Occurrence of human enterovirus in tropical fish and shellfish and their relationship with fecal indicator bacteria. *Veterinary World* 11(9): 1285-1290.	5.71	5.71	-
75.	Lekshmi NM, Sreekanth GB, Singh NP, Vennila A, Kumar RR, Pandey PK (2018) Variations in phytoplankton assemblages in different aquaculture systems in coastal waters of Goa. *Indian Journal of Geo Marine Sciences* 47(1): 35-45.	6.30	6.30	3
76.	Lingam SS, Sawant PB, Chadha NK, Prasad KP, Muralidhar A, Syamala K, Xavier MA (2018) Effect of stunting on carcass quality characteristics of milkfish, *Chanos chanos* (Forsskal, 1775), reared under pond conditions. *Aquaculture Research* 49(11): 3491-3497.	7.50	7.50	4
77.	Meher PK, Singh DK, Kumar B, Kumar S, Biswal A, Dey A, Thakuria J, Hussan A, Baruah A, Udit UK (2018) Present status, abundance and threats of fish diversity on ramsar site (East Kolkata Wetlands) of West Bengal, India. *International Journal of Current Microbiology and Applied Sciences* 7(07): 4000-4007.	5.38	5.38	2
78.	Meshram S, Deo AD, Kumar S, Aklakur M, Sahu NP (2018) Replacement of de-oiled rice bran by soaked and fermented sweet potato leaf meal: Effect on growth performance, body composition and expression of insulin-like growth factor I in *Labeo rohita* (Hamilton), fingerlings. *Aquaculture Research* 49 (8): 2741-2750.	7.50	7.50	6
79.	Mir IN, Bhat IA, Dar SA, Jain KK, Varghese T, Kumari R, Muralidhar AP (2019) Expression of alpha-amylase and growth-related genes during early larval developmental stages of *Clarias magur*. *Aquaculture* 507: 69-74.	9.02	6.76	2

80.	Mir IN, Sahu NP, Sushila N (2018) Stress mitigation of fucoidan-based nutraceuticals in *Labeo rohita* fingerlings challenged with *Aeromonas hydrophila*. *Journal of Entomology and Zoology Studies* 6(5): 49-56.	5.53	4.15	-
81.	Mushtaq Z, Krishnan R, Prasad KP, Bedekar MK, Kumar AP (2018) Molecular cloning, characterization and expression profiling of galectin-9 gene from *Labeo rohita* (Hamilton, 1822). *Fish & Shellfish Immunology* 76: 287-292.	9.30	9.30	5
82.	Nandanpawar PC, Rather MA, Badhe MR, Sharma R (2018) Assessment of DNA damage during gene delivery in freshwater prawn by chitosan reduced gold nanoparticles. *Oriental Journal of Chemistry* 34(2): 45-49.	5.05	3.78	2
83.	Neha S, Patiyal RS, Dube K, Tiwari VK, Mir JI (2018) First attempt of captive breeding, embryonic and larval development of *Barilius bendelisis* (Hamilton 1807). *Indian Journal of Animal Sciences* 3502: 1-7.	6.23	6.23	-
84.	Nuwansi KKT, Verma AK, Rathore G, Prakash C, Chandrakant MH, Prabhath GPWA (2019) Utilization of phytoremediated aquaculture wastewater for production of Koi carp (*Cyprinus carpio* var. koi) and gotukola (*Centella asiatica*) in an aquaponics system. *Aquaculture* 507: 361-369.	9.02	9.02	4
85.	Nuwansi, KKT, Verma AK, Prakash C, Prabhath GPWA, Peter RM (2018) Performance evaluation and phytoremediation efficiency of selected aquatic macrophytes on aquaculture effluent. *Journal of Entomology and Zoology Studies* 6(2): 2885-2891.	5.53	5.53	-
86.	Pandey AK, Shukla BN, Chadha NK, Dube K, Sawant PB (2018) Histo-morphological changes in gonadotrophs of Indian Major Carp, *Labeo rohita* (Hamilton, 1822) in relation to ovarian maturation. *Journal of Experimental Zoology, India* 21(2): 933-938.	5.51	4.13	-
87.	Pandey M, Jaiswar AK, Deshmukhe G (2018) Occurrence of sea anemone larvae in the estuarine area of Vasai Creek, Maharashtra, India. *International Journal of Current Microbiology and Applied Sciences* 3: 461-464.	5.38	5.38	-
88.	Paria A, Makesh M, Chaudhari A, Purushothaman CS, Rajendran KV (2018) Nucleotide-binding oligomerization domain-containing protein 1 (NOD1) in Asian seabass, *Lates calcarifer*: Cloning, ontogeny and expression analysis following bacterial infection or ligand stimulation. *Fish & Shellfish Immunology* 79: 153-162.	9.30	9.30	-
89.	Pathak MS, Reddy AK, Kulkarni MV, Harikrishna V, Srivastava PP, Chadha NK, Lakra WS (2018)	5.38	5.38	-

	Histological alterations in the hepatopancreas and growth performance of pacific white shrimp (*Litopenaeus vannamei*, Boone 1931) reared in potassium fortified inland saline ground water. *International Journal of Current Microbiology and Applied Sciences* 7(4): 3531-3542.			
90.	Patil PA, Dube K, Verma AK, Chadha NK, Sundaray JK, Jayasankar P (2019) Growth performance of goldfish, *Carassius auratus* and basil, *Ocimum basilicum* in media bed aquaponics. *Indian Journal of Fisheries* 66(1): 112-118.	6.26	6.26	-
91.	Patil SV, Sharma A (2018) Assessing and prioritizing training needs of shrimp farmers of Palghar District, Maharashtra. *Indian Journal of Ecology* 45(2): 406-410.	4.96	4.96	-
92.	Paul T, Shukla SP, Kumar K, Poojary N, Kumar S (2019) Effect of temperature on triclosan toxicity in *Pangasianodon hypophthalmus* (Sauvage,1878): Hematology, biochemistry and genotoxicity evaluation. *Science of the Total Environment* 668: 104-114.	11.59	11.59	3
93.	Paul TT, Landge A, Sarkar UK, Deshmukh G, Padmakumar KG, Shyam SS, Basheer VS (2018) Length-weight relationship and condition factor of *Dawkinsia filamentosa* (Valenciennes, 1844) in different aquatic habitats. *Journal of the Marine Biological Association of India* 60: 102-104.	5.28	5.28	-
94.	Phulia V, Sardar P, Sahu NP, Sanap BN, Shamna N, Fawole FJ, Gupta S (2018) Effect of detoxification methods on anti-nutritional factors and proximate composition of defatted *Jatropha curcas* kernel meal. *Animal Nutrition and Feed Technology* 18(1): 67-77.	6.31	4.73	2
95.	Ponnusamy K, Sivaperumal P, Sekar V, Verma A, Das S, Munilkumar S, Dasgupta S, Pal AK (2018) Diversity of macrobenthos around Madras Atomic Power Station (MAPS). *Journal of Marine Biology and Aquascape* 27: 1-7.	-	2.0	-
96.	Priyadarshini B, Xavier KAM, Nayak BB, Apang T, Balange AK (2018) Quality characteristics of tilapia surimi: Effect of single washing cycle and different washing media. *Journal of Aquatic Food Product Technology* 27(5): 643-655.	6.68	6.68	-
97.	Qadiri SSN, Makesh M, Rajendran KV, Rathore G, Purushothaman CS (2018) Specific immune response in mucosal and systemic compartments of *Cirrhinus mrigala* vaccinated against *Edwardsiella tarda*: *In vivo* kinetics using different antigen delivery routes. *Journal of the World Aquaculture Society* 34: 565-569.	7.39	7.39	2

98.	Qureshi NW, Krishnan M, Aditya KS (2018) Delphi approach to develop indicators and preferences for restoration of balance in Dal lake Fisheries. *Lakes & Reservoirs: Science, Policy and Management for Sustainable Use* 4: 358-366.	6.20	6.20	-
99.	Qureshi NW, Krishnan M, Wani SA, Ramasubramanian V, Sivaramane N, Sundaramoorthy C (2018) Does information change Attitudes: The case of restoration of indigenous fishery in Dal Lake, Kashmir, India?*Indian Journal of Fisheries* 65(2): 113-118.	6.26	6.26	-
100	Rajagopal V, Malarvizhi P, Choudhary RL, Krishnani KK, Ramesh K, Gopalkrishnan B, Singh NP (2018) Prospects of biochar in climate change mitigation in Indian Agriculture-An analysis. *International Journal of Agricultural Sciences* 10(9): 5905-5910.	4.82	4.82	-
101	Rajesh M, Kamalam BS, Ciji A, Akhtar MS, Pandey N, Gupta S, Sarma D, Sahu NP, Singh AK (2019) Molecular characterisation and transcriptional regulation of muscle growth regulatory factors myogenin and myogenic factor 6 in the Trans-Himalayan cyprinid fish *Schizothorax richardsonii*. *Comparative Biochemistry and Physiology Part A: Molecular & Integrative Physiology* 231: 188-200.	8.14	6.10	-
102	Ramteke KK, Landge AT, Jaiswar AK, Chakraborty SK, Deshmuke G, Renjith RK (2018) Taxonomic differentiation of goatfishes (Family-Mullidae) based on morphological traits and hard parts. *Indian Journal of Geo-Marine Science* 47(02): 381-389.	6.30	6.30	-
103	Ranjan A, Sahu NP, Deo AD, Kumar SH, Kumar S, Jain KK (2018) Comparative evaluation of fermented and non-fermented de-oiled rice bran with or without exogenous enzymes supplementation in the diet of *Labeo rohita* (Hamilton, 1822). *Fish Physiology and Biochemistry* 44(4): 1037–1049.	7.73	7.73	9
104	Ranjith L, Shukla SP, Vinod K, Ramkumar S, Chakraborty SK (2018) Targeting the non-target plant biota: ecological implications of trawl fishery along the Thoothukudi, South East coat of India. *Regional Studies in Marine Sciences* 24: 143-155.	7.46	5.60	1
105	Rao M, Padyana S, Dipin KM, Kumar S, Nayak BB (2018) Antimicrobial compounds of plant origin as efflux pump inhibitors: new avenues for controlling multidrug resistant pathogens. *Journal of Antimicrobial Agents* 4: 155-159.	-	1.5	16

106	Raosaheb SS, Ojha ML, Chanu TI, Saini VP, Sharma A (2018) Effect of water depth with respect to survival of *Clarias magur* (Hamilton, 1822) larvae in two tier larval rearing system. *Journal of Entomology and Zoology Studies* 6(5): 2192-2197.	5.53	4.15	-
107	Rasool I, Jain KK, Sahu NP, Sahoo S, Gora AH, Rehman S, Dar SA (2018) Evaluation of dietary protein to carbohydrate ratio on the growth, conversion efficiencies and body composition of Zebra fish. *Journal of Entomology and Zoology Studies* 6(2): 2254-2258.	5.53	5.53	-
108	Renjith RK, Jaiswar AK, Chakraborty SK, Rajendran KV, Landge AT, Sreekanth GB (2018) First record of anophthalmic large scaled terapon, *Terapon theraps*, Cuvier 1829 in trawl landings from Versova, Mumbai, India. *International Journal of Current Microbiology and Applied Science* 7(5): 429-434.	5.38	4.13	-
109	Roul SK, Kumar R, Jaiswar AK, Retheesh TB, Akhil AR, Prakasan D, Ganga U, Abdussamad EM, Shenoy L, Rohit P (2019) Biometric analysis of the flat needle fish *Ablennes hians* (Valenciennes, 1846) (Pisces: Belonidae) in the South-Eastern Arabian Sea. *Indian Journal of Geo-Marine Science* 48 (4): 457-463.	6.30	6.30	1
110	Sadawarte RK, Chakraborty SK, Sadawarte VR, Naik SD, Shah TH, Shenoy L, Landge AT (2018) Studies on growth and stock assessment of *Saurida tumbil* (Bloch, 1795) from Ratnagiri coast, India. *Journal of Experimental Zoology, India* 21(2): 695-699.	5.51	5.51	-
111	Saha H, Pal AK, Sahu NP, Saha RK, Goswami P (2018) Physio-biochemical response of *Labeo rohita* (Hamilton, 1822) fed with antifungal drug, fluconazole. *Fishery Technology* 55(2): 94-99.	5.25	3.94	-
112	Sahu S, Datta S (2018) Effect of water pH on growth and survival of *Trichogaster lalius* (Hamilton, 1822) under captivity. *International Journal of Current Microbiology and Applied Sciences* 7: 3655 – 3666.	5.38	5.38	-
113	Sahu VK, Karmakar S, Kumar S, Shukla SP, Kumar K (2018) Triclosan toxicity alters behavioral and hematological parameters and vital antioxidant and neurological enzymes in *Pangasianodon hypophthalmus* (Sauvage, 1878). *Aquatic Toxicology* 202: 145-152.	9.79	9.79	13
114	Sajina KA, Sahu NP, Varghese T, Jain KK (2019) Fucoidan-rich *Sargassum wightii* extract supplemented with α-amylase improves growth and immune responses of *Labeo rohita* (Hamilton, 1822) fingerlings. *Journal of Applied Phycology doi.org/10.1007/s10811-019-1742-0*.	8.64	8.64	1

115	Saptkale PH, Saharan N, Kumar S, Bharti VS, Kumar K (2019) Study of deterioration level of water quality along Mahim creek of Mumbai. *Indian Journal of Ecology* 45(4): 763-767.	4.96	4.96	-
116	Saxena N, Patiyal RS, Dube K, Tiwari VK, Mir JI (2018) First attempt of captive breeding, embryonic and larval development of *Barilius bendelisis* (Hamilton 1807). *Indian Journal of Animal Research* 5(53): 281-287.	6.44	4.83	-
117	Sen S, Vivekanandan E, Gohel JK, Bharadiya SA, Pariyappanal Z, Dash G, Jaiswar AK, Chakraborty SK (2019) Population dynamics and stock assessment of spadenose shark, *Scoliodon laticaudus* Muller and Henle, 1839 along Gujarat coast of India. *Indian Journal of Geo-Marine Science* 48 (4): 423-433.	6.30	4.72	-
118	Sharma A, Paul A, Parida S, Pattanayak S, Mohapatra A, Kumar PR, Sahoo MK, Sundaray JK, Sahoo PK (2018) Dynamics of expression of antibacterial and antioxidant defence genes in Indian Major Carp, *Labeo rohita* in response to *Aeromonas hydrophila* infection. *Microbial Pathogenesis* 125: 108-115.	8.58	8.58	3
119	Sharma A, Singh G (2018) Fisheries development programmes and profile of beneficiaries in Chhattisgarh. *Indian Journal of Economics and Development* 6(4): 1-7.	4.82	4.82	-
120	Sharma JG, Kumar N, Singh SP, Singh A, Hari-Krishna V, Chakrabarti R (2019) Evaluation of immunostimulatory properties of prickly chaff flower *Achyranthes aspera* in rohu (*Labeo rohita*) fry in pond condition. *Aquaculture* 505: 183-189.	9.02	6.78	-
121	Shilta MT, Chadha NK, Purayil SB, Kandiyil AP, Kavungal V, Joseph I, Sawant PB, Abhijith R (2018) The Food and Feeding Habits of Goldsilk Seabream, *Acantho pagrusberda* (Forsskal, 1775). *Turkish Journal Fisheries and Aquatic Sciences* 19(7): 605-14.	6.74	5.05	-
122	Shrestha U, Lekshmi M, Kumar S, Adjei J, Jones KM, Hernandez AJ, Sanford LM, Varela MF (2018) Bioactive agents as modulators of multidrug efflux pumps of the major facilitator super family in key bacterial pathogens. *Current Trends in Microbiology* 12: 15-36.	-	1.5	3
123	Shukla A, Kaur VI, Kumar P, Ansal MD, Dhawan A, Mishra V (2018) Utilization of dietary soybean meal and groundnut meal as fish meal replacement in *Heteropnuestes fossilis* (Bloch.). *International Journal of Current Microbiology and Applied Sciences* 7(6): 734-746.	5.38	4.03	-
124	Shukla BN, Chadha NK, Dube K, Sawant PB, Pandey AK (2018) Annual cyclic changes in ovary of Indian	5.51	5.51	-

	Major Carp *Labeo rohita* (Hamilton, 1882). *Journal of Experimental Zoology, India* 21(2): 10-14.			
125	Shukla BN, Chadha NK, Dube K, Sawant PB, Pandey AK (2018) Hypothalamo-neurosecretory system of the Indian major carp, *Labeo rohita* (Hamilton, 1882) with special reference to ovarian maturation. *Journal of Experimental Zoology, India* 21(2): 1012-17.	5.51	5.51	-
126	Singh K, Munilkumar S, Sahu NP, Das A, Devi GA (2019) Feeding HUFA and vitamin C-enriched *Moina micrura* enhances growth and survival of *Anabas testudineus* (Bloch, 1792) larvae. *Aquaculture* 500: 378-384.	9.02	9.02	2
127	Sontakke R, Tiwari VK, Prasad KP, Rani B, Muralidhar PA (2019) Non-specific immune and antioxidant status of Milk fish, *Chanos chanos* varies with the carbon source used in the biofloc system. *Journal of Experimental Zoology, India* 22(1): 109-118.	5.51	5.51	-
128	Sreedharan K, Deepika A, Paria A, Bedekar MK, Makesh M, Rajendran KV (2018) Ontogenetic and expression of different genes involved in the Toll pathway of black tiger shrimp (*Penaeus monodon*) following immersion challenge with *Vibrio harveyi* and white spot syndrome virus (WSSV). *Agri Gene* 8: 63-71.	-	2.0	-
129	Sreekanth GB, Chakraborty SK, Jaiswar AK, Das B, Chakurkar EB (2019) Application of deterministic and stochastic geo-statistical tools for analysing spatial patterns of fish density in a tropical monsoonal estuary. *Aquatic Ecology* 53(1): 49-60.	8.51	6.38	1
130	Sreekanth GB, Chakraborty SK, Jaiswar AK, Zacharia PU (2018) An inventory on the coastal finfish and shellfish species of Zuari estuary, southwest coast of India. *Indian Journal of Geo-Marine Science* 47(5): 945-958.	6.30	4.73	1
131	Sreekanth GB, Jaiswar AK, Zacharia PU, Pazhayamadom DG, Chakraborty SK (2019) Effect of environment on spatio-temporal structuring of fish assemblages in a monsoon-influenced tropical estuary. *Environmental Monitoring and Assessment* 191(5): 305.	7.96	5.97	-
132	Sri-Hari M, Sreekanth GB, Jaiswar AK (2018) Length–weight relationship of seven finfish species from Mandovi-Zuari estuarine system, Goa, India. *Journal of Applied Ichthyology* 34(6): 1384-1386.	6.88	6.88	1
133	Suresh Babu A, Rao S, Biju IF, Dharmadurai, Rani BAM (2018) Evaluation of claw development in giant freshwater Prawn, *Macrobrachium rosenbergii* (De man, 1879). *Indian Journal of Fisheries* 65 (1): 116-118.	6.26	4.70	-

134	Surya S, Landge A, Deshmukh G, Ambarish GP, Ramteke KK, Kumar J (2018) Fish community structure and trophic status-a measure of ecological degradation: A case study from Powai Lake Mumbai. *International Journal of Ecology and Environmental Sciences* 44 (4): 372-387.	5.08	3.81	-
135	Sushila N, Hameed AS, Prasad KP, Majeed A, Tripathi G (2018) *In vitro* screening of selected antiviral drugs against betanodavirus. *Journal of Virological Methods* 259: 66-73.	7.75	7.75	1
136	Swain S, Sawant PB, Chadha NK, Sundaray JK, Prakash C, Tibile RM (2018) Effect of varying water pH on hormonal and haematological parameters of discus (*Symphysodon aequifasciatus*). *Journal of Experimental Zoology, India* 22(1): 401-406.	5.51	5.51	-
137	Swatipriyanka S, Vivekanandan E, Gohel JK, Sangita BA, Pariyappanal Z, Dash G, Jaiswar AK, Chakraborty SK (2018) Reproductive strategy of milk shark, *Rhizoprionodon acutus* (Ruppell 1837) along north-eastern Arabian Sea. *Ichthyological Research* 65(3): 324-333.	6.98	5.23	-
138	Syeed F, Sawant PB, Asimi OA, Chadha NK, Balkhi MH (2018) Effect of *Trigonella foenum graecum* seed as feed additive on growth, haematological responses and resistance to *Aeromonas hydrophila* in *Cyprinus carpio* fingerlings. *Journal of Pharmacognosy and Phytochemistry* 7(2): 2889-2894.	5.21	3.90	-
139	Talukdar A, Kumar S, Varghese T, Jain KK, Sahu NP, Sahoo S (2019) Feeding gelatinized carbohydrate in the diets of magur, *Clarias batrachus* (Linnaeus, 1758): Effects on growth performance, enzyme activities and expression of muscle regulatory factors. *Aquaculture Research* 50(3): 765-777.	7.50	7.50	4
140	Usman A, Dube K, Shukla SP, Salaskar P, Prakash C, Sawant PB, Singh R (2018) Water quality index as a tool for assessment of status of an urban lake of Mumbai. *International Journal of Current Microbiology and Applied Sciences* 7(4): 520-533.	5.38	5.38	4
141	Vikas, Jaiswar AK, Kumar R, Shashi B, Lakra WS, Vinay A (2018) Morphometric and meristic traits of four flatheads (family: Platycephalidae) occurring along the east coast of India. *Indian Journal of Animal Research* B3271: 1-6.	6.44	6.44	-
142	Vikas, Kumar R, Gangan SS, Jaiswar AK, Lal DM (2018) Taxonomic study of flatheads (Family: Platycephalidae) occurring along the West coast of India. *Indian Journal of Geo-Marine Science* 47(5): 1023-1028.	6.30	6.30	1

143	Vikas, Rao MB, Bhushan S, Jaiswar AK, Shyamkumar, Lakra WS (2018) Taxonomic evaluation of *Grammoplites scaber* (Linnaeus, 1758)and *G. suppositus* (Troschel, 1840) from Indian waters. *Journal of Experimental Zoology, India* 21: 141-145.	5.51	5.51	-
144	Viswambharan D, Pratibha R, Joshi KK, Thomas S, Shenoy L, Jaiswar AK (2018) Length-weight relationship and growth parameters of moonfish *Mene maculata* (Bloch and Schneider, 1801) from Karnataka Coast, India. *Indian Journal of Fisheries* 65(1): 105-109.	6.26	4.70	1
145	Wickramarachchi JP, Deshmukhe G (2018) Morphological and biochemical characterization of the Genus *Dictyota* (J.V. Lamouroux) – Dictyotales Phaeophyceae, NARA, Sri Lanka 2018: 07-25.	-	0.5	-
146	Wickramasinghe ADL, Shukla SP (2018) Performance evaluation of a pellet based column bed for removal of a potentially carcinogenic Polycyclic Aromatic Hydrocarbon (PAH) from water. *Journal of Environmental Chemical Engineering* 6(5): 6012-6020.	-	2.0	4
147	Wickramasinghe ADL, Shukla SP, Balange AK, Prasad KP, Kumar S (2018) A novel fixed column bed device for removal of polycyclic aromatic hydrocarbon (pyrene) from water: performance evaluation and thermodynamic modelling. *International Journal of Current Microbiology and Applied Sciences* 7 (3): 94-111.	5.38	5.38	3
148	Wisdom KS, Bhat IA, Kumar P, Pathan MK, Chanu TI, Walke P, Sharma R (2018) Fabrication of chitosan nanoparticles loaded with aromatase inhibitors for the advancement of gonadal development in *Clarias magur* (Hamilton, 1822). *Aquaculture* 497: 125-133.	9.02	9.02	4
149	Xavier KAM, Priyadarshini B, Ninan G, Zynudheen AA, Mathew PT, Ramachandran KG, Joseph C (2018) Enrobed snack product from Devis's Anchovy (*Stolephorus commersonnii*) and its quality evaluation during frozen. *Journal of Aquatic Food Product Technology* 27: 859 -867.	6.71	6.71	1
Total		**980.05**	**942.625**	**237**

	2017-18			
1.	Acharya AP, Pavan Kumar A, Joshi CG, Namrata P, Gireesh Babu P, Chaudhari A, Krishna G (2018) Development and characterization of 15 novel polymorphic microsatellites for Giant river-catfish, *Sperata seenghala* (Sykes, 1839) using next generation sequencing approach. Journal of Applied Ichthyology doi: 10.1111/jai.13683.	6.88	6.88	1
2.	Ahirwal SK, Jaiswar AK, Chakraborty SK (2017) Biometric analysis of oil sardine, *Sardinella longiceps* (Valenciennes, 1847) from Mumbai coast of Maharashtra, India. Indian Journal of Geo-Marine Sciences 46(9): 1810-1817.	6.30	6.30	-
3.	Ahmad I, Dhanashree D, Jagtap DD, Kumar CS, Balasinor NH, Rani B, Agarwal D, Saharan N (2018) Molecular characterization of inhibin-A: Structure and expression analysis in *Clarias batrachus*. General and Comparative Endocrinology 261: 104-14.	8.45	8.45	5
4.	Ajima MNO, Pandey PK, Kumar K, Poojary N (2018) Alteration in DNA structure, + + molecular responses and Na -K -ATPase activities in the gill of Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758) in response to sub-lethal verapamil. Ecotoxicology and Environmental Safety 147: 809-816.	10.53	10.53	6
5.	Anand G, Bhat IA, Varghese T, Dar SA, Sahu NP, Aklakur MD, Kumar S, Sahoo S (2018)Alterations in non-specific immune responses, antioxidant capacities and expression levels of immunity genes in *Labeo rohita* fed with graded level of carbohydrates. Aquaculture 483: 76-83.	9.02	9.03	4
6.	Anuja A, Yadav VK, Bharti VS, Kumar NR (2017) Trends in marine fish production in Tamil Nadu using regression and autoregressive integrated moving average (ARIMA) model. Journal of Applied and Natural Science 9 (2): 653-657.	5.1	5.1	2
7.	Anuraj A, Waman AA, Prakash C, Roy S D, Viji M, Baidya M, Chadha NK (2017) Investigating the effects of exogenous factors on growth, photosynthetic pigments and bud induction in *Gracilaria corticatavar cylindrica* under *in- vitro* conditions. International Journal of Current Microbiology and Applied Sciences 6(9): 3235-3246.	5.38	5.38	1
8.	Bairwa MK, Saharan N, Rawat KD, Tiwari VK, Prasad KP (2017) Effect of light spectra on reproductive performance of koi carp, Cyprinus carpio (Linnaeus, 1758). Indian Journal of Animal Research 15:1012-1018.	6.44	6.44	1
9.	Bairwa MK, Saharan N, Rawat KD, Tiwari VK, Prasad KP (2017) Effect of light spectra on growth performance and immune response of koi carp, *Cyprinus carpio* (Linnaeus, 1758). Fishery Technology 54: 100-106.	5.25	5.25	2

10.	Balange AK, Xavier MKA, Kumar S, Nayak BB, Venkateshwarlu G (2017) Nutrient profiling of traditionally sun dried acetes. Indian Journal of Fisheries 64: 264-267.	6.26	6.26	4
11.	Banu H, Anand D, Bedekar MK, Rajendran KV, Makesh M (2017) Monoclonal antibodies against recombinant GAPDH of *Edwardsiella tarda* reveal the conserved nature of the protein. Food and Agricultural Immunology 28(4): 685-698.	8.40	8.40	2
12.	Bera A, Sawant PB, Dasgupta S, Chadha NK, Sawant BT, Pal AK (2017) Diel cyclic hypoxia alters plasma lipid dynamics and impairs reproduction in goldfish (*Carassius auratus*). Fish Physiology and Biochemistry 43(6): 1677-1688.	7.73	5.80	5
13.	Bharti VS, Inamdar AB, Purusothaman CS, Yadav VK (2018) Soft computing and statistical technique-application to eutrophication potential modelling of Mumbai coastal area. Indian Journal of Geo-Marine Sciences 47(02): 365-377.	6.30	6.30	1
14.	Bhat IA, Kumar P, Mir IN, Gireesh-Babu P, Gosawami M, Sundaray JK, Sharma R (2017) Toxicological evaluation and effective dose selection of eurycomanone, a quassinoid of *Eurycoma longifolia* plant in fishes. Aquaculture 481:94–102.	9.02	9.02	8
15.	Bhat IA, Nazir MI, Ahmad I, Pathakota GB, Chanu TI, Goswami M, Sundaray JK, Sharma R (2018) Fabrication and characterization of chitosan conjugated eurycomanone nanoparticles: In vivo evaluation of the biodistribution and toxicity in fish. International Journal of Biological Macromolecules 112: 1093-1103.	10.78	10.78	9
16.	Bhat IA, Rather MA, Nazir MI, Gireesh-Babu P, Goswami M, Sundaray JK, Sharma R (2018) Cloning, characterisation, docking and expression analysis of 3 -betahydroxysteroid dehydrogenase during ontogenetic development and annual reproductive cycles in catfish, *Clarias batrachus*. *Theriogenology* 105: 34-44.	8.30	8.30	1
17.	Bhumarkar, R, Sahoo S, Kumar S, Aklakur MD, Sahu NP (2017) Feeding of different level of digestible carbohydrate to *Pangasianodon hypophthalmus* fingerlings: Effect on growth, amylase activity and gene expression. *Ecology, Environment and Conservation* 23(1): 410-416.	4.89	4.89	-
18.	Daniel N, Muralidhar AP, Srivastava PP, Jain KK, Prasad KP, Manish J, Sivaramakrishnan T (2018) Dietary ascorbic acid requirement for growth of striped catfish, *Pangasianodon hypophthalmus* (Sauvage, 1878) juveniles. Aquaculture Nutrition 24(1):616-24.	8.10	8.10	4
19.	Daniel N, Muralidhar AP, Srivastava PP, Jain KK, Prasad KP, Anandan R, Manish J (2018) Influence of Vitamin C on hematology of *Pangasianodon hypophthalmus* (Sauvage,	5.25	5.25	-

	1878) juveniles during pre and post-challenge with *Aeromonas hydrophila* (Chester, 1901). Fishery Technology 55: 120-127.			
20.	Dar SA, Gora A, Bhat IA, Kumar S, Srivastava PP, Muralidhar PA, Gupta S (2017) Studies of anthelminthic benzimidazole derivatives on cytochrome P450 1A (CYP1A) dependent detoxification mechanism in *Labeo rohita*. Aquaculture 481: 79-84.	9.02	9.02	5
21.	Dar SA, Nautiyal V, Phulia V, Bhat IA, Srivastava PP, Sahu NP, Gupta S (2018) Determination of benzimidazoles in fish plasma by chromatographic method and their effects on metabolic andantioxidative enzymes activity. Aquaculture 486: 57-63.	9.02	9.02	5
22.	Dar SA, Nautiyal V, Phulia V, Gupta S, Sardar P, Sahu NP (2017) Bioavailability of albendazole and its metabolities in plasma of *Pangasianodon hypophthalmus* with high performance liquid chromatography. International Journal of Current Microbiology and Applied Sciences 6: 2392-2400.	5.38	5.38	1
23.	Dar SA, Srivastava PP, Varghese T, Rasool SI, Anand G, Gupta S, Gireesh-Babu P, Krishna G (2018) Regulation of compensatory growth by molecular mechanism in *Labeo rohita* juveniles under different feeding regimes. General and Comparative Endocrinology 261: 89-96.	8.45	8.45	5
24.	Das A, Bhattacharjya BK, Goswami SN, Sawant PB, Debnath D, Yengkokpam S, Das A, Kakati A, Sarma KK, Chadha NK, Verma AK, Sharma AP (2017) Assessment of economic feasibility of pen aquaculture technology in floodplain wetlands (beels) of Assam, India. *Indian Journal of Fisheries* 64: 1-7.	6.26	6.26	-
25.	Devi SM, Jaiswar AK, Kumar R, Ali MI, Velakkandy S, Shirke S, Jahageerdar S, Chakraborty SK (2017) Biometric studies on spotted *sardinella Amblygaster sirm* (Walbaum, 1792) (Pisces: Clupeidae) occurring along Andaman coast, India. Indian Journal of Geo-Marine Sciences 47(1): 135-140.	6.30	6.30	-
26.	Dhanapal S, Rajukumar K, Kezhedath J, Semmannan K, Kumar M, Shrivastava D, Bano FH, Kulkarni D, Singh VP (2017) Pulmonary alveolar macrophages reveal higher basal cytokine mRNA expression than peripheral blood leucocytes in healthy piglets. Journal of Animal Research 7(4): 629-634.	6.44	4.83	-
27.	Dinesh R, Prakash C, Chadha NK, Poojary N, Abraham S (2017) Does tobacco (Nicotiana tabacum) leaf dust save the life of rohu (*Labeo rohita*) fingerlings during transport? Journal of Aquaculture Research and Development 8: 474-482.	-	2.0	-

28.	Fawole FJ, Sahu NP, Jain KK, Gupta S, Rajendran KV, Shamna N, Poojary N (2017) Haemato-biochemical, non-specific immunity, antioxidant capacity and histopathological changes in *Labeo rohita* fingerlings fed rubber protein isolate. *Fish Physiology and Biochemistry* 43(3): 677–690.	7.73	7.73	8
29.	Fawole FJ, Sahu NP, Shamna N, Phulia V, Emikpe BO, Adeoye AA, Aderolu AZ, Popoola OM (2018) Effects of detoxified *Jatropha curcas* protein isolate on growth performance, nutrient digestibility and physio metabolic response of *Labeo rohita* fingerlings. *Aquaculture Nutrition* DOI10.1111/anu.12660.	8.10	8.10	3
30.	Gajanan G, Gaurav R, Prasad KP, Kundan K, Pooja V, Raghuvendra P (2017) Detection and tissue profiling of TLR4 and myd88 in *Pangasianodon hypophthalmus* using PCR. Journal of Experimental Zoology, India 21(1): 191-196.	5.51	5.51	-
31.	Gameredinn Y, Saharan N, Prakash C, Tiwari VK (2018) Growth performance and survival of common carp (*Cyprinus carpio*) (Linnaeus, 1785) fingerlings under different fertilizers. International Journal of Livestock Research 8 (1): 235-243.	5.36	5.36	-
32.	Gangan SS, Pavan-Kumar A, Bamaniya D, Jahageerdar S, Lakra WS, Jaiswar AK (2017) A report on ecotypes of *Setipinna phasa* (Hamilton-Buchanan, 1822) from Indian waters. Turkish Journal of Fisheries and Aquatic Sciences 18: 729-738.	6.74	6.74	-
33.	Gautam P, Ananthan PS, Krishnan M (2017) Fish farmers development agencies and farmers empowerment: An impact assessment study in Uttar Pradesh. Agricultural Economics Research Review 30(1): 113-124.	5.9	5.9	-
34.	Gita S, Shukla SP, Choudhury TG, Prakash C, Singh AR (2017) A prototype of novel agro-waste based column bed device for removal of textile dye optilan Red. Water Science and Technology 76(5): 1251-1260.	7.62	7.62	3
35.	Gladston Y, Akhilesh KV, Thakurdas C, Ravi OPK, Ajina SM, Shenoy L (2018) Length–weight relationship of selected elasmobranch species from north-eastern Arabian Sea, India. *Journal of Applied Ichthyology* 20(18): 1–5.	6.88	6.88	1
36.	Gopan A, Ande MP, Varghese T, Sahu NP, Lalappan S, Srivastava PP, Jain KK (2018) Dietary carotenoid supplementation improves fillet appearance, antioxidant status and immune responses in striped catfish (*Pangasianodon hypophthalmus*) nevertheless the growth performance. Turkish Journal of Fisheries and Aquatic Sciences Doi:10.4194/1303-2712-v18.11.07.	6.74	6.74	3

37.	Gora AH, Sahu NP, Sahoo S, Rehman S, Ahmad I, Agarwal D, Dar SA, Rasool SI (2018) Metabolic and haematological responses of *Labeo rohita* to dietary fucoidan. Journal of Applied Animal Research 46(1): 1042-50.	6.43	4.83	-
38.	Greensea K, Krishnan M, Saravanakumar V, Prakash S, Ananthan PS, Qureshi N (2017) Assessment of skill gap and factors influencing career choice among fisheries graduates in India. Indian Journal of Fisheries 64(2): 112-116.	6.26	6.26	2
39.	Gupta S, Gireesh-Babu P, Krishna G (2018) Effects of starvation and refeeding on expression of ghrelin and leptin gene with variations in metabolic parameters in *Labeo rohita* fingerlings. Aquaculture 484: 219-227.	9.02	9.02	18
40.	Hassan MA, Chouksey MK, Xavier MKA, Venkateshwarlu G, Balange A (2017) Optimization of process for pangasius surimi: effect of mince to water ratio on the quality of surimi. Indian Journal of Fisheries 64: 146-152	6.26	6.26	1
41.	Hoilenting, Sharma R, Mugaonkar PK, Mahida RA, Gawa S (2017) Consumers' willingness to pay more for preferred fish (*Labeo rohita*) in Manipur. International Journal of Pure and Applied Bioscience 5(6): 402-407.	4.74	4.74	1
42.	Jahan I, Dar SA, Anand G, Singh S, Reddy AK, Sudhagar AS, Harikrishna V, Srivastava PP (2017) Enzymatic alterations in *Litopenaeus vannamei* (Boone,1931) juveniles exposed to different levels of dietary potassium and magnesium reared in inland saline water. International Journal of Current Microbiology and Applied Sciences 6(11): 773-780.	5.38	5.38	1
43.	Jahan I, Reddy AK, Harikrishna V, Sudhagar AS, Srivastava PP, Singh S, Varghese T (2018) Effect of fortification of potassium and magnesium in the diet and culture water on growth, survival and osmoregulation of Pacific white shrimp, *Litopenaeus vannamei* reared in inland ground saline water. Turkish Journal of Fisheries and Aquatic Sciences 18: 1235-1243.	6.74	6.74	4
44.	Jahan I, Reddy AK, Srivastava PP, Harikrishna V, Sudhagar AS, Singh S (2017) Histo-architectural changes in the selected tissues of *Litopenaeus vannamei* (Boone, 1931) juveniles reared in Inland Ground Saline Water (IGSW) fed with graded + levels of potassium (K^+) and magnesium (Mg^{2+}) through feed. International Journal of Current Microbiology and Applied Science 6(11): 1739-1752.	5.38	5.38	1
45.	Jayant M, Muralidhar AP, Sahu NP, Jain KK, Pal AK, Srivastava PP (2018) Protein requirement of juvenile striped catfish, *Pangasianodon hypophthalmus*. Aquaculture International 26(1): 375-389.	7.46	7.46	10

46.	Jousy N, Jahageerdar S, Prasad JK, Babu PG (2017) Analysis of genetic variation in the natural populations of *Clarias batrachus* from India using microsatellite markers. International Journal of Current Microbiology and Applied Sciences 6(9): 1310-1319.	5.38	5.38	1
47.	Kantharajan G, Pandey PK, Krishnan P, Bharti VS, Deepak SV (2018) Plastics: A menace to the mangrove ecosystem of megacity Mumbai, India. Electronic Journal 16(1): 1-5.	-	1.5	2
48.	Kantharajan G, Pandey PK, Krishnan P, Samuel VD, Bharti VS, Purvaja R (2017) Molluscan diversity in the mangrove ecosystem of Mumbai, West coast of India. Regional Studies in Marine Science 14:102-111.	7.46	7.46	5
49.	Karmakar S, Purkait S, Das A, Samanta R, Kumar K (2018) Climate change and inland fisheries: Impact and mitigation strategies. Journal of Experimental Zoology, India 21(1): 329-335.	5.51	5.51	2
50.	Katare MB, Lakra WS, Chadha NK, Basavaraja N, Gupta S, Sawant PB (2017) Masculinization of dwarf gourami *Trichogaster lalius* through immersion treatment of 17 - methyltestosterone. Indian Journal of Animal Sciences 87(9): 26–10.	6.23	6.23	2
51.	Keer U, Alim H, Xavier M, Balange AK (2018) Quality changes during ice storage of *Acetes* Species. International Journal of Current Microbiology and Applied Sciences 7(1): 2063-71.	5.38	5.38	2
52.	Kole S, Anand D, Sharma R, Tripathi G, Makesh M, Rajendran KV, Kadam MK (2017) Tissue specific expression profile of some immune related genes in *Labeo rohita* to *Edwardsiella tarda* infection. Fish and Shellfish Immunology 66: 575-582.	9.30	9.30	6
53.	Kole S, Kumari R, Anand D, Kumar S, Sharma R, Tripathi G, Makesh M, Rajendran KV, Bedekar MK (2018) Nanoconjugation of bicistronic DNA vaccine against *Edwardsiella tarda* using chitosan nanoparticles: Evaluation of its protective efficacy and immune modulatory effects in *Labeo rohita* vaccinated by different delivery routes. Vaccine 36(16): 2155-2165.	9.27	9.27	10
54.	Krishnan R, Jeena K, Zahoor M, Shyam KU, Prasad KP (2018) Antiviral activity of transiently expressed mitochondrial antiviral signaling adapter, MAVS orthologue from Asian seabass. Fish and Shellfish Immunology 76: 183-186.	9.30	9.30	3
55.	Krishnan R, Babu BG, Jeena K, Tripati G, Prasad KP (2018) Molecular characterization, ontogeny and expression profiling of mitochondrial antiviral signaling adapter, MAVS from Asian seabass *Lates calcarifer*, Bloch (1790) Developmental and Comparative Immunology 79: 175-185.	9.12	9.12	2

56.	Krishnan TS, Sahu NP, Jain KK, Muralidhar AP, Saravanan K, Ferosekhan S, Praveenraj J, Artheeswaran N (2017) Optimum dietary lipid requirement of *Pangasianodon hypophthalmus* juveniles in relation to growth, fatty acid profile, body indices and digestive enzyme activity. Aquaculture International 25: 941-954.	7.46	5.60	4
57.	Kumar A, Kanyal P, Bedekar MK, Kumar AP, Sushila N, Tripathi G (2017) Development and characterization of embryonic stem-like cell culture from *Carassius auratas* (Linnaeus, 1758). Fishery Technology 54(4): 258-264.	5.25	3.94	_
58.	Kumar GP, Xavier KAM, Nayak BB, Kumar HS, Venkateshwarlu G, Balange A (2017) Effect of different drying methods on the quality characteristics of *Pangasius hypophthalmus*. International Journal of Current Microbiology and Applied Sciences 6(10): 184-195.	5.38	5.38	6
59.	Kumar M, Dube K, Tiwari VK, Reddy AK, Chaturvedi CS (2017) Comparative performance of *Pangasianodon hypophthalmus* (Sauvage, 1878) culture in cages and ponds. International Journal of Current Microbiology and Applied Sciences 6(10): 1679-1688.	5.38	5.38	1
60.	Kumar P, Jain KK, MunilKumar S, Sudhagar SA (2017) Alternate feeding strategies for optimum nutrient utilization and reducing feed cost for semi-intensive practices in aquaculture system-A review. Agricultural Reviews 1: 38-42.	4.37	4.37	4
61.	Kumar P, Jain KK, Sardar P, Jayant M, Tok NC (2017) Effect of dietary synbiotic on growth performance, body composition, digestive enzyme activity and gut microbiota in *Cirrhinus mrigala* (Ham.) fingerlings. Aquaculture Nutrition doi.org/10.1111/anu.12628.	8.10	8.10	9
62.	Kumar P, Jain KK, Sardar P, Sahu NP, Gupta S (2017) Dietary supplementation of acidifier: effect on growth performance and haemato-biochemical parameters in the diet of *Cirrhinus mrigala* juvenile. Aquaculture International 25: 2101-2116.	7.46	7.46	3
63.	Kumar P, Pal AK, Sahu NP, Jha AK, Kumar N, Christina L, Priya P (2018) Dietary L-tryptophan potentiates non-specific immunity in *Labeo rohita* fingerlings reared under elevated temperature. Journal of Thermal Biology 74: 55-62.	7.90	7.90	4
64.	Kumar R, Jaiswar AK, Jahageerdar S, Chakraborty SK, Pavan-Kumar A, Prasad L (2017) Comparative taxonomic evaluation of Thais species (Order: Gastropoda; Family: Muricidae) of Mollusca from Maharashtra coast of India. Indian Journal of Geo-Marine Sciences 46: 1098-1104.	6.30	6.30	3
65.	Kumar R, Xavier M, Lekshmi M, Dhanabalan V, Thachil M, Balange A, Venkateshwarlu G (2018) Development of functional extruded snacks by utilizing paste shrimp (*Acetes* spp.): Process optimization and quality evaluation. Journal	8.42	8.42	5

	of the Science of Food and Agriculture, 98:2393-2401.			
66.	Kumar S, Raman RP, Prasad KP, Srivastava PP, Kumar S, Rajendran KV (2018) Effects on haematological and serum biochemical parameters of *Pangasianodon hypophthalmus* to an experimental infection of *Thapar ocleidus* sp. (Monogenea: dactylogyridae) . Experimental Parasitology 188: 1-7.	7.72	7.72	8
67.	Kumar S, Sahu NP, Gupta S, Deo A, Shamna N, Ranajan A (2017) Inclusion level of deoiled rice bran (DORB) in the diet of *Labeo rohita* (Hamilton, 1882) fingerlings: Effect on growth and gene expression of IGF-I and IGF-II. Aquaculture 481:211-217.	9.02	9.02	8
68.	Kumar S, Sahu NP, Shamna N, Ranjan A (2018) Feeding higher level of de-oiled rice bran causes stress to Labeo rohita fingerlings. Aquaculture 484: 184-190.	9.02	9.02	6
69.	Kumar SV, Pandey PK, Anand T, Bhuvaneswari R, Dhinakaran A, Kumar S (2018) Biofloc improves water, effluent quality and growth parameters of *Penaeus vannamei* in an intensive culture system. Journal of Environmental Management 215: 206-215.	10.87	10.87	11
70.	Kumar SV, Pandey PK, Anand T, Bhuvaneswari R, Kumar S (2017) Effect of periphyton (aquamat) on water quality, nitrogen budget, microbial ecology, and growth parameters of *Litopenaeus vannamei* in a semi-intensive culture system. Aquaculture 479(1): 240-249.	9.02	9.02	14
71.	Kumari K, Gireesh-Babu P, Kumar S, Krishna G (2017) Gene structure and comparative and phylogenetic analyses of *Catla catla* CYP1A full-length cDNA and its responsiveness to enzo(a)pyrene and copper sulphate at early developmental stages. Fish Physiology and Biochemistry doi: 10.1007/s10695-017-0416-6.	7.73	7.73	1
72.	Kumari R, Somana P, Rathore G, Tripathi G, Makesh M, Rajendran KV, Bedekar MK (2017) Bicistronic DNA vaccine against *Edwardsiella tarda* infection in *Labeo rohita*: Construction and comparative evaluation of its protective efficacy against monocistronic DNA vaccine. Aquaculture 485: 201-209.	9.02	9.02	10
73.	Kumari S, Sharma A, Ghosh A, Chaturvedi CS (2017) Performance assessment of SHGs in fisheries sector of Raipur, Chattisgarh. Fishery Technology 54(2): 123-127.	5.25	5.25	-
74.	Labh SN, Sahu NP, Sahoo S, Shakya SR, Kayastha BL, Kumar S (2017) Growth performance and immune response of silver striped catfish *Pangasianodon hypophthalmus* (Sauvage,1878) fed with *Lapsi choerospondias axillaris* (Roxburgh, 1832) during intensive aquaculture. International Journal of Fisheries and Aquatic Studies 5: 188-202.	3.99	2.99	1

75.	Leya T, Raman RP, Srivastava PP, Kumar K, Ahmad I, Gora AH, Poojary N, Kumar S, Dar SA (2017) Effects of curcumin supplemented diet on growth and non-specific immune parameters of *Cirrhinus mrigala* against *Edwardsiella tarda* infection. International Journal of Current Microbiology and Applied Sciences 6(9): 1230-1243.	5.38	5.38	6
76.	Mahapatra BK, Bhattacharya S, Pradhan A (2017) Some aspects of biology of Chiti kankra, *Varuna litterata* (Fabricius, 1798) from Sundarbans, West Bengal, India. Journal of Entomology and Zoology Studies 5(5): 178-183.	*5.53*	*5.53*	-
77.	Mandal B, Sawant PB, Dasgupta S, Chadha NK, Sundaray JK, Sawant BT, Bera AS (2017) Deviation of habitat salinity during seasonal gonad recrudescence affects plasma sex steroid levels and suppresses gonadal maturation in an euryhaline fish *Etroplus suratensis*. Aquaculture Research 5: 1–11.	7.46	5.60	3
78.	Mir IN, Srivastava PP, Bhat IA, Muralidhar AP, Gireesh-Babu P, Varghese T, Chanu TI, Jain KK (2018) Reference gene selection for quantitative real-time RT-PCR normalization in *Clarias magur* at different larval developmental stages. Indian Journal of Animal Sciences 88(3): 120-125.	6.23	6.23	1
79.	Mir IN, Srivastava PP, Bhat IA, Muralidhar AP, Varghese T, Gireesh-Babu P, Jain KK (2018) Expression and activity of trypsin and pepsin during larval development of Indian walking catfish (*Clarias magur*). Aquaculture 491: 266-72.	9.02	9.02	6
80.	Mohapatra BC, Sahoo SK, Dasgupta S, Gupta SD (2017) Biology of Mahanadi Mahseer, *Tor mosal Mahanadicus* (David) reared in freshwater pond culture system. Current Agriculture Research Journal 5: 231-238.	4.36	4.36	-
81.	Murali S, Jahageerdar S, Kumar S, Krishna G (2017) Computational identification and screening of natural compounds as drug targets against the fish pathogen, *Pseudomonas fluorescens*. International Journal of Current Microbiology and Applied Sciences 6(11): 3521-3535	5.38	5.38	-
82.	Nadella RK, Raman RP, Dash G, Ramanathan SK, Kuttanappilly L, Mothadaka MP (2017) Histopathological changes in giant freshwater prawn *Macrobrachium rosenbergii* (de Man 1879) fed with probiotic *Bacillus licheniformis* upon challenge with *Vibrio alginolyticus*. Aquaculture Research doi.org/10.1111/are.13436.	7.50	5.60	2
83.	Nageswari P, Saharan N, Babitha Rani A M, Kumar SH, Daniel N (2017) Hematological and body indices of pearl spot (*Etroplus suratensis*) reared in biofloc supplemented with three different probiotics. Ecology, Environment and Conservation 23: 170-177.	4.89	4.89	-
84.	Nahar A, Chaklader MR, Siddik MAB, Ilham I, Pham HD, Munilkumar S (2017) Stock structure of the critically	5.38	5.38	2

	endangered *Clupisoma garua* (Hamilton, 1822): An investigation based on discriminant analysis approach. Journal of Aquatic Research and Development 8(470): 2-6.			
85.	Nazir MI, Sahu NP, Pal AK, Makesh M (2017) Synergistic effect of L-methionine and fucoidan rich extract in eliciting growth and non-specific immune response of *Labeo rohita* fingerlings against *Aeromonas hydrophila*. Aquaculture 479: 396-403.	9.02	9.02	10
86.	Pandey M, Jaiswar AK, Deshmukhe G (2018) Occurrence of sea anemone larvae in the estuarine area of Vasai creek, Maharashtra, India. International Journal of Current Microbiology and Applied Sciences 7(3): 461-4.	5.38	5.38	-
87.	Paria A, Makesh M, Chaudhari A , Purushothaman CS, Rajendran KV (2018) Molecular characterisation, ontogeny and expression analysis of melanoma differentiation-associated factor 5 (MDA5) from Asian seabass, *Lates calcarifer*. Developmental and Comparative Immunology 78: 71-82.	9.12	9.12	6
88.	Paria A, Makesh M, Chaudhari A , Purushothaman CS, Rajendran KV 2017. Toll-like receptor (TLR) 22, a non-mammalian TLR in Asian seabass, *Lates calcarifer*: Characterisation, ontogeny and inductive expression upon exposure with bacteria and ligands. Developmental and Comparative Immunology 81: 180-186.	9.12	9.12	9
89.	Pathan MA, Nesnas EA, Acharya AP, Roshan R, Kumar TP, Gireesh-Babu P, Jahageerdar S, Chaudhari A, Krishna G (2017) In silico characterization of selected microsatellite loci reported in Zebra fish genome. International Journal of Current Microbiology and Applied Sciences 6(11): 2244-52.	5.38	5.38	-
90.	Pavan-Kumar A, Kumar R, Pitale P, Kang-Ning S, Borsa P (2018) *Neotrygon indica* sp. nov., the Indian Ocean blue-spotted maskray (Myliobatoidei, Dasyatidae). Comptes Rendus Biologies 341(2): 120-130.	7.87	7.87	9
91.	Phulia V, Sardar P, Sahu NP, Fawole FJ, Shamna N, Gupta S (2017) Substitution of soybean meal with fermented Jatropha kernel meal: Effect on growth performance, body composition and metabolic enzymes activity of *Labeo rohita*. Fish Physiology and Biochemistry 44: 475-487.	7.73	7.73	5
92.	Prabhakar P, Lekshmi M, Nayak BB, Kumar S (2017) Incidence of potentially pathogenic *Escherichia coli* in fresh seafood in Mumbai. Pollution Research 36 (3): 541-546.	4.97	4.97	-
93.	Pradhan A, Mahapatra BK (2017) First record of the two-spot razorfish, *Iniistius bimaculatus* (Perciformes: Labridae) from Digha, North-East coast of India. Cuademos de Investigacion UNED 9(1): 115-118.	6.17	6.17	7

94.	Prasad KP, Shyam KU, Banu H, Jeena K, Krishnan R (2017) Infectious Myonecrosis Virus (IMNV) – an alarming viral pathogen to Penaeid shrimps. Aquaculture 477: 99-145.	9.02	9.02	12
95.	Priyadarshi H, Das R, Pavan-Kumar A, Gireesh-Babu P, Javed H, Kumar S, Marappan M, Somdutt KG, Chaudhari A (2017) Silencing and augmentation of IAG hormone transcripts in adult *Macrobrachium rosenbergii* males affects morphotype transformation. Journal of Experimental Biology 15: 4101-4108.	9.02	9.02	2
96.	Priyadarshini B, Xavier M, Nayak BB, Dhanapal K, Balange A (2017) Instrumental quality attributes of single washed surimi gels of tilapia: Effect of different washing media LWT - Food Science and Technology 86: 385-392.	7.26	7.26	6
97.	Qureshi NW, Krishnan M, Wani SA, Ramasubramanian V, Sivaramane N, Sundaramoorthy C (2017) Negative externalities in Kashmir lake fisheries: Transformations in species patronage, use priorities and policy. Indian Journal of Agricultural Economics 72(1): 89-101.	5.15	5.15	-
98.	Radhakrishna K, Marimuthu R, Rajakumar M, Qureshi NW (2017) Inequality of income, asset and debt of inland fishers in the Theni District of Tamil Nadu, India. Indian Journal of Fisheries 64(2): 105-111.	6.26	6.26	1
99.	Radhakrishnan K, Infantina JA, Marimuthu R, Rajakumar M, Qureshi NW (2017) Impact of socioeconomic variables on income, asset and debt of inland fishers in Tamil Nadu, India. American Journalof Environmental and Resource Economics 2(1): 37-45.	-	2.0	-
100.	Ranjan A, Jain KK, Srivastava PP, Muralidhar PA (2018). Dietary energy requirement of *Pangasianodon hypophthalmus* (Sauvage, 1878) juveniles reared at two temperatures. Turkish Journal of Fisheries and Aquatic Sciences 18(1): 101-108.	6.48	6.48	7
101.	Ranjan A, Sahu NP, Deo AD, Kumar HS, Kumar S, Jain KK (2017) Xylanase and phytase supplementation in the de-oiled rice bran (DORB) based diet improves the growth performance of *Labeo rohita* . International Journal of Current Microbiology and Applied Sciences 6: 1493-1503.	*5.38*	*5.38*	5
102.	Ranjan A, Sahu NP, Deo AD, Kumar S (2017) Comparative growth performance, in vivo digestibility and enzyme activities of *Labeo rohita* fed with DORB based formulated diet and commercial carp feed. Turkish Journal of Fisheries and Aquatic Sciences doi:10.4194/1303-2712-v18.9.02.	6.74	6.74	10

103.	Rather MA, Basha SH, Bhat IA, Sharma N, Pawar NP, Badhe M, Sundaray JK, Sharma R (2017) Characterization, molecular docking, dynamics simulation and metadynamics of kisspeptin receptor with kisspeptin. International Journal of Biological Macromolecules 101: 241-253.	10.78	10.78	9
104.	Rathlavath S, Kohli V, Singh AS, Lekshmi M, Tripathi G, Kumar S, Nayak BB (2017) Virulence genotypes and antimicrobial susceptibility patterns of *Arcobacter butzleri* isolated from seafood and its environment. International Journal of Food Microbiology 263: 32-37.	10.01	10.01	14
118.	Rathlavath S, Kumar S, Nayak BB (2017) Comparative isolation and genetic diversity of Arcobacter sp. from fish and the coastal environment. Letters of Applied Microbiology 65(1): 42-49.	7.81	7.81	12
105.	Rathor PK, Rather MA, Gireesh-Babu P, Kumar K, Purayil SBP, Sharma R (2017) Steroidogenic acute regulatory protein (StAR) gene expression construct: Development, nanodelivery and effect on reproduction in air-breathing catfish, *Clarias batrachus*. International Journal of Biological Macromolecules 104: 1082-1090.	10.78	10.78	14
106.	Rathor R, Dube K, Reddy AK, Rangacharyulu PV, Venkateshwarlu G, Jayasankar P (2017) Effect of varying protein levels on growth and digestive enzyme activities of pengba *Osteobrama belangeri* (Valenciennes, 1844). 64: Indian Journal of Fisheries 206-213.	6.26	4.70	-
107.	Roul SK, Ratheesh TB, Ganga U, Abussamad EM, Rohit P, Jaiswar AK (2017) Length-weight relationship of five needle fish species from Kerala waters, South West coast of India. Journal of Applied Ichthyology doiI: 10.1111/jai.13527.	6.73	5.05	3
108.	Sadurudeen N, Pavan-Kumar A, Gireesh-Babu P, Jaiswar AK, Chaudhari A, Krishna G, Lakra WS (2017) DNA barcoding of selected Perciformes (Infra Class: Teleostei) fishes from Indian coast. Indian Journal of Biotechnology 16: 315-321.	6.29	6.29	1
109.	Saha R, Bhat IA, Charan R, Purayil SBP, Krishna G, Kumar AP, Sharma R (2018) Ameliorative effect of chitosan-conjugated 17 -methyltestosterone on testicular development in *Clarias batrachus*. Animal Reproduction Science 193: 245-254.	7.82	7.82	4
110.	Sahoo L, Parhi J, Debnath C, Prasad KP (2017) Effect of feeding lipopolysaccharide as an immunostimulant on immune response and immune gene expression of *Labeo bata*. Veterinary Immunology and Immunopathology 188: 48-58.	7.85	7.85	4

111.	Salas S, Ojha SN, Ramasubramanian V, Vipinkumar VP, Ananthan PS (2017) Entrepreneurship based empowerment among fisherwomen self-help groups of Kerala. Indian Journal of Fisheries 64(4): 106-111.	6.26	6.26	-
112.	Samanta R, Chakraborty SK, Shenoy L, Nagesh TS, Behera S, Bhoumik TS (2018) Bycatch characterization and relationship between trawl catch and lunar cycle in single day shrimp trawls from Mumbai coast of India. Regional Studies in Marine Science 17: 47–58.	7.46	7.46	6
113.	Sanap BN, Sardar P, Sahu NP, Phulia V, Shamna N, Dasgupta S, Prabu DL, Datta S (2018) Utilisation of electron beam irradiated *Jatropha curcas* kernel meal in the diet of *Labeo rohita* fingerlings. Aquaculture Nutrition doi10.1111/anu.12668.	8.10	8.10	3
114.	Sanjit SA, Lekshmi M, Prakasan S, Nayak BB, Kumar S (2017) Multiple antibiotic-resistant, extended spectrum-Lactamase (ESBL)-producing enterobacteria in fresh seafood. Microorganisms 5(3): 53-57.	-	2.0	7
115.	Satapathy S, Shukla SP (2017) Application of a marine cyanobacterium *Phormidium fragile* for green synthesis of silver nanoparticles. Indian Journal of Biotechnology 16(1): 110-113.	6.34	6.34	4
116.	Saxena N, Patuiyal RS, Dube K, Tiwari VK (2017) Ovarian maturation and histological observations of *Barilius bendelisis* (Hamilton) in captivity. Indian Journal of Animal Research B-3281:1-7.	6.44	6.44	-
117.	Sen S, Chakraborty SK, Elayaperumal V, Zacharia PU, Jaiswar AK, Dash G, Kizhakudan SJ, Bharadiya SA, Gohel JK (2018) Reproductive strategy of milk shark, *Rhizoprionodon acutus* (Ruppell, 1837), along north-eastern Arabian Sea. Ichthyological Research 18: 1-10.	6.98	5.23	-
118.	Sen S, Chakraborty SK, Vivekanandan E, Zacharia PU, Jaiswar AK, Dash G, Bharadiya SA, Gohel JK (2018) Feeding habits of milk shark, *Rhizoprionodon acutus* (Ruppell, 1837) in the Gujarat coastal waters of north-eastern Arabian Sea. Regional Studies in Marine Science 17:78-86.	7.46	5.6	2
119.	Shamna N, Sardar P, Sahu NP, Phulia V, Rajesh M, Fawole FJ, Pal AK, Angel G (2017) Heamato-immunological and physiological responses of *Labeo rohita* fingerlings to dietary fermented *Jatropha curcas* protein concentrate. Animal Feed Science and Technology 232: 198-206.	8.59	8.59	11
120.	Shankar K, Vinod RK, Roy SD, Krishnan P, Chadha NK, Sawant PB, Saharan N (2017) Cultivation of marine sponges with pharmaceutical value: Status and future prospects in India. International Journal of Current Microbiology and Applied Sciences 6(12): 4334-4351.	5.38	5.38	-

121.	Shardul S, Gangan A, Kumar P, Bamaniya D, Jahageerdar S, Lakra WS, Jaiswar AK (2017) A report on ecotypes of *Setipinna phasa* (Hamilton-Buchanan, 1822) from Indian waters. Turkish Journal of Fisheries and Aquatic Sciences d o i : 10.4194/1303-2712.	6.48	6.48	-
122.	Sharma A, Chadha NK, Das SK, Sen A, Dam-Roy S, Chanu TI, Sawant PB, Prakash C (2018). *Asparagus racemosus* aqueous root extract induced effects on cellular immune reaction of *Labeo rohita* (Hamilton). Indian Journal of Animal Sciences 88 (2): 251-258.	6.23	6.23	-
123.	Sharma A, Chanu TI, Ande MP, Suresh Babu PP, Syamala A, Srinivasa Rao KPS, Deo AD, Jahageerdar S (2017) Virulent *Aeromonas veronii* strain BLB-01 associated with mass mortality of *Clarias batrachus* (Linnaeus,1758). International Journal of Current Microbiology and Applied Sciences 6(8): 3668-3681.	5.38	5.38	2
124.	Sharma A, Chanu TI, Deo AD (2017) Dietary Ashwagandha, *Withania somnifera* (L. dunal) potentiates growth, haemato-biochemical response and disease resistance of *Labeo rohita* (Hamilton, 1822) against *Aeromonas hydrophila* infection. Journal of Entomology and Zoology Studies 5: 1113-1119.	5.53	5.53	2
125.	Shrivastava V, Chadha NK, Koya M, Lakra WS, Sawant PB, Remya S (2017) Effect of stocking density on growth and survival of *Fenneropenaeus merguiensis* (de Man, 1888) post larvae. International Journal of Current Microbiology and Applied Sciences 6(9): 1779-1789.	5.38	5.38	2
126.	Shyam KU, Jeena K, Prasad KP, Rathore G, Tripathi G (2017) Surveillance for infectious myonecrosis virus in Indian shrimp aquaculture. Indian Journal of Fisheries 64(2): 69-75.	6.26	6.26	1
127.	Singh DK, Kumar M, Ranjan A, Udit UK, Vimal B, Nayak BB, Gupta S (2017) Growth and nutrient utilization of *Pangasianodon hypophthalmus* (Sauvage, 1878) fed with graded level of zinc. International Journal of Current Microbiology and Applied Sciences 6(6): 671-683.	5.38	5.38	1
128.	Singh P, Nayak SK, Reang D, Singh R (2017) A study on growth performance and survivability of *Ompok pabda* (Hamilton 1822) fingerlings in earthen pond fed with different feed ingredients. International Journal of Fisheries and Aquatic Studies 5(4): 289-294.	5.38	5.38	4
129.	Sivaramakrishnan T, Sahu NP, Jain KK, Muralidhar AP, Saravanan K, Ferosekhan S, Praveen RJ, Artheeswaran N (2017) Optimum dietary lipid requirement of *Pangasianodon hypophthalmus* juveniles in relation to growth, fatty acid profile, body indices and digestive enzyme activity. Aquaculture International 25(2): 941-954.	7.46	5.60	4

130.	Sreekanth GB, Chakraborty SK, Jaiswar AK (2017) Stock structure analysis of Japanese threadfin bream, *Nemipterus japonicus* (Bloch, 1791) along the Indian coast based on truss network analysis. Indian Journal of Geo-Marine Sciences 46(9): 1836-1841.	6.30	4.72	1
131.	Sri Hari M, Bhutia RN, Abidi ZJ, Kathirvelpandian A, Sharma R, Ramteke K, Sreekanth GB (2017) Differentiation in morphometric traits of *Chanos chanos* (Forsskal, 1775) stocks along Indian coast. Indian Journal of Geo-Marine Sciences 36(17): 1-18	6.30	6.30	-
132.	Srivastava S, Dahal S, Naidu S, Anand D, Gopalakrishnan V, Rajendran KV, Raghavan SC (2017) DNA double-strand break repair in *Penaeus monodon* is predominantly dependent on homologous recombination. DNA Research 1340: 28-38.	10.00	7.5	5
133.	Swatipriyanka S, Chakraborty SK, Jaiswar AK (2017) Population dynamics and stock assessment of milk shark *Rhizoprianodon acutus* (Rupell 1837) along the Gujarat coast, India. Indian Journal of Geo-Marine Sciences 46(5): 936-946.	6.30	4.72	7
134.	Tok NC, Jain KK, Prabu DL, Sahu NP, Munilkumar S, Pal AK, Siddiah GM, Kumar P (2017) Metabolic and digestive enzyme activity of *Pangasianodon hypophthalmus* (Sauvage, 1878) fingerlings in response to alternate feeding of different protein levels in the diet. Aquaculture Research 48(6): 2895-2911.	7.50	7.50	4
135.	Varghese T, Pal AK, Mishal P, Sahu NP, Dasgupta S (2017) Effects of hypoxia and dietary vitamin E on growth performance and oxidative status of *Cirrhinus mrigala* (Hamilton, 1822). Animal Biology 67(2): 133–148.	7.30	7.30	4
136.	Varghese T, Pal AK, Mishal P, Sahu NP, Dasgupta S (2018) Physiological and molecular responses of a bottom dwelling carp, *Cirrhinus mrigala* to short-term environmental hypoxia. *Turkish Journal of Fisheries and Aquatic Sciences* 18(3): 483-490.	6.74	6.74	5
137.	Vignaesh D, Martin X, Nagalakshmi K, Asha KK, Chongtham BS, Balange A (2017) Effect of different processing conditions on degree of hydrolysis, ACE inhibition and antioxidant activities of protein hydrolysate from *Acetes indicus*, Environmental Science and Pollution Research 24(26): 21222-21232.	8.91	8.91	8
138.	Xavier M, Hauzoukim, Nagalakshmi K, Balange AK, Chouksey MK, Venkateshwarlu G (2017) Functionality of chitosan in batter formulation and its effect on physicochemical quality parameters of enrobed fish sticks. Carbohydrate Polymers 127: 189-194.	12.04	12.04	19

139.	Yadav B, Sharma A (2017) Gender Roles Analysis of Ornamental Fish Enterprises in Maharashtra State, India. Asian Fisheries Science 30: 333-334.	4.55	4.55	-
140.	Yadav B, Sharma A (2017) Livelihood analysis of ornamental fish producers in Mumbai and Thane Districts of Maharashtra state. Asian Journal of Agricultural Extension, Economics and Sociology 17(4): 1-9.	4.35	4.35	-
141.	Zahoor M, Prasad KP, Rahul K, Megha B, Pavan KA (2018) Molecular cloning, characterization and expression profiling of galectin-9 gene from *Labeo rohita* (Hamilton, 1822). Fish and Shellfish Immunology 76: 287–292.	9.30	9.30	5
Total		**1050.34**	**1024.84**	**546**

	2016-2017			
1.	Adiga, M. S., Ananthan, P.S., DivyaKumari, H.V., Ramasubramanian, V., 2016. Multidimensional analysis of marine fishery resources of Maharashtra, India. Ocean & Coastal Management, 130: 13- 20.	8.60	8.60	8
2.	Adiga, M.S., Ananthan, P.S., DivyaKumari, H.V. and Ramasubramanian, V., 2016. Crisis of Sustainability or Perils of Ill-managed Open Access Fisheries? Analysis of Long-term Catch Trends in Marine Fisheries of Maharashtra and India. Agricultural Economics Research Review, 29 (1): 105-116.	5.90	5.90	1
3.	Ahmad, I., Babitha, Rani, A.M., Verma, A.K. and Maqsood, M., 2017. Biofloc technology- An emerging avenue in aquatic animal healthcare and nutrition. Aquaculture International. DOI: 10.1007/s10499-016-0108-8.	7.46	7.46	55
4.	Ajimaa, M.N.O., Pandey, P.K., Kumar, K. and Poojary, N., 2017. Neurotoxic effects, molecular responses and oxidative stress biomarkers in Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758) exposed to verapamil. Comparative Biochemistry and Physiology Part C: Toxicology & Pharmacology 196:44-52.	8.70	8.70	12
5.	Ajima MNO, PK Pandey, K Kumar, N PoojaryAssessment of mutagenic, hematological and oxidative stress biomarkers in liver of Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758) in response to sublethal verapamil exposure. Drug and Chemical Toxicology 40 (3), 286-294	7.95	7.95	8
6.	Ajima MNO, PK Pandey, K Kumar, N Poojary, AM Mane Lipid peroxidation and activities of antioxidant enzymes biomarkers in *Oreochromis niloticus* (Linnaeus, 1758) chronically treated with diclofenac (DCF) Journal of Experimental Zoology, India 19 (2), 671-676	5.51	5.51	4
7.	Akhtar MS, AK Pal, NP Sahu, A Ciji, SK Gupta, S Dasgupta (2016)Serum electrolytes, osmolarity and selected enzyme activities of *Labeo rohita* juveniles exposed to temperature and salinity stress: effect of dietary l-tryptophan. Proceedings of the National Academy of Sciences, India Section B: Biological Sciences 84: 973-980	-	1.5	2
8.	Aklakur M, Dasgupta (2016) Natural antioxidants from sea: a potential industrial perspective in aquafeed formulation. Reviews in Aquaculture10, 385–399	13.19	13.19	9

9.	Ambekar Ajit, PritiKubal, Chandra Prakash, Paramita B. Sawant and Sivaperumal P. 2016. Occurrence of live corals in close vicinity of nuclear power plant site Microbenthos Diversity around Nuclear Power Plant Site, Tarapur, Maharashtra, India. Research and Journal of Marine Sciences, 4(4): 1-15.	-	2.0	-
10.	Anand, S., Sudhayam, P., Kumar, S., Kohli, M.P.S., Sundaray, J.K., Sinha, A., Pailan, G.H. and Roy, D.S., 2017. Dietary biofloc supplementation in black tiger shrimp, *Penaeus monodon*: effect on immunity, antioxidant and metabolic enzyme activities. *Aquaculture Research*. DOI 10.1111/are.13276.	7.50	7.50	13
11.	Arun, V.V., Saharan, N., Ramasubramanian, V., Babitha, Rani, A.M., Salin, K.R., Sontakke, R., Harsha, H. and Deepak, G.P., 2017. Multiresponse optimization of Artemia hatching process using split-split-plot design based response surface methodology. Scientific Reports 7:1-16.	10.01	10.01	8
12.	Asimi OA, Sahu NP (2016) Effect of antioxidant rich spices, clove and cardamom extracts on the metabolic enzyme activity of *Labeo rohita*. Journal of Fisheries & Livestock Production 4:157.	-	2.0	11
13.	Banerjee T, Datta S, Munilkumar S, Mahapatra BK (2016). Culture of *Chlorella* spp. through replacement of expensive pure nutrient media with low cost commercial fertilizers. Environment & Ecology 34(3C):1430-1434.	4.18	4.18	-
14.	Banu, H. and Prasad, K.P., 2017. Role of Plasmids in Microbiology. Journal of Aquaculture Research and Development 8:466.	-	0.50	9
15.	Barman J, Jaiswar AK, Chakraborty SK, Bhattacharjya BK, Gopalkrishna (2016).Morphological variation in an anopthalmic specimen of *Sperata seenghala* (Sykes, 1839) from Brahmaputra river, Assam, India. Journal of Applied and Natural Science 8(2):905-909.	4.84	4.84	-
16.	Bera A, N.K. Chadha, SubrataDasgupta, Paramita Banerjee Sawant, W.S. Lakra. 2016. In vivo Ovarian and Testicular Stress Responses in Adult Koi Carp (*Cyprinus carpio*) Under Chronic Hypoxia. Ecology, Environment And Conservation, Vol 22 (3) 425-433.	4.89	3.66	-
17.	Bhagawati K, Chadha NK, Sarma D, Akhtar MS, Sawant PB, Simanku B (2016). Effect of dietary zinc on the growth and metabolic enzyme activities of golden mahseer (*Tor putitora*) fry. Journal of Applied and Natural Science 8(3):1692-1698.	4.84	4.84	1

18.	Bharti V, Pandey PK, Vennila A, Rajkumar M, Ajima MNO (2016). Water quality, survival and growth performance of *Cirrhinus mrigala* (Hamilton 1822) in substrate based tanks. Asian Fisheries Science 29:137-150.	4.55	4.55	3
19.	Bhendekar SN, Shenoy L, Raje SG, Chellappan A, Singh R (2016). Participatory GIS in trawl fisheries along Mumbai coast, Maharashtra. Indian Journal of Geo-Marine Sciences 45(8):937-942.	6.30	6.30	6
20.	Bhosale, M.M., Pawar, R.A., Sawant, M.S., Pavan-Kumar, A. and Lakra, W.S., 2017. Molecular characterization of portunid crabs (Charybdisferiatus, *Portuns pelagicus* and *P. sanguinolentus*) along Ratnagiri coast, Maharashtra, India. Journal of Experimental Zoology India, 20:47-51.	5.51	5.51	-
21.	Bhowmik A, Ramasubramanian V, Rai A, Kumar A, Kundu MG (2016). Improved estimation in logistic regression through quadratic bootstrap approach: An application in agricultural ergonomics. Journal of the Indian Society of Agricultural Statistics 70(3):227–235	5.46	5.46	-
22.	Bhushan, S., Vikas, and Jaiswar, A.K., 2017. A taxonomic note on *Cephalopsetta ventrocellatus* (Dutt & Rao, 1965) (family: Paralichthyidae, order: Pleuronectiformes) from north-west coast of India. Ecology Environment and Conservation 23(1):281-284.	4.89	4.89	-
23.	Chauhan AS, Ojha SN, Sharma A (2015) Self-efficacy and motivation: The indicators of empowerment among fishers of Tehri Reservoir. Ecology, Environment and Conservation 22:1-3,	4.89	4.89	-
24.	Chongtham B, Kumari N, Senapati S, Manjusha L, Nagalakshmi K, Balange AK, Chuksey MK, Venkateshwarlu G, Xavier, MKA (2016). *Sous vide* processed ready to cook seer fish steaks: process optimization by response surface methodology and its quality evaluation. Food Science and Technology Research 74:62-69.	6.45	6.45	5
25.	Chongtham B, Kumar PG, Hassan A, Desmukhe G , Xavier M K A , Venkateshwarlu G, Balange AK (2016). Process optimization and quality evaluation of extruded snacks fortified with Seaweed (*Ulva lactuca*). Journal of Environment and Biosciences 30(2): 289-297	4.43	4.43	-
26.	Das A, Kumar NR, Sharma R, Biswas P (2016) Return to scale and resource use efficiency in fish production in Tripura. Fishery Technology 53:339-343	5.25	5.25	2
27.	Das A, Kumar NR, Rani P (2016). Growth, instability and forecast of marine products export from India. Indian Journal of Fisheries 63(4):112-117	6.26	6.26	4

28.	DebRoy P, M. Krishnan, Anil Upadyay, V. Ramasubramainan, Keith R. Criddle, V.R. Kiresur and Samar Datta (2016) Resource distribution, growth and strategies for enhancing fish production in north-eastern states of India, Indian Journal of Fisheries 63(20): 1-7	6.26	6.26	-
29.	Fawole FJ, Sahu NP, Jain KK, Gupta S, Rajendran KV, Shamna N. Nalini Poojary (2016). Haemato-biochemical, non-specific immunity, antioxidant capacity and histopathological changes in *Labeo rohita* fingerlings fed rubber protein isolate. Fish Physiology and Biochemistry 43(3):677-690.	7.74	7.74	8
30.	Fawole FJ, Sahu NP, Jain KK, Gupta S, Shamna N, Phulia V, Prabu DL (2016). Nutritional evaluation of protein isolate from rubber seed in the diet of *Labeo rohita*: Effects on growth performance, nutrient utilization, whole body composition and metabolic enzymes activity. Animal Feed Science and Technology 219:189-199.	8.59	8.59	14
31.	Fernandes J, Pal AK, Kumar P, Chandrachoodan PP, Akhtar MS (2016). Combined effect of heat shock and chlorine fails to elicit acquired thermal tolerance in *Labeo rohita* spawns. Proceedings of the National Academy of Sciences, India Section B: Biological Sciences 86(3):537-542.	-	2.0	2
32.	Gashaw T, Dube K, Chaturvedi CS, Kumar B (2016). Assessment of reproductive performance, growth and survival of hybrids of African catfish (*Clarias gariepinus*) and Indian Catfish (*Clarias batrachus*) compared to their parental lines crosses. Turkish Journal of Fisheries and Aquatic Science 16:123-133.	6.74	6.74	4
33.	Gawa S, Kumar NR, Wani, GB, Hatte VM, Vinay A (2016). Mapping the core processes and identifying actors along with their roles, functions and linkages in trout value chain in Kashmir, India, International. Journal of Biological, Biomolecular, Agricultural, Food and Biotechnological Engineering 10(6):359-363.	-	0.50	2
34.	Gladston, Y., Manoharmayum, S.D., Xavier, M.K.A., Kamat, S., Chakraborty, S.K., Om, P.K.R. and Shenoy, L., 2017. Design and gillnet selectivity of *Pampus argenteus* along the Satpati coast, Maharashtra, India. Regional Studies in Marine Science 9:156-161.	7.46	7.46	4
35.	Harsha, H., Verma, A.K., Rathore, G., Prakash, C., Banerjee, P., Babitha, Rani, A.M., Ahmad, I.H., 2017. Enhanced growth and immunophysiological response of genetically improved farmed tilapia in indoor biofloc units at different stocking densities. Aquaculture Research. doi:10.1111/are.13256.	7.50	7.50	19

36.	Hassan A, Kumar R, Singh BC, Xavier MKA, Balange AK (2016). Effect of cryoprotectants on the quality of *Pangasius hypophthalmus* mince during refrigerated storage. Journal of Environment and Bioscience 30(2): 283-288.	4.43	4.43	2
37.	Hussan,A. Choudhury, T. GC. Prakash, G. Tripathi, Jayasankar, P., Chadha,N. K. Sundaray J. K. and Dhamotharan, K(2016).Feasibility of using diluted and chemically treated wastewater for fish culture. Fishery Technology 53: 96-104	5.25	5.25	-
38.	Ilham I, Fotedar R, Munilkumar S (2016). Effects of organic selenium supplementation on growth, glutathione peroxidase activity and histopathology in juvenile barramundi (*Lates calcarifer* Bloch 1970) fed high lupin meal-based diets. Aquaculture 457:15–23.	9.02	9.02	20
39.	Jakhar, J.K., Pal, A.K., Vardia, H.K., Sahu, N.P., Gupta, S., Venkateswarlu G (2017). Effect of dietary protein levels and lipid sources on growth performance and body composition of striped catfish, *Pangasianodon hypopthalmus* (Sausage (1878) advanced fingerling. Environment, Ecology and Conservation 35:351-357.	4.18	2.98	-
40.	Jayaramu, P.K., Tripathi, G., Pavan-Kumar, A., Keezhedath, J., Pathan, M.K. and Kurcheti, P.P., 2017. Studies on expression pattern of toll-like receptor 5 (TLR5) in *Edwardsiella tarda* infected *Pangasianodon hypophthalmus*. Fish and Shellfish Immunology 63:68-73.	9.30	9.30	13
41.	Joshua NE, Ojha SN (2016). Aquaculture promotion through agricultural technology management agency-a case study in Kerala. Indian Journal of Fisheries 63(3):105-109.	6.26	6.26	-
42.	Kasagala, K., Prasad, K.P., Makesh, M. and Gireesh-Babu, P., 2017. Profile and protective role of 61kDa and 47kDa antigens of *Edwardsiella tarda* in rohu (*Labeo rohita*). Iranian Journal of Aquatic Animal Health 2(2):67-87.	-	1.5	1
43.	Kasagala KHDT, Prasad KP, Makesh M, Gireesh-Babu P (2016). Comparative protective antigenicity of 37 Kda major outer membrane protein (Omp) and 61 Kda whole cell extracted protein of *Edwardsiella tarda* in Rohu (*Labeo rohita*). Vaccines and Vaccination 1(1):000104.	-	1.5	1
44.	Kubal P, Ambekar A, Prakash C, Sawant P, Pal AK, Lakra WS (2016). Assessment of macrofauna around Tarapur Atomic Power Station (TAPS), Maharashtra, India. Research Journal of Marine Sciences E-ISSN 2321:1296.	-	2.0	1

45.	Kulkarni, B., Babar, A., Jaiswar, A.K. and Kolekar, R., 2017. Present status of intertidal biodiversity in and around Mumbai, west coast of India. Transylvanian Review of Systematical and Ecological Research (Online) 2344-3219.	-	2.0	2
46.	Kumar A, Harikrishna V, Reddy AK, Chadha NK, Babitha Rani AM (2016). Effect of salinity on proximate composition of *Pangasianodon hypophthalmus* reared in inland saline water. International Journal of Zoology Studies 1 (3):19-21.	-	0.50	3
47.	Kumar A., Harikrishna, V., Reddy, A.K., Chadha, N.K., Babitha, Rani, A.M., 2017. Salinity tolerance of *Pangasianodon hypophthalmus* in inland saline water: Effect on growth, survival and haematological parameters. Ecology Environment and Conservation 23(1):475-482.	4.89	4.89	7
48.	Kumar B, Sharma R, Lakra WS, Sharma A, Prakesh S, Sharma MM (2016). Economic assessment of shrimp farming (*Litopenaeus vannamei*) in Gujarat - A profitable venture. International Journal of Innovative Research in Science, Engineering and Technology 5 (8):14376-14384	-	0.50	6
49.	Kumar MS, Pal AK (2016). A review of bioactive compounds from marine organisms with special mention on the potential of marine sponges in pharmacological applications. Journal of the Marine Biological Association of India 58(1):84.	5.28	5.28	5
50.	Pavan-Kumar A, Raman S, Koringa GP, Patel N, Shah T, Singh KR, Krishn G, Joshi CG, Gireesh-Babu P, Chaudhari A (2016). Complete mitochondrial genome of threatened mahseer *Tor tor* (Hamilton 1822) and its phylogenetic relationship within Cyprinidae family. Journal of Genetics 95(4):853-863.	7.36	7.36	1
51.	Kumar R, Kumar NR, Katiha PK, Krishnan M, Prakash S, Kumar M (2016). Economic impact of aquaculture in floodplains - a case study of Sonmar Chaur in Bihar, India. Indian Journal of Fisheries 63(3):99-104.	6.26	6.26	2
52.	Kumar R, Kumar NR, Kishore P. Kumar M, Prakash S, Kumar S (2016). Fish Marketing in Chaur areas of Bihar - A Study of disposal pattern, price spread and marketing efficiency. Fishery Technology 53:320-325.	5.25	5.25	-
53.	Kumar S, Dar SA, Srivastava PP, Aklakur MD, Muralidhar PA, Gireeshbabu P, Gupta S (2016). Quantitative expression of MYOD Regulatory factor in *Pangasianadon hypophthalmus* (Sauvage, 1878) fingerlings for optimization of dietary protein. The Bioscan 11(4):2077-2082.	5.26	5.26	4

54.	Kumar S, Kumar ST, Vidya R, Pandey PK (2016). A prospective of epidemiological intervention in investigation and management of argulosis in aquaculture. Aquaculture International 25:303-325.	7.46	7.46	4
55.	Kumar, S., Raman, R.P., Prasad, K.P., Srivastava, P.P., Kumar, S. and Rajendran, K.V., 2017. Modulation of innate immune responses and induction of oxidative stress biomarkers in *Pangasianodon hypophthalmus* following an experimental infection with dactylogyrid monogeneans. Fish and Shellfish Immunology, 63:334-43.	9.30	9.30	8
56.	Kumari, K. N. R., Reddy, V. R., Preatham, V. C., Kumar, D. S., Sen, A. R. and Rama Rao, S. V. 2016. Effect of supplementation of Crystalline Lysine and Threonine on performance of WL Layers in tropics during summer. Trop. Animal Heal. Prod. DOI 10.1007/s11250-016-1003-z.	6.87	6.87	-
57.	Kumari N, Chongtham B, Kumar R, Xavier KAM, Lekshmi M, Venkateshwarlu G, Balange AK (2016). Development of ready-to-eat Pangasius steaks by improved Sous-vide process. Journal of Food Science and Technology 53(11):4007-4013.	7.85	7.85	4
58.	Kumari, P., Pavan-Kumar, A., Kumar, G., Alam, A., Parhi, J., Gireesh-Babu, P., Chaudhari, A. and Krishna, G. 2016. Genetic diversity and demographic history of the giant river catfish *Sperata seenghala* inferred from mitochondrial DNA markers. Mitochondrial DNA, DOI:10.1080/24701394.2016.1209195	6.00	6.00	1
59.	Kumari, S., Hassan, M.A., Lianthuamluaia, S.K.M., Mishal, P., Kumar, V., Sarkar, U.K., Jaiswar, A.K., Deshmukhe, G. and Shenoy, L., 2017. Influence of environmental factors on rotifer abundance and biomass in a shallow, tropical oxbow lake, West Bengal. The Bioscan 11(2):129-135.	5.26	5.26	-
60.	Laishram M , Rathlavath S, Lekshmi M, Kumar S, Nayak BB (2016) Isolation and characterization of *Arcobacter* spp. from fresh seafood and the aquatic environment. International Journal of Food Microbiology 232(2): 87-89.	10.01	10.01	23
61.	Lekshmi, M., Ammini, P., Kumar, S., Varela, M.F., 2017. The food production environment and the development of antimicrobial resistance in human Pathogen of animal origin. Microorganisms 5:11.	-	2.0	62
62.	Mahapatra BK, Vinod K, Lakra WS (2016). Biology of the ornamental cyprinid fish *Danio dangila* (Hamilton, 1822) from the North-eastern hill region of India. Indian Journal of Fisheries 63(4):122-125.	6.26	6.26	1
63.	Mandal S, Jena JK, Singh RK, Mohindra V, Lakra WS, Deshmukhe G, Pathak A, Lal KK (2016). De novo development and characterization of polymorphic microsatellite markers in a schilbid catfish, *Silonia silondia*	6.98	6.98	7

	(Hamilton, 1822) and their validation for population genetic studies. Molecular Biology Rep DOI 10.1007/s11033-016-3941-y			
64.	Manoharmayum, S.D., Gladston, Y., Xavier, M.K.A., Kamat, S., Chakraborty, S.K. and Latha, S., 2017. Trend of gillnet fishery along the Maharashtra coast of India: A case study. Regional Studies in Marine Science 10:32-37.	7.46	7.46	1
65.	Mehta N, Balange AK, Manjusha L, Nayak B.B, (2016). Changes in dynamic viscoelastic and functional properties of Indian squid mantle during ice storage. Journal of Food Processing and Preservation. 41(3): 12891.	6.89	6.89	1
66.	Mehta RK, Ojha SN, Yadav V, Rai SC, Kumar S (2016). A study on innovativeness and regulating conflicts between the fishers and farmers in the Balua wetland. Journal of Applied and Natural Science 8(2):951-959.	4.84	4.84	-
67.	Mugaonkar PH, Kumar NR, Shelar G, Biradar RS and Rao KG (2016). Delineation of supply chain of Pangasius in India: A Case of Andhra Pradesh. Current World Environment 11(3):907-915.	4.98	4.98	1
68.	Neha S, Singh PR, Dube K, Tiwari VK (2016). Population dynamics and reproductive biology of *Barilius bendelisis* (Cyprinidae: Cypriniformes) from river Gaula, Central Indian Himalaya. Revista de Biología Tropical 64(3):1287-1295.	6.58	6.58	-
69.	Ojha ML, Chadha NK, Saini VP, Damroy S, Prakash C, Banerjee SP (2016). Growth, metabolism and haematological parameters of *Labeo rohita* (Hamilton, 1822) fingerlings fed with herbal supplemented diet. International Journal of Fisheries and Aquatic Studies 4(6):357-363.	3.99	3.99	1
70.	Pandey B, Desai VV, Suryanarayana SV, Nayak BK, Saxena A, Mirgule ET, Santra S, Mahata K, Makawana R, Abhangi M, Basu TK (2016). Measurement of Fe 55 (n, p) cross sections by the surrogate-reaction method for fusion technology applications. Physical Review C 93(2):021602.	-	2.0	8
71.	Pandey, P.K., Ajimaa, M.N.O., Kumar, K., Poojary, N., Kumar, S., 2017. Evaluation of DNA damage and physiological responses in Nile tilapia, *Oreochromis niloticus* (Linnaeus, 1758) exposed to sub-lethal diclofenac (DCF). Aquatic Toxicology 186:205-214.	9.79	9.79	16
72.	Paria, A., Deepika,A. Sreedharan, K. Makesh, M. Chaudhari, A. Purushothaman, C.S. Thirunavukkarasu, A.R. RajendranK.V. (2016). Identification of Nod like receptor C3 (NLRC3) in Asian seabass, *Lates calcarifer*: Characterisation, ontogeny and expression analysis after experimental infection and ligand stimulation. Fish and Shellfish Immunology 55:602-612	9.30	9.30	21

73.	Paria, A., Deepika, A., Sreedharan, K., Makesh, M., Chaudhari, A., Purushothaman, C.S., Rajendran, K.V., 2017. Identification, ontogeny and expression analysis of a novel laboratory of genetics and physiology 2 (LGP2) transcripts in Asian seabass, *Lates calcarifer*. Fish and Shellfish Immunology 62:265-275.	9.30	9.30	8
74.	Paria A, Dong J, Babu PPS, Makesh M, Chaudhari A, Thirunavukkarasu AR, Purushothaman CS, Rajendran KV (2016). Evaluation of candidate reference genes for quantitative expression studies in Asian seabass (*Lates calcarifer*) during ontogenesis and in tissues of healthy and infected fishes. Indian Journal of Experimental Biology 54(9):597-605	6.93	6.93	13
75.	Patil R, Lakra WS, Jahageerdar S, Krishna G, Pal AK (2016). Studies on fresh milt parameters and cellular changes during cryopreservation of spermatozoa of Deccan mahseer *Tor khudree* (Sykes, 1839). Indian Journal of Fisheries 63(1).	6.26	6.26	1
76.	Paul M, Prasad KP, Rathore G, Kundan K, Sharma R (2016). In-vitro and in-vivo antibacterial effect of five different sizes of silver nanoparticles (Ag-NPs) in *Labeo rohita*. Indian Journal of Animal Sciences 86(8): 964–971	6.23	6.23	1
77.	Pawar N, Gireesh-Babu P, Sivasubbu S, Chaudhari A (2016). Transgenic zebrafish biosensor for the detection of cadmium and zinc toxicity. Current Science 111(10):1697-1701	6.76	6.76	1
78.	Phulia V, Sardar P, Sahu NP, Shamna N, Fawole FJ, Gupta S, Gadhave PD (2016). Replacement of soybean meal with fermented *Jatropha curcas* kernel meal in the diet of *Labeo rohita* fingerlings: Effect on Hemato-biochemical and Histopathological Parameters. Journal of the World Aquaculture Society. Doi:10.1111/jwas.12379	7.39	7.39	5
79.	Ponnusamy K, Kamala K, Munilkumar S, Pal AK (2016). Antioxidant Properties from tissue extract of cephalopods around Madras Atomic Power Station, Kalpakkam Coast. International Journal of Pharma Research and Health Sciences 4 (2):1086-91.	-	2.0	2
80.	Ponnusamy K, Munilkumar S, Das S, Verma A, Venkitesan R, Pal AK (2016). Shellfish resources around Madras Atomic Power Station Kalpakkam, Southeast India. Journal of Asia-Pacific Biodiversity. http://dx.doi.org/10.1016/j.japb.2016.04.005	-	2.0	3
81.	Poojashree, J.K., Tripathi, G., Pavan Kumar, A., Jeena, K., Khan, M.A., Prasad, K.P., 2017. Studies on expression pattern of tolllike receptor 5 (TLR5) in *Edwardsiella tarda* infected *Pangasianodon hypophthalmus*. Fish and Shellfish Immunology. doi.org/10.1016/	9.30	9.30	13

	j.fsi.2017.01.041			
82.	Prabu, D.L., Sahu, N.P.,Pal, A.K., Dasgupta, S. and Narendra, A. (2016). Immunomodulation and interferon gamma gene expression in sutchi cat fish, *Pangasianodon hypophthalmus*: effect of dietary fucoidan rich seaweed extract (FRSE) on pre and post challenge period. Aquaculture Research, 2014, 1–20.	7.50	7.50	20
83.	Pradhan A, Mahapatra BK (2016). First record of the Two-Spot Razorfish, *Iniistius bimaculatus* (Perciformes: Labridae) From Digha, north-East Coast of India. Cuademos de Investigacion UNED 9(1):115-118.	-	2.0	7
84.	Pradhan RK, Deshmukh VD, Chakraborty SK, Chellapan A, Jaiswar AK, Roul SK (2017). Length weight relationship and morphological studies of Big eye shad *Ilisha filigera* (Val. 1847) in Mumbai water. Indian Journal of Geo Marine Science 46(1):102-106	6.30	6.30	-
85.	Prasad KP, Shyam KU, Husne B, Jeena K, Rahul K (2016). Infectious Myonecrosis Virus (IMNV) – An alarming viral pathogen to *Penaeid* shrimps. Aquaculture. dx.doi.org/10.1016/j.	9.02	9.02	13
86.	Rahandale S, Chakraborty SK, Jaiswar AK, Shenoy L, Raje S (2016). Preliminary study of growth and mortality of *Escualosa thoracata* (Valenciennes, 1847) from Mumbai waters. Indian Journal of Geo-Marine Science 45(2):290-295.	6.30	6.30	3
87.	Ram R, Singh V, Dwivedi A, Deshmukhe G (2017). Marine algal abundance and diversity along the intertidal region of Raigad district, Maharashtra, India. Ecology, Environment and Conservation 23(2):875-881.	4.89	4.89	-
88.	Rani P, Kumar NR (2016). Status and competitiveness of fish exports to European Union. Fishery Technology 53:69-74.	5.25	5.25	4
89.	Ranjith L, Shukla SP (2016). Column mode removal of copper through physically entrapped algal bioadsorbents. Indian Journal of Chemical Technology 23:527-532.	6.35	6.35	-
90.	Rasal A, Roy S, Rana RS, Murali S, Krishna G, Gupta S, Gireesh-Babu P (2016). Molecular cloning and nutritional regulation of putativeΔ 6 desaturase mRNA from striped catfish (*Pangasianodon hypophthalmus*). Aquaculture 451: 413-420.	9.02	9.02	9
91.	Rather MA, Bhat IA, Rather P, Gireesh-Babu P, Chaudhari A, Sundaray JK, Sharma R (2016). In silico analysis and expression studies of Kisspeptin gene in Catla catla. Journal of Biomolecular Structure and Dynamics http://dx.doi.org/10.1080/07391102.2016.1222970	9.31	9.31	10
92.	Rather MA, Bhat IA, Sharma N, Gora A, Ganie PA, Sharma R (2016). Synthesis and characterization of	7.50	7.50	3

	Azadirachta indica constructed silver nanoparticles and their immunomodulatory activity in fish. Aquaculture Research. DOI 10.1111/are.13199.			
93.	Ravi C, Dube K, Babu SPP, Roy DS, Sharma R, Rao SP, Prasad KJ, Raymond AJJ (2016). Comparison of reproductive performance of *Clarias batrachus* (Linnaeus, 1758) collected from three Indian rivers. Indian Journal of Fisheries 63(3):57-62.	6.26	6.26	1
94.	Sadawarte RK, Chakraborty SK, Sadawarte VR, Tasaduq SH, Naik D, Shenoy L, Landage AT, Kumar T (2016). Biometric studies on greater lizard fish *Saurida tumbil* (Bloch 1795) along Ratnagiri coast of Maharashtra. Indian Journal of Geo-Marine Science 45(10):1310-1316.	6.29	6.29	2
95.	Saha H, Pal AK, Sahu NP, Saha RK (2016). Feeding pyridoxine prevents *Saprolegnia parasitica* infection in fish Labeo rohita. Fish & Shellfish Immunology 59:382-388.	9.30	9.30	9
96.	Sankar KR, Chadha NK, Roy Dam S, Sawant BP, Saharan N, Krishnan P (2016). Growth and survival of marine sponges, Stylissa massa (Carter, 1887) and *Liosina paradoxa* (Thiele, 1899) in sea and land based culture systems. Indian Journal of Fisheries 63(4):55-60.	6.26	6.26	2
97.	Sankar KR, Chadha NK, Roy S, Sawant PB, Saharan N, Krishnan P (2016). Marine sponges as Biological indicators of oligotrophic Andaman waters. Indian Journal of Geo-Marine Sciences 45(2):338-341.	6.30	6.30	7
98.	Senapati SR, Kumar GP, Singh CB, Xavier KAM, Balange AK (2017). Melanosis and quality attributes of chill stored farm raised White Leg Shrimp (*Litopenaeus vannamei*). Journal of Applied and Natural Science 9(1):626 - 631.	4.84	4.84	4
99.	Senapati SR, Singh CB, Hassan MA, Vignaesh D, Xavier KAM, Balange AK (2016). Effect of solvents extraction on total phenolics and antioxidant activity of extracts from *Sargassum tenerrimum* (J. Agardh, 1848) Journal of Environment and Bioscience 30(2):415-419.	4.43	4.43	-
100.	Shamna N, Sardar P, Sahu NP, Phulia V, Rajesh M, Fawole FJ, Pal AK, Angel G (2016). Heamato-immunological and physiological responses of *Labeo rohita* fingerlings to dietary fermented *Jatropha curcas* protein concentrate. Animal Feed Science and Technology http://dx.doi.org/10.1016/j.anifeedsci.2016.10.020.	8.59	8.59	11
101.	Satapathy S.R., Kumar, S., Sukdane, K., Shukla, S.P., 2017. Biogenic synthesis and characterization of silver nanoparticles and their effects against bloom forming algae and synergistic effect with antibiotics against fish pathogenic bacteria. Journal of Applied Phycology. DOI:10.1007/s10811-017-1091-9.	8.64	8.64	9

102.	Sharma. C, Krishna. G., Kumar, A.P., Nayak, S.K., 2017. Genetic variation in selected species of prawn of genus Macrobrachium using mitochondrial 16s rRNA. Journal of Cell and Tissue Research 17(1):6043-6046.	4.04	4.04	-
103.	ShashiKumar BN, Pandey PK, Kumar K, Kumar S (2016). Increase in temperature induces the malathion toxicity in *Pangasianodon hypophthalmus*: A short term acute test. Proceeding of the National Academy of Science: Biology. DOI :10.1007/s40011-016-0787-y	-	2.0	2
104.	Shete, A.P., A.K. Verma, N.K. Chadha, Chandra Prakash, R.M. Peter and Irshad Ahmad, 2016. Optimization of hydraulic loading rate in aquaponic system with common carp (*Cyprinus carpio*) and Mint (*Mentha arvensis*), Aquacultural Engineering, 72-73: 53-57.	8.14	8.14	21
105.	Shete, A.P., Verma, A.K., Chadha, N.K., Prakash, C., Nuwansi, K.K.T., 2017. Evaluation of hydroponic subsystem for the culture of common carp, *Cyprinus carpio* andmint, *Mentha arvensis* in an aquaponic system. Aquaculture International. DOI 10.1007/s10499-017-0114-5.	7.46	7.46	2
106.	Shikha R, Chakraborty SK, Jaiswar AK, Raje SG, Shenoy L (2016). Preliminary study on growth and mortality of *Escualosa thoracata* (Valenciennes,1847) from Mumbai waters. Indian Journal of Geo-Marine Science 45(2):290-295.	6.30	6.30	3
107.	Singh CB, Kumari N, Senapati S, Lekshmi M, Kannuchamy N, Balange AK, Chouksey MK, Venkateshwarlu G, Xavier KAMn (2016). *Sous-Vide* processed ready-to-cook seer fish steaks: process optimization by response surface methodology and Its quality evaluation LWT - Food Science and Technology 74: 62-69.	9.13	9.13	5
108.	Singh CB, Kumar GP, Hassan MA, Deshmukhe G, Xavier MKA, Venkateshwarlu G, Balange AK (2016). Process optimization and quality evaluation of extruded snacks fortified with seaweed (Ulva lactuca) Journal of Environment and Bioscience 30(2): 289-297.	4.43	4.43	-
109.	Singh, C.B., Xavier, K.A.M., Deshmukhe, G., Venkateshvarulu, G., Shitole, S.S., Balange, A.K., 2017. Fortification of extruded product with brown seaweed (*Sargassum tenerrimum*) and its process optimization by Response Surface Methodology. Waste and Biomass Valorization. D O I : 10.1007/s12649-017-9831-2.	8.36	8.36	4

110.	Singh DK, Ranjan A (2016). Comparative study on macro and micro nutrient profiling of selected freshwater, brackish water and marine water food fishes available in Kerala, India. Nutrition and Food Science International Journal. DOI.10.19080/NFSIJ.2016.01.555569.	5.26	5.26	1
111.	Singh, YJ, Ojha, SN, Pandey DK, Upadhyay AD, Ananthan PS, Bharati H, Mehta RK (2016). Extent of linkage among scientists, extension personnel and fish farmers in Tripura, India. Indian Research Journal of Extension Education 16(2):55-59.	4.81	4.81	2
112.	Sivaramakrishnan T, Sahu NP, Jain KK, Muralidhar AP, Saravanan K, Ferosekhan S, Praveenraj J, Artheeswaran N (2016). Optimum dietary lipid requirement of *Pangasianodon hypophthalmus* juveniles in relation to growth, fatty acid profile, body indices and digestive enzyme activity. Aquaculture International 25: 941.	7.46	7.46	4
113.	Sreedharan K, Deepika A, Paria A, Babu SPP, Makesh M, Rajendran KV (2016). Ontogeny and expression analysis of tube (interleukin-1 receptor-associated kinase-4 homolog) from *Penaeus monodon* in response to white spot syndrome virus infection and on exposure to ligands. Agri gene. http://dx.doi.org/10.1016/j.aggene.2016.10.002	-	2.0	2
114.	Sreekanth GB, Lekshmi MN, Chakraborty SK, Jaiswar AK, Zacharia PU, Vishnuradhan R, Singh NP, George DP (2016). Effect of monsoon on coastal fish diversity of Goa: an example from the gillnet fishery. Indian Journal of Fisheries 63(2):8-18.	6.26	6.26	7
115.	Sreekanth, G.B., Lekshmi, M.N., Chakraborty, S.K., Jaiswar, A.K., Singh, N.P., 2017. Seasonal fish species composition, CPUE and VPUE in the small scale fishery of a tropical monsoon estuary along southwest coast of India. Journal of Environmental Biology 38:1-9.	6.53	6.53	3
116.	Sugumar R, Jaiswar AK, Lakshmanan R, Chakraborty SK, Purushottama GB, Deshmukh V, Kavungal V, George RM (2016). An assessment on economic impact of growth overfishing of commercially important marine ariids along Mumbai, Northwest Coast of India. Current World Environment 11(2):531-536.	4.98	4.98	1
117.	Sukhdhane, K.S., Pandey, P.K., Ajima, M.N.O., Jayakumar, T., Vennila, A., Raut, S.M., 2017. Isolation and characterization of henanthrene- degrading bacteria from PAHs contaminated mangrove sediment of Thane creek in Mumbai, India. Polycyclic Aromatic Compounds, D O I : 1 0 . 1 0 8 0 / 1 0 4 0 6 6 3 8 .2016.1261911.	7.24	7.24	4

118.	Sunil, A.S., Jayasankar, J., Krishnan, M., Landge, A., Shenoy, L., 2017. Towards attaining sustainable fishing operations in Kerala. Indian Journal of Geo Marine Sciences 46(3):493-496.	6.30	6.30	1
119.	Swain S, Chadha NK, Sundaray JK, Sawant PB, Prajnadarsini EMC (2016). Effect of vitamin C dietary supplementation on growth and survival of grey mullet, *Mugil Cephalus* (Linnaeus, 1758) Fry. Asian Journal of Microbiology, Biotechnology and Environmental Sciences 18(3):91-95.	4.93	4.93	1
120.	Thangam CN, Landge A, Sharma A, Shenoy L, Simanku B, Satish KK, Nightingale DB, Bharti H (2016). Perception of fishers on the impact of anthropogenic activities on fish diversity of Iril river, Manipur. Journal of Experimental Zoology 19(1):411-415.	5.51	5.51	-
121.	Tibile RM, Sawant PB, Chadha NK, Lakra WS, Prakash C, Swain S, Bhagawati K (2016). Effect of stocking density on growth, size variation, condition index and survival of discus, *Symphysodon aequifasciatus* Pellegrin, 1904. Turkish Journal of Fisheries and Aquatic Sciences 16:453-460.	6.74	6.74	4
122.	Tok, N. C., Jain, K. K., Prabu, D. L., Sahu, N. P., Munilkumar, S., Pal, A. K., Siddiah, G. M. and Kumar, P. (2016), Metabolic and digestive enzyme activity of *Pangasianodon hypophthalmus* (Sauvage, 1878) fingerlings in response to alternate feeding of different protein levels in the diet. Aquaculture Research. doi:10.1111/are.13122	7.50	7.50	4
123.	Verma A, Ponnusamy K, Das S, Munilkumar S, Pal AK (2016). Marine fish diversity at Kalpakkam coast sites of Tamil Nadu. Regional Journal of Marine Sciences 4(5):1-6.	7.46	7.46	-
124.	Vidya, R., Makesh, M., Purushothaman, C. S., Chaudhari, A., Gireesh-Babu, P. and Rajendran, K. V. 2016. Report of leucine-rich repeats (LRRs) from *Scylla serrata*: Ontogeny, molecular cloning, characterization and expression analysis following ligand stimulation, and upon bacterial and viral infections. Gene, 15:159-68.	8.64	8.64	7
125.	Vijayan DK, Jayarani R, Singh DK, Chatterjee NS, Mathew S, Mohanthy BP, Sankar TV, Anandan R (2016). Comparative studies on nutrient profiling of two deep sea fish (*Neoepinnula orientalis* and *Chlorophthalmus corniger*) and brackish water fish (*Scatophagus argus*). The Journal of Basic and Applied Zoology. DOI.10.10.16/j.jobaz.2016.08.003.	-	2.0	4

126.	Vikas, Shashibhushan, Kumar R, Gangan SS, Jaiswar AK (2016). Discrimination of species of genera Grammoplites and Cociella (Family: Platycephalidae) occurring in Indian waters, based on multi-variate analysis. Indian Journal of Ecology 43(1):58-64	4.96	4.96	-
127.	Vinay A, Ramasubramanian V, Kumar NBT (2016). Constraint analysis of tuna fisheries in Lakshadweep. Indian Journal of Ecology 43(Special Issue 2):789-792.	4.96	4.96	-
128.	Xavier MKA, Geethalekshmi V, Senapati SR, Mathew PT, Joseph AC, Nair KGR (2016). Valorization of squid processing waste as animal feed ingredient by acid ensilaging process. Waste and Biomass Valorization DOI: 10.1007/s12649-016-9764-1.	8.36	8.36	4
129.	Yadav VK, Jahageerdar S, Ramasubramanian V, Bharti VS, Adinarayana J (2016). Use of different approaches to model catch per unit effort (CPUE) abundance of fish. Indian Journal of Geo Marine Science 45(12):1677-1687.	6.30	6.30	2
130.	Yengkokpam S, Debnath D, Sahu NP, Pal AK, Jain KK, Baruah K (2016). Dietary protein enhances non-specific immunity, anti-oxidative capability and resistance to Aeromonas hydrophila in *Labeo rohita* fingerlings pre-exposed to short feed deprivation stress. Fish & Shellfish Immunology 59: 439-446.	9.30	9.30	11
Total		**798.27**	**888.84**	**726**

	2015-2016			
1.	Aderolu A.Z. and Sahu. N. P. 2015. Growth Performance, Nutrient Utilization, Metabolic and Digestive Enzymes Studies in Mrigal (Cirrhinusmrigala) Juveniles Fed Graded Levels of Carbohydrate. The israeli journal of aquaculture - Bamidgeh 67: 0.4	6.29	6.29	1
2.	Adiga, S., Ananthan, P.S., Ramasubramanian, V. and Kumari, Divya, H.V., 2015. Validating RAPFISH sustainability indicators: Focus on Multidisciplinary Aspects of Indian Marine Fisheries, Marine Policy, 60: 202-207.	-	0.50	10
3.	Agarwal, D., Aich, N., Pavan Kumar, A., Kumar, S., Sabnis, S., Joshi, C.G., Koringa, P., Pandya D., Patel, N., Karnik, T., Bhingarde, R., Gireesh-Babu, P. and Chaudhari, A., 2016. SNP mining in transcripts and concomitant estimation of genetic and variation in Macrobrachium rosenbergii stocks. Conservation Genetics Resources, DOI 10.1007/s12686-016-0528-9.	7.15	7.15	5
4.	Aklakur, M., Rather, M. A. and Kumar, N., 2015. Nano delivery:An Emerging avenue for Nutraceuticals and Drug delivery. Critical Reviews in Food Science and Nutrition. DOI:10.1080/10408398.2013.839543	12.70	12.70	29
5.	Alam, A., Chadha, N.K., Joshi, K.D., Chakraborty, S.K., Sawant, P.B., Kumar, T. and Sharma, A.P., 2015. Maturation profile and fecundity of the Oreochromis niloticus in the river Yamuna. India. Journal of Environmental Biology, 36 (4): 927-931.	6.56	4.92	5
6.	Angel, G., Sardar, P. and Phulia, V., 2015.Effects of defatted jatropha kernel meal on hematological and serum biochemical parameters of *Labeo rohita* (Ham.) fingerlings. *Journal of Experimental Zooogy*, India, 18(2): 619-623.	5.51	5.51	2
7.	Antony, J., Haikrishna, V., Saharan, N., Reddy, A.K., Chadha, N.K., Lakra, W.S. and Roy, L.A., 2015. Effects of salinity and Na+/K+ ratio on osmoregulation and growth performance of black tiger prawn (*Penaeus monodon*, Fabricius, 1798) juveniles reared in inland salinewater. *Journal of the World Aquaculture Society*, 46(2):171- 182.	7.39	7.39	11
8.	Anuraj, A., Tiwari, V. K., Suresh Babu, P.P., Sreekanth, G. B. and Srinivasa Rao, P., 2015. Portals of entry of gram-negative bacteria in a freshwater prawn hatchery. *Journal of Applied Aquaculture*, 27:150-159. (0.60)	-	2.0	1

9.	Aravind, R., V.S. Bharti, M. Rajkumar, P.K. Pandey, C.S. Purushothaman, A. Vennila and S.P. Shukla (2015). Chelating Agent Mediated Enhancement of Phytoremediation Potential of Spirodela polyrhiza and Lemna minor for Cadmium Removal from the Water. Scientific and Research Publications 5:3	-	0.5	-
10.	Bhat, I.A., Rather, M.A., Saha, R. and Sharma, R., 2015. Identification and expression analysis of thyroid stimulating hormone receptor (TSHR) in fish gonads following LHRH treatment. *Proceedings of the National Academy of Sciences, India -Section B: Biological Sciences*, DOI 10.1007/s40011-015-0640-8.	-	2.0	11
11.	Bhat, I.A., Rather, M.A., Saha, R., Gireesh-Babu, P., Pavan-Kumar, A., and Sharma, R., 2016.Expression analysis of Sox9 genes during annual reproductive cycles in gonads and after nanodelivery of LHRH in *Clarias batrachus*. *Research in Veterinary Science*, 106: 100–106.	7.75	7.75	20
12.	Bhattacharya, S., Mahapatra, B.K. and Maity, J., 2015. Morphological identification of a near threatened ornamental fish, Ctenopsnobilis. *International Journal of Science and Research*, 4(8): 220-222.	-	2.0	3
13.	Chakraborty, T., Zhou, L. Y., Chaudhari, A., Iguchi, T., Nagahama, Y., 2015. Dmy initiates masculinity by altering Gsdf/Sox9a2/Rspo1 expression in medaka (*Oryzias latipes*). *Scientific Reports*, 6:19480. DOI: 10.1038/srep19480.	10.01	7.50	21
14.	Chandra, S., Singh, S.K., Gupta, S.D. and Sahoo, S.K., 2015. Mass specific oxygen uptake in the freshwater catfish *Wallago attu* (Bloch & Schneider, 1801). *Indian Journal of Fisheries*, 62(3): 137-140.	6.26		-
15.	Chaudhari, A., Gireesh-babu, P., Tripathi, G., Sabnis, S., Dhamotharan, K., Vardarajan, R., Kumari, K., Dasgupta, S. and Rajendran, K.V., 2015. Expression studies on NA+/K+-ATPase in gills of *Penaeus monodon* (Fabricius) acclimated to different salinities. *Indian Journal of Experimental Biology*, 53: 273-280.	6.93	6.93	4
16.	Chrispin, C.L, Ananthan, P.S., Sugunan, V.V., Ramasubramanian, V., Panikkar, P. and Landge, A.T., 2016. Fisheries and management status of Pechiparai reservoir in Tamil Nadu. *Current World Environment*, 11(1): 233-242.	4.98	4.98	3
17.	Ciji, A., Sahu, N.P., Pal, A.K. and Akhtar, M.S., 2015. Dietary L-tryptophan modulates growth and immuno-metabolic status of *Labeo rohita* juveniles exposed to nitrite. *Aquaculture Research*, 46 (8): 2013-2024.	7.50	7.50	17
18.	Das, R., Krishna, G., Priyadarshi, H., Gireesh-Babu, P. Rajendran, K.V., Reddy, A.K., Makesh, M., Chaudhari,	9.02	9.02	7

	maturation studies in Penaeus monodon by GIH silencing expressed long hairpin RNA. Aquaculture, 448(448):512-52(			
19.	Das, S., Datta, C.S. and Bhakta, S., 2015. Effect of inorganic phosphorus on acute toxicity of arsenic to *Cyprinus carpio var communis*. *Environment and Ecology*, 33(1A): 219-222.	4.18	4.18	-
20.	Dash, G., Raman, R.P., Pani Prasad, K., Makesh, M., Pradeep, M.A. and Swatipriyanka, S., 2015. Evaluation of paraprobiotic applicability of *Lactobacillus plantarum* in improving the immune response and disease protection in giant freshwater prawn, *Macrobrachium rosenbergii* (de Man, 1879). *Fish and Shellfish Immunology*, 43(1): 167–174.	9.30	9.30	44
21.	Datta, S. and Mahapatra, B.K., 2015. Effect of glyphosate and three phenoxyacetic acid herbicides against *Eichhornia crassipes* (Mart) and *Pistia stratiotesL. Pesticide Research Journal*, 27(1):75-83.	5.90	5.90	2
22.	Debnath, B., Krishnan, M., Ananthan, P.S., Debnath, B., Sharma, A. and Sharma, R., 2015. Fisheries of Gumti (Dumboor) Reservoir in Tripura: production, performance and management. *Indian Journal of Fisheries*, 62(3): 14-20.	6.26	6.26	-
23.	Debnath, C., Dube, K., Saharan, N., Tiwari, V.K., Datta, M., Sahoo, L., Yadav, G.S., and Das, P., 2015. Growth and production of endangered Indian butter catfish, *Ompok bimaculatus* (Bloch) at different stocking densities in earthen ponds. *Aquaculture Research*, DOI: 10.1111/are.12780.	7.50	7.50	4
24.	Dhaval, C., Bamaniya, Pavan Kumar, A., Gireesh-Babu, P., Sharma, N., Reang, D., Gopal Krishna and Lakra, W.S., 2015. DNA barcoding of marine ornamental fishes from India. *Mitochondrial DNA*, DOI: 10.3109/19401736.2014.1003923.	6.00	6.00	10
25.	FJ Fawole, NP Sahu, AK Pal, A Ravindran. 2015. Haemato-immunological response of Labeo rohita (Hamilton) fingerlings fed leaf extracts and challenged by Aeromonas hydrophila. Aquaculture Research. 345: 45-52	7.50	7.50	18
26.	Gupta SK., Pal,AK., Sahu,NP., Jha,AK. and Kumar, S., 2015. Effects of dietary microbial levan on growth performance, RNA/DNA ratio and some physio-biochemical responses of Labeo rohita (Hamilton) juveniles Aquaculture Nutrition 21 (6), 892-903	8.10	8.10	6
27.	Hussain, T., A.K. Verma, V.K. Tiwari, Chandra Prakash, G. Rathore, A.P. Shete and Neelam Saharan, 2015. Effect of water flow rates on growth of Cyprinuscarpio var. koi (Cyprinuscarpio L., 1758) and spinach plant in aquaponic system. Aquaculture International, 23:369–384	7.46	7.46	26

28.	Ilham, I., Fotedar, R., and Munilkumar, S. (2016). Effects of organic selenium supplementation on growth, glutathione peroxidase activity and histopathology in juvenile barramundi (Latescalcarifer Bloch 1970) fed high lupin meal-based diets. Aquaculture.457:15–23	9.02	9.02	20
29.	Irshad Ahmad. H, A.K. Verma, A.M. Babitha Rani, G. Rathore, Neelam Saharan, Adnan Hussain Gora, 2016. Growth, non-specific immunity and disease resistance of Labeorohita against Aeromonashydrophila in biofloc systems using different carbon sources, Aquaculture, 457: 61–67.	9.02	9.02	66
30.	Kumar, R., Jaiswar, A. K., Pavan-Kumar, A., Chakraborty, S. K., Jahageerdar, S. and Lakra, W. S. 2015. DNA barcoding of Thais species (Family: Muricidae) from west coast of India. Indian Journal of Fisheries, 62(2):92-97	6.26	6.26	-
31.	Kumar, S., Sahu,NP. andGal, D., 2015. Mitigation of immunosuppressive and oxidative stress effect of dietary gelatinized starch in Labeo rohita fingerlings by elevation of rearing temperature within optimum range. *Fish & shellfish Immunology* 47 (2), 868-877	9.30	9.30	2
32.	Kumar, S., Sahu, NP., Pal,AK., Kerepeczki,E., Sinha,AK. And Gal, D., 2015. Metabolic fitness and growth performance in tropical freshwater fish Labeo rohita are modulated in response to dietary starch type (gelatinized versus non-gelatinized) and water temperature. *Aquaculture Nutrition*. 76:34-41	8.10	8.10	4
33.	Kumar, S., Shyne Anand, P.S., De, D., Deo, A.D., Ghoshal, T.K., Sundaray, J.K., Ponniah, A.G., Jithendran, K.P., Raja, R.A. and Biswas, G., 2015. Effects of biofloc under different carbon sources and protein levels on water quality, growth performance and immune responses in black tiger shrimp *Penaeus monodon* (Fabricius, 1978) *Aquaculture Research*, DOI:10.1111/are.12958.	7.50	7.50	36
34.	Kumar, S., Shyne Anand, P.S., De, D., Deo, A.D.,Ghoshal, T.K., Sundaray, J.K., Ponniah, A.G., Jithendran, K.P., Raja, R.A. and Biswas, G., 2015 Effect of periphyton on microbial dynamics, immune response and growth performance in black tiger shrimp *Peaneus monodon*, Fabricus. *Indian Journal of Fisheries*, 62(3):67-74.	6.26	6.26	11
35.	Kumari, K.N.R., Reddy, V.R., Preetham, V.C., Kumar, D.S., Sen, A.R. and Rama Rao, S.V., 2016. Effect of supplementation of crystalline lysine on the performance of WL layers in tropics during summer. *Tropical Animal Health and Production*, DOI 10.1007/s11250-016-1003.	7.09	7.09	3

36.	Kunnath S, Lekshmi M, Chouksey MK, Kannuchamy K, Venkateshwarlu G, (2015) Textural quality and oxidative stability of restructured pangasius mince: effect of protein substrates mediated by transglutaminase. *Journal of Food Science and Technology* 52(1): 351-358.	7.85	7.09	15
37.	Lekshmi RGK, Anas KK, MnjushaLekshmi, BinayaBhusanNayak, Sanath Kumar (2016) Incidence of methicillin-resistant staphylococci in fresh Seafood. Advances in Microbiology 6:399-406.	7.0	2.0	18
38.	Mahapatra, B.K. and Dutta, S., 2015. Breeding and rearing of an exotic ornamental catfish, *Corydorus aeneus* (Gill, 1858) in Kolkata, West Bengal and its economics. *Proceedings of the Zoological Society*, 68(2): 159–163.	4.42	4.42	4
39.	Mahida, N., Kumar, N.R., Swadesh P., Gadkar, D. and Yunus, S., 2015. Economics of shrimp aquaculture and factors associated with shrimp aquaculture in Navsari District of Gujarat. *Ecology Environment and Conservation*, 21 (4):247-253.	5.02	5.02	4
40.	Majumdar, R.K., Saha, A., Dhar, B., Maurya, P.K., Roy, D., Shitole, S. and Balange, A.K., 2015. Effect of garlic extract on physical, oxidative and microbial changes during refrigerated storage of restructured product from Thai pangas (*Pangasianodon hypophthalmus*) surimi. *Journal of Food Science and Technology*, 52(12):7994–8003.	7.22	7.22	13
41.	Mallesh,B.,Pandey, P.K., Kumar, K., Vennila, A., Shukla, S.P.,Raman R.P., and Kumar S., (2015). Bioconcentration of hexavalent chromium in different organs and induction of micronuclei in peripheral blood cells of Cirrhinus mrigala (ham, 1822). *The Indian Journal of Animal Sciences*. 85(5):92-00	6.23	6.23	1
42.	Mandal, S., Jena, J.K., Rajeev, K., Singh, L., Mohindra, V., Lakra, W.S., Deshmukhe, G., Pathak,A. and Lal, K.K., 2016. De novo development and characterization of polymorphic microsatellite markers in a schilbid catfish, *Silonia silondia* (Hamilton, 1822) and their validation for population genetic studies. *Molecular Biology Reports*, DOI 10.1007/s11033-016-3941-y.	8.11	8.11	7
43.	Nagalakshmi, K., Pavan Kumar, A., Venkateshwarlu, G., Gireesh Babu, P. and Lakra, W. S., 2015. Mislabeling in Indian seafood: An investigation using DNA barcoding. *Food Control*. DOI:10.1016/j. foodcont.	10.25	10.25	39

44.	Nirupada, T.C., Landge, A.T., Sharma, A., Shenoy, L., Borah, S., Koushlesh, S.K., Devi, B. N., and Bharti, H., 2016. Perception of fishers on the impact of anthropogenic activities on fish diversity of Iril river, Manipur. *Journal of Experimental Zoology*, India 19(1) 411-415.	5.51	5.51	-
45.	Nuwansi, K.K.T., Verma, A.K., Chandra Prakash, Tiwari, V.K., Chandrakant, M.H., Shete, A.P and Prabhath G.P.W.A., 2015. Effect of water flow rate on polyculture of koi carp (*Cyprinus carpio* var. koi) and goldfish (*Carassius auratus*) with water spinach (*Ipomoea aquatica*) in recirculating aquaponicsystem. *Aquaculture International*, 24(1), 385-393	7.46	7.46	18
46.	Pailan, G.H., Sardar, P. and Mahapatra, B.K., 2015. Marigold petal meal: a natural carotenoid source for pigmentation in swordtail (*Xiphophorus helleri*). *Animal Nutrition and Feed Technology*, 15: 417-425.	6.31	6.31	3
47.	Parhi, J., Sahoo, l., Choudhury,J., Choudhry T., Baruah, A., Prasad, K.P., Makesh, M., (2015). Molecular characterization and expression analysis of interferon gamma (IFN) gene in *L. rohita* (Ham.). Aquaculture Reports 2: 97-105	7.89	5.10	8
48.	Prathvi, R., and Kumar, N.R., 2016. Status and competitiveness of fish exports to European Union. *Fishery Technology*, 53: 69–74.	5.25	5.25	4
49.	Priyadarshi, H., Das, R., Pavan-Kumar, A., Gireesh-Babu, P., Javed, H., Krishna, G., Makesh, M., and Chaudhari, A. 2015. Characterization and Evaluation of Selected House-keeping Genes for Quantitative RT-PCR in *Macrobrachium rosenbergii* Morphotypes. Fishery Technology, 52: 177 - 183	5.25	5.25	4
50.	Qureshi, N.W., Achoth, L., Krishnan, M., Prakash, S., Ananthan, P.S., Kumar, N.R. and Pandey, S.K., 2015. Misplaced priorities and lopsided investments: A macroscan of agriculture, livestock and fisheries sectors in India. *Agricultural Economics Research Review*, 28: 25-34.	5.68	5.68	1
51.	Qureshi, N.W., Krishnan, M. and Sundaramoorthy, C., 2016. Fish for all and fish of choice – growth, instability and stakeholders' response for enhancing fish production in major lakes of Kashmir. *Current Science*, 110(8): 1495-1504.	6.96	6.96	-

52.	Rajendran, K.V., Shivamb, S Praveenaa, P. E., Joseph Sahaya Rajana, J.Sathish Kumara, T., Avunjea, SV. Jagadeesana, S.V.A.N.V. Prasad Babua, Pandea A., Navaneeth Krishnana, A. Alavandia, S.V. and VijayanaK.K. (2016). Emergence of Enterocytozoan hepatopenaei (EHP) in farmed Penaeus (*Litopenaeus) vannamei* in India. Aquaculture, 454:272-280	9.02	9.02	60
53.	Raman, S., Pavan-Kumar, A., Koringa, G. P., Patel, N., Shah, T., Singh, K. R., Krishna, G., Joshi, C. G., Gireesh-Babu, P., Chaudhari, A. and Lakra, W. S. 2015. Ion torrent next-generation sequencing reveals the complete mitochondrial genome of endangered mahseerTor khudree (Sykes, 1839). MitochondrialDNA, DOI:10.3109/19401736.2015.1060455	6.00	6.00	10
54.	Rasal, A., Roy, S., Rana, R.S., Murali, S., Krishna, G., Gupta, S. and Gireesh-Babu, P., 2016. Molecular cloning and nutritional regulation of putative Δ 6 desaturase mRNA from striped catfish (*Pangasianodon hypophthalmus*). Aquaculture, 451, pp.413-420.	9.02	9.02	9
55.	Rather M.A., I.A. Bhat, Gireesh-Babu P., Chaudhari A., J.K. Sundaray, Sharma R., 2016. Molecular characterization of kisspeptin gene and effect of nano–encapsulted kisspeptin-10 on reproductive maturation in *Catla catla*. *Domestic Animal Endocrinology*, 56:36-47	8.30	8.30	28
56.	Rathlavath S, Mishra S, Kumar S, Nayak BB (2015) Incidence of Arcobacter spp. in fresh seafood from retail markets in Mumbai, India. *Annals of Microbiology* 66(1):165-170.	7.43	7.43	6
57.	Raymond Jani Angel, J., Tiwari, V.K., Suresh Babu,P.P.,KiranDubeRawat, Boby Ignatius, PramodKiran, R.B., Dam Roy, S., Charan, R., DeeptiR.Nair, SrinivasaRao, P. and Sreeramamurty, K.B. 2015. Captive breeding of a near threatened fish, pengba *Osteobrama belangeri* (Valenciennes, 1844) using three different inducing agents. *Indian Journal of Fisheries*. 62(4):66-70.	6.26	6.26	3
58.	Sahoo, l., Choudhury TG., Debnath, C., parhi, j., Datta, M., Purushothaman, CS., Prasad KP (2015). Immunostimulatory effect of Vit C on Haematological parameters of Labeo bata (ham. 1822). Fishery technology 53:59-63	5.25	5.25	1
59.	Sankar, M., Reddy, A.K., Suresh, E., Sharma, R. and GireeshBabu, P., 2015. Breeding and larval development of *Macrobrachium villosimanus* under captive condition. *Journal of Experimental Zoology*, 18(2): 851-856.	5.51	5.51	1

60.	Sarkar, S.D., Chaudhari, A., Deshmukhe G. and Gireesh Babu,P., 2015. Assessment of genetic diversity among *Sargassum* species from selected locations along the north-west coast of India. *Indian Journal of Fisheries*, 62(3): 161-165.	6.26	6.26	1
61.	Satapathy, S.R., Shukla, S.P., Sandeep, K.P., Singh, A. and Sharma, N., 2015. Evaluation of the performance of an algal bioreactor for silver nanoparticle production. *Journal of Applied Phycology*, 27:285-29.	8.40	8.40	28
62.	Satyanarayana, Y., Gireesh-Babu, P. and Jahageerdar, S. 2015. Parentage determination in the freshwater prawn Macrobrachium rosenbergii De Man, 1879 using microsatellite markers. Indian J. Fish., 62(2): 29-32.	6.16	6.16	1
63.	Saxena, N., Dube, K., Patiyal, R.S. and Tiwari, V.K., 2015. Meristic and morphometric differentiation in wild populations of *Barilius bendelisis* (Hamilton 1807) from Kumaon region of Uttarakhand, India. *Fishery Technology* , 52: 205–212.	5.25	5.25	1
64.	Shilta, M.T., Narinder Kumar Chadha, Pandey P.K. and Sawant PB, 2015. Effects of biofilm on water quality and growth of *Etroplus suratensis* (Bloch, 1790). Aquacult International DOI 10.1007/ s 10499 – 015-9956-x	7.46	7.46	20
65.	Suresh babu, P.P., Rami Reddy, P., Murali Mohan, K., Krishna Prasad, J., Patnaik, R.R.S. and Narasimhacharyulu, V., 2015. Evaluation of yield characteristics of short term farming practices of *Litopenaeus vannamei*. *Indian Journal of Fisheries*, 62(4):125-127.	6.26	6.26	-
66.	Sushree, S., Xavier, K.A.M., Nayak, B.B. and Balange, A.K., 2016. Quality evaluation of edible fish flour prepared from Indian oil sardine (*Sardinella longiceps*), *Journal of Food Processing and Preservation*, DOI:10.1111/jfpp.12982.	7.29	7.29	4
67.	Tambireddy, N., Tripathi, G., Gireesh Babu and Pavan Kumar, A., 2016. Molecular characterization and phylogeny of some mazocraeidean monogeneans from carangid fish. *Acta Parasitologica*, 61(2): 360-368.	6.97	6.97	5
68.	Tarachand, K., Shenoy. L., Chakraborty, S.K., Deshmukh, V.D. and Raje, S.G., 2015. Compliance of bag net fishery of Maharashtra coast, India with Article 7 of the FAO Code of Conduct for Responsible *Fisheries, Marine Policy*, 56: 9-15.	8.87	8.87	2
69.	Thaker M, Gudipati V, Kannuchamy N (2015) Protective edible coatings for fish in refrigerated storage. Journal of Food Process Engineering. doi.org/10.1111/jfpe.12270	7.45	7.45	14

70.	Tilahun, G., Dube, K., Chaturvedi, C.S. and Kumar, B., 2016. Assessment of reproductive performance, growth and survival of hybrids of African catfish (*Clarias gariepinus*) and Indian catfish (*Clarias batrachus*) compared to their parental lines crosses. Turkish Journal of Fisheries and Aquatic Science, 16: 123-133.	6.74	6.74	4
71.	Vartak, V.R., Narasimmalu, R., Pavan-Kumar, A., Singh, D.P. and W. S. Lakra, 2015. DNA barcoding detected improper labelling and supersession of crab food served by restaurants in India. *Journal of the Science of Food and Agriculture*, 95(2):359–366.	8.42	8.42	21
72.	Vinay, A., Ramasubramanian, V., Krishnan, M., Kumar, N.R. and Ayoob, A.E., 2016. Economic analysis of tuna pole and line fisheries in Lakshadweep. *Indian Journal of Geo-Marine Sciences*, ISSN 0379-5136.	6.30	6.30	6
73.	Xavier, B., Jain, K.K., Pal, A.K., Sahu, N.P., Maheswarudu, G., Gal, D. and Kumar, S., 2015. Mixed feeding schedule of low and high protein in the diet of *Labeo rohita* (Hamilton) fingerlings: effect on growth performance, haemato-immunological and stress responses. *Aquaculture Nutrition*, DOI: 10.1111/anu. 12286.	8.10	8.10	6
74.	Yadav R, Paria A. Mankame S., Makesh M., Chaudhari A., Rajendran KV (2015). Development of SYBR Green and TaqMan quantitative real-time PCR assays for hepatopancreatic parvovirus (HPV) infecting *Penaeus monodon* in India. Molecular and Cellular Probes, 1-7	8.51	8.51	9
Total		**560.14**	**574.60**	**847**

	2020-21	
S. No.	**Details of publications**	**NAAS Rating**
1.	Abdul AP, Raman M, Rohit P, Shenoy L, Jaiswar AK, Koya KM, Damodaran D 2020. Predicting potential fishing grounds of ribbonfish (Trichiurus lepturus) in the north-eastern Arabian Sea, using remote sensing data. *International Journal of Remote Sensing*, 42 (1): 322-342, DOI: 10.1080/01431161.2020.1809025	**7.65**
2.	Agarwal D, Gireesh-Babu P, Pavan-Kumar A, Koringa P, Joshi CG, Chaudhari A 2020. Transcriptome analysis of *Clarias magur* brain and gonads suggests neuro-endocrine inhibition of milt release from captive GnRH-induced males. *Genomics*, 112, 6, 4041-4052.	**9.12**
3.	Alam A, Chadha NK, Pavan-Kumar A, Chakraborty SK, Joshi KD, Sawant PB, Das SCS, Kumar J, Kumar T 2020. DNA Barcoding and Biometric Investigation on the Invasive *Oreochromis niloticus* (Linnaeus, 1758) from the River Yamuna of Uttar Pradesh. *Indian Journal of Animal Research*, (54):856-863.	**6.44**
4.	Angkha B, Verma AK, Kumar SH, Prakash C, Thomas RM 2020. Mobilization of mica by *Bacillus* sp. and its effect on Nile tilapia (*Oreochromis niloticus*) cum holy basil (*Ocimum tenuiflorum*)–based aquaponic system. Aquaculture International, 28: 2045-2058. https://doi.org/10.1007/s10499-020-00575-4	7.46
5.	Apang T, Xavier KAM, Lekshmi M, Kannuchamy N, Porayil L, Balange AK 2021. Garcinia Spp. extract containing icing medium as a natural preservative for quality enhancement of chilled mackerel (*Rastrelliger kanagurta*). *LWT - Food Science and Technology* 133: 110086 doi.org/10.1016/j.lwt.2020.110086	**9.63**
6.	Behera A, Roul KS, Pavan-Kumar A, Bhushan S, Gangan S, Jaiswar AK 2020. First Report Confirming the Occurrence of Jumping Halfbeak Hemiramphus archipelagicus Collette and Parin 1978 (Beloniformes: Hemiramphidae) from the Western Bay of Bengal India. *Thalassas: An International Journal of Marine Sciences* (2020) 36:239–243	**6.576**
7.	Bera A, Chadha NK, Dasgupta S, Chakraborty S, Sawant PB 2020. Hypoxia-mediated inhibition of cholesterol synthesis leads to disruption of nocturnal sex steroidogenesis in the gonad of koi carp, *Cyprinus carpio*. *Fish Physiol. Biochem*. 46, 2421-2435.	**7.73**
8.	Bera KK, Kumar S, Paul T, Prasad KP, Shukla SP, Kumar K 2020. Triclosan induces immunosuppression and reduces survivability of stiped catfish *Pangasianodon hypophthalmus* during the challenge to a fish pathogenic bacterium *Edwardsiella tarda*. *Environmental Research*, DOI http://doi.org/10.1016/j.envres.2020.109575	**11.03**
9.	Bhartendu V, Tripathi G, Prasad KP, Bedekar MK 2020. Development and partial characterization of primary cell culture from liver tissue of *Pangasianodon hypophthalmus*. *Journal of Entomology and Zoology Studies*. 8(2): 784-789.	**5.53**

10.	Bharti V, Jayasankar J, Shukla SP, George G, Ambrose TV, Augustine SK 2020. Study on sea surface temperature and chlorophyll-a concentration along the south-west coast of India. *Indian journal of Geo-marine Science*, 49 (1):51-56.	**6.30**
11.	Bhat RAH, Thakuria D, Pant V, Khangembam VC, Tandel RS, Shahi N, Sarma D, Tripathi G, Krishnani KK, Krishna G 2020. Antibacterial and antioomycete activities of a novel designed RY12WY peptide against fish pathogens. *Microbial Pathogenesis*, 149, pp.104591.	**8.58**
12.	Bhutia TP, YadavVK Qureshi NW, Kumar NR, Ojha SN 2020. Comparative Analysis of Consumer Behaviour between Traditional Fish Markets and Modern Retail Outlets in Kolkata, West Bengal. *Fishery Technology*, 57(1): 51 – 58	5.25
13.	Biswas C, Chakraborty S, Munilkumar S, Gireesh Babu P, Sawant PB, Chadha NK, Krishna G, Dasgupta S 2020. Effect of high temperature during larval and juvenile stages on masculinization of common carp (Cyprinus carpio, L). *Aquaculture,* 530, 735803	**9.02**
14.	Chellamanimegalai P, Pavan-Kumar A, Balangae AK, Dwivedi A, Deshmukhe G 2020. New record of marine red algal species Grateloupia orientalis Showe M. Lin & H.Y. Liang and G. catenata Yendo (Halymeniaceae, Rhodophyta) from the east coast of India. *Current Science* 119(5):849-854	**6.76**
15.	Chennuri S, Pathak V, Madhusudhanarao B, Gangan S, Pavan-Kumar A, Jaiswar AK 2020. Taxonomic discrimination of species of the genus Metapenaeus Wood-Mason, 1891 from Indian waters through morphometric and molecular studies. Crustaceana 93(7):727–746.	**6.7**
16.	Chowdhury DK, Sahu NP, Sardar P, Deo, AD, Bedekar M, Singha KP, Maiti MK 2020. Physio-immunological responses of Labeo rohita fingerlings to commonly used phytogenic feed additives: A comparative evaluation. *Journal of Environmental Biology*, 41(6):1455-1463	6.56
17.	Das O, Lekshmi M, Kumar S, Nayak BB 2020. Incidence of norovirus in tropical seafood harbouring fecal indicator bacteria, *Marine Pollution Bulletin.* 150: 110777.	**9.78**
18.	Dasari B, Krishnan P, Kantharajan G, Rajendran KV, Ponniah AG, Rao CH 2020. Scientometric assessment of research publications from fisheries institutes under Indian Council of Agricultural Research (ICAR) during 2009-2018*. Indian Journal of Fisheries*. 67(4):1-2.	**6.26**
19.	Debbarma S, Tiwari VK, Reddy AK, Pavan-Kumar A, Babitha Rani AM 2020. Short term ration restriction and re-alimentation: Effect on compensatory growth, body composition and insulin like growth factor gene expression in *Cyprinus carpio*. *Turkish Journal of Fisheries and Aquatic Sciences*, 20 (6), 499-505.	**6.74**
20.	Deepika A, Sreedharan K, Rajendran KV 2020 Responses of some innate immune-genes involved in the toll-pathway in black tiger shrimp (Penaeus monodon) to Vibrio harveyi infection and on exposure to ligands in vitro. *Journal of the World Aquaculture Society*. 51(6):1419-29.	7.39

21.	Gangan S, Pavan-Kumar A, Jahageerdar S, Jaiswar AK 2020. A new species of Stolephorus (Clupeiformes: Engraulidae) from the Bay of Bengal, India. *Zootaxa,* 4743(4):561-574.	**6.99**
22.	Garg CK, Sahu NP, Maiti MK, Shamna N, Deo AD, Sardar P 2020 Dietary Houttuynia cordata leaf extract and meal enhances the immunity and expression of immune genes in *Labeo rohita* (Hamilton, 1822). *Aquaculture Research*, 52(1):381-394 https://doi.org/10.1111/are.14901	7.50
23.	Gupta G, Kumar M, Sardar, P., Varghese T, Srivastava, PP, Gupta S 2020. Pharmacokinetics and physio-metabolic response of single and multiple dose of fenbendazole in Labeo rohita (Hamilton, 1822) fingerlings. *Aquaculture Research*, 10.1111/are.14889	7.50
24.	Haque R, Sawant PB, Sardar P, Xavier M, Varghese T, Chadha NK, Pattanaik SS, Jana P, Naik VA 2020. Synergistic utilization of shrimp shell waste-derived natural astaxanthin with its commercial variant boosts physio metabolic responses and enhances colouration in discus (Symphysodon aequifasciatus). *Environmental Nanotechnology, Monitoring and Management*, https://doi.org/10.1016/ j.enmm. 2020. 100405	**7.43**
25.	Hoilenting, Sharma R 2020. The economic impact of flood on fisheries in Assam, India. International *Journal of Ecology and Environmental Sciences.* 2(4): 524-230.	5.18
26.	Hoilenting, Sharma R, Sharma A, Borah BC, Deka N 2020. Effect of flood on socio-economic status and income distribution among flood affected fish farmers of Assam, India. *Journal of Experimental Zoology, India*. 23(2): 1679-1684.	**5.51**
27.	Jahan I., Tiwari, V.K. , Pavan-Kumar, A., Verma, A.K., Harikrishna, V., Babitha Rani, A.M., Chadha, N.K. and Anand, G., 2020. The effect of inland saline groundwater on growth, maturation, and osmoregulation of common carp. *North American Journal of Aquaculture*. https://doi.org/10.1002/naaq.10165	6.92
28.	Jana P, Sahu NP, Sardar P, Shamna N, Varghese T, Deo AD, Harikrishna V, Paul M, Panmei H, Gupta G, Nanda C, Krishna G 2020 Dietary protein requirement of white shrimp, *Penaeus vannamei* (Boone, 1931) juveniles reared in inland ground water of medium salinity. *Aquaculture Research*, DOI: 10.1111/are.15100.	7.50
29.	Jayant M, Sahu NP, Deo AD, Gupta S, Rajendran KV, Garg CH, Meena DK, Wagde MS 2021. Effective valorisation of bio-processed castor kernel meal based fish feed supplements concomitant with oil extraction processing industry: A prolific way towards greening of landscaping/environment. *Environmental Technology & Innovation. https://doi.org/10.1016/j.eti.2020.101320*	8.80
30.	Kalita N, Pavan-Kumar A, Phukan B, Chaudhari A, Nagpure NS (2020). Genetic diversity of Vulnerable Assamese Kingfish, *Cyprinion semiplotum* (McClelland, 1839) inferred from mitochondrial DNA marker. *National Academy Science Letters*, https://doi.org/10.1007/s40009-020-00905-3.	**6.30**

31.	Kiranmayi D, Sharma A 2020. Mobile Apps and Internet of things (IoT): A promising future for Indian fisheries and aquaculture sector. *Journal of Entomology and Zoology Studies*, 8(1):1659-1669	**5.53**
32.	Krishnan R, Jeena K, Kurcheti PP 2021. Nervous necrosis virus induced oxidative imbalance and host associated antioxidant response in Asian seabass brain*. Aquaculture*. 531:735809.	**9.02**
33.	Kumar M, Varghese T, Sahu NP, Gupta G, Dasgupta S 2020 Pseudobranch mimics gill in expressing Na+K+-ATPase 1 α-subunit and carbonic anhydrase in concert with H+-ATPase in adult hilsa (*Tenualosa ilisha*) during river migration. *Fish Physiol Biochem* 46, 725–738	**7.73**
34.	Kumar P, Kumar M, Wisdom KS, Pathakota GB, Kumar NS, Reang D, Nagpure NS, Sharma R (2020) Characterization, docking and molecular dynamics Simulation of gonadotropin inhibitory hormone receptor (GnIHR2) in *Labeo Catla*. *Cellular Physiology and Biochemistry* 54: 825-841.	**6.0**
35.	Kumar P, Wisdom KS, Kumar G, Gireesh-Babu, P, Kumar NS, Nagpure NS, Sharma R 2020. Ontogenetic and tissue-specific expression of gonadotropin-inhibitory hormone (GnIH) and its receptors in *Catla catla*. *Molecular Biology Reports* 47:3281–3290.	**8.11**
36.	Kumar R, Dineshbabu P, Jaiswar AK, Shenoy L, Pavan-Kumar A, Rahangdale S, Vase VK, Damodar D, Bharadiya S, Gohel J 2020. New Geographical Record for Muraenid Eels (Anguilliformes: Muraenidae) along the Northeast Arabian Sea, Western Indian Ocean. *Thalassas: An International Journal of Marine Sciences* (2020) 36:365–370	**6.576**
37.	Kumar R, Jaiswar AK, Sharma R, Prasad L 2020. Quantification of morphological variations among populations of *Channa gachua* (Hamilton, 1822) from different geographical locations in India. *Indian Journal of Fisheries*, 67(2): 114-119.	7.26
38.	Kumar S, Lekshmi M, Parvathi A, Ojha M, Wenzel N, Varela MF 2020. Functional and structural roles of the major facilitator superfamily bacterial multidrug efflux pumps. *Microorganisms.* 8(2):266. doi: 10.3390/microorganisms8020266	**10.17**
39.	Kumar T, Chakraborty S K, Jaiswar A K, Panda D, Sandhya K M, Shah T H, Bhagabati S K, Alam A, Kumari S 2020 Diet composition and feeding strategy of Johnius dussumieri (Cuvier, 1830) from Ratnagiri coast of India *Indian Journal of Geo-Marine Science*, 49 (07): 1242-1249.	**6.328**
40.	Kumar, K., Tiwari, V.K., Dube, K., Prakash C., Babitha Rani A. M. and Verma, A.K., 2020. Effect of sub-lethal concentration of iron on growth and survival of Daphnia (Müller, 1785). *Fishery Technology*, 57(1): 36–40.	5.25
41.	Kumari S, Jaiswar AK, Jahageerdar S, Chakraborty SK, Kumar T 2020. Morphometric and meristic variation of congeneric sciaenid fishes *Otolithes cuvieri* Trewavas, 1974 and *Otolithes ruber* (Schneider, 1801) from Maharashtra, west coast of India. *Indian Journal of Geo-Marine Science*, 49 (01): 80-86.	**6.32**

42.	Lekshmi M, Kumar S, Rajendran KV, Nayak BB 2021. Development of a reverse transcription (RT) polymerase chain reaction (PCR) method for the detection of human norovirus in bivalve molluscs. *Water Science and Technology.*	7.62
43.	Leya T, Ahmad I, Sharma R, Tripathi G, Prasad KP, Rajendran KV 2020. Bicistronic DNA vaccine macromolecule complexed with poly lactic-co-glycolic acid-chitosan nanoparticles enhanced the mucosal immunity of Labeo rohita against Edwardsiella tarda infection. International Journal of *Biological Macromolecules*. https://doi.org/10.1016/j.ijbiomac.2020.04.048	**10.78**
44.	Leya T, Rajendran KV, Tripathi G, Prasad KP, Bedekar MK 2020. Expression of polymeric immunoglobulin receptor (pIgR) and immunoglobulin (IgM) gene in mucosal-associated lymphoid tissues (MALT) of *Labeo rohita* fingerlings immunized with pDNA (pGPD-IFN) vaccine. *Aquaculture* 535, https://doi.org/10.1016/j.aquaculture. 2021. 736343	**9.02**
45.	Mallik A, Bhushan S, Chakraborty P, Jaiswar AK, Ramasubramanian V 2020. Stock structure analysis of Priacanthus hamrur (Forsskal, 1775) along the Indian coast based on truss morphometry. *Journal of Marine Biology Association, India*, 62 (1): 21-24. doi:10.6024 /jmbai. 2020.62.1.2109 -0x	**5.28**
46.	Mallik A, Chakraborty P, Bhushan S, Jaiswar AK, 2020. Stock identification of Priacanthus hamrur (Percifromies, Priacanthidae) from Indian waters based on morphometric and otolith traits. *Indian Journal of Geo Marine Sciences*. 49 (08): 1411-1415	**6.328**
47.	Manickavasagam S, Shukla SP, Kumar S, Kumar K, Bhuvaneswari R. 2021. Assessment of marine microplastics in floating plastic debris using a fixed sampling device: the example of South Juhu creek, Mumbai coast, India. *Journal of Coastal Conservation*. 25(1):1-0.	**7.26**
48.	Manickvasagam S, Kumar S, Kumar K, Bhuvaneswari GR, Paul T, Shukla SP 2020. Quantitative assessment of influx and efflux of marine debris in a water channel of South Juhu creek, Mumbai, India. *Regional Studies in Marine Science,* 34:101095, DOI http://doi.org/ 10.1016/j.rsma. 2020.101095	7.46
49.	Meena LL, Goswami M, Chaudhari A, Nagpure NS, Gireesh-Babu P, Dubey A, Das DK (2020). Development and characterization of a new DRCF cell line from Indian wild strain zebrafish *Danio rerio* (Hamilton 1822). *Fish Physiology Biochemistry*, doi: 10.1007/s10695-020-00792-x.	**7.73**
50.	Mohanty S, Makesh M, Rajendran KV, Suresh Babu PP, Anand D, Kumar S, Kumar A, Baitha R, Sarma K. 2020Production and characterisation of monoclonal antibodies against immunoglobulins of *Cirrhinus mrigala* (Hamilton 1822). *Indian Journal of Fisheries*. 67(2):55-61.	**6.26**

51.	Moorthy AK, Rathi BG, Shukla SP, Kumar K, Bharti VS 2020. Acute toxicity of textile dye Methylene blue on growth and metabolism of selected freshwater microalgae. *Environmental Toxicology and Pharmacology* 82:103552.	**9.06**
52.	Muduli C, Rathore G, Tripathi G, Prasad KP, Kumar K, Singh RK 2020. Virulence potential of Aeromonas hydrophila isolated from apparently healthy freshwater food fish. *Biologia*: 1-11	**6.73**
53.	Nageshwari P, Verma AK, Gupta S, Jeyakumari A 2020. Finger millet as a carbon source to biofloc improved the growth performances of *Pangasianodon hypophthalmus* fingerlings. *Indian Journal of Fisheries*, 67(4), 56-61. DOI: 10.21077/ijf.2020.67.4.98872-07	6.26
54.	Naskar S, Pailan GH, Datta S, Sawant PB, Bharti VS 2020 Effect of different organic manures and salinity levels on greenhouse gas emission and growth of common carp in aquaculture systems. *Aquaculture Research*. https://doi.org/10.1111/are.15041	**7.50**
55.	Neethu J, Gangan SS, Sri Hari M, Nayak BB, Jaiswar AK 2020 Report of absence of pelvic fin in three species of genus Thryssa (Engarulidae, Clupeiformes) from India. *Indian Journal of Geo-Marine Science*, 49 (04): 703-705.	**6.328**
56.	Nirmal T, Biju kumar A, Chakraborty SK, Jaiswar AK 2020. Shell occupation pattern by the hermit crab Diogenes alias (Diogenidae) from Mumbai, India. *Indian Journal of Geo-Marine Science*, 49 (05): 766-773.	**6.328**
57.	Nirmal T, Da Silva AR, Pavan-Kumar A, Jaiswar AK, Kumawat T 2020. Ontogenic allometry and sexual maturity of the hermit crab, Diogenes alias McLaughlin & Holthuis, 2001 (Decapoda, Anomura). *Crustaceana* 93 (1): 1-15.	**6.79**
58.	Nirmal T, Jaiswar AK, Pavan-Kumar A, Chakraborty SK 2020. Morphometric differentiation of hermit crabs, superfamily: Paguroidea from Mumbai, North-West coast of India. *Indian Journal of Geo-Marine Sciences* 49(3):492-495.	**6.30**
59.	Nirmal, T, Nuzaiba PM, Da Silva AR, Pavan-Kumar A, Kumar AB, Sreekanth GB, Chakraborty SK, Nayak BB, Jaiswar AK 2020. Plasticity in shell selection behaviour by the endemic Hermit crab *Diogenes alias* (Anomura: Diogenidae) from North Eastern Arabian Sea, India. *Crustaceana* 93 (9-10)	**6.7**
60.	Nuwansi KKT, Verma AK, Chandrakant MH, Prabhath GPWA, Peter RM 2020. Optimization of stocking density of koi carp (*Cyprinus carpio* var. koi) with gotukola (*Centella asiatica*) in an aquaponic system using phytoremediated aquaculture wastewater. *Aquaculture*, 532: 735993. https://doi.org/10.1016/j.aquaculture.2020. 735993	**9.02**
61.	Nuwansi KKT, Verma AK, Rathore G, Chandrakant MH, Prabhath GPWA, Peter RM 2020. Effect of hydraulic loading rate on the growth of Koi carp (Cyprinus carpio var. koi.) and Gotukola (*Centella Asiatica* (L.)) using phytoremediated aquaculture wastewater in aquaponics. *Aquaculture International*, 28: 639–652. https://doi.org/10.1007/s10499-019-00485-0	**7.46**

62.	Patil S, Sharma A 2020. Empirical Analysis of Constraints Faced by Shrimp Farmers of Maharashtra. *Journal of experimental Zoology, India* 23(2): 1867-1875	**5.51**
63.	Paul T, Kumar S, Kumari P, Kumar K, Poojary N, Shukla SP 2020. Histopathological alterations induced by chronic exposure of environmentally relevant concentrations of triclosan in striped catfish (*Pangasionodon hypophthalmus*). *Journal of Experimental Zoology, India*. 23(3): 23-27	**5.51**
64.	Paul T, Kumar S, Shukla SP, Pal P, Kumar K, Poojary N, Biswal A 2020. A multi-biomarker approach using integrated biomarker response to assess the effect of pH on triclosan toxicity in *Pangasianodon hypophthalmus* (Sauvage, 1878). *Environmental Pollution*, DOI http://doi.org/10.1016/j.envpol.2020.114001	**11.71**
65.	Pham HD, Siddik MA, Fotedar R, Chaklader MR, Foysal MJ, Nguyen CM, Munilkumar S 2020. Substituting fishmeal with *lupin Lupinus angustifolius* kernel meal in the diets of cobia Rachycentron canadum: Effects on growth performance, nutrient utilization, haemato-physiological response, and intestinal health. *Animal Feed Science and Technology*, 114556 doi.org/10.1016/j.anifeedsci.2020.114556	**8.59**
66.	Prabhath GPW, Shukla SP, Kumar K, Nuwansi KKT 2020. Salinity mediated enhancement in protein and pigment content in *Spirulina* (*Arthrospira) platensis*. *Indian Journal of Biotechnology*,18(4):323-329.	6.43
67.	Pradhan SK, Roul SK, Ghosh S, Tripathy P, Jaiswar AK, Bhusan S, Nayak BB 2020. Biometry, length-weight and length length relationships of flathead sillago *Sillaginopsis panijus* (Hamilton, 1822) (Perciformes: Sillaginidae) from the north-western Bay of Bengal. *Indian J. Fish*., 67(3): 144-151, DOI:10.21077/ijf.2020.67.3.95369-16.	**6.26**
68.	Ram R, Pavan Kumar A, Jaiswar AK, Gireesh-Babu P, Krishna G, Chaudhari A 2020. Identification of fish and shellfish larvae from mangroves using DNA barcodes. *Journal of Coastal Research*. https://doi.org/10.2112/JCOASTRES-D-19-00172.1 **7.040**	7.05
69.	Ramteke KK, Shenoy L, Nayak B B, Deshmukhe G, Inamdar A B, Singh VV 2020. Asses factors influencing the spatio-temporal distribution of *Johnius belangerii* (Cuvier, 1830) Belanger's croaker along Mumbai, Northwest Coast of India. *Indian Journal of Geo Marine Sciences* 49(05): 903-907	**6.28**
70.	Rani S, Sahoo S, Srivastava PP, Kumar M, Gupta S, Munilkumar S, Gupta G, Krishna G 2020. Influence of inclusion of pigeon pea (*Cajanus cajan*) leafmeal on growth, physio-metabolic and immune parameters, and expression of IGF-1, IGF-1R and IGFBP-1 genes in *Labeo rohita* (Hamilton, 1822) fingerlings. *Aquaculture Research*.; 00: 1–18. https://doi.org/10.1111/ are.15046 **7.5**	7.50
71.	Ranjan A, Kumar S, Sahu NP, Jain KK, Deo AD 2020. Exogenous phytase and xylanase supplementation of formulated diets for rohu (*Labeo rohita*): impact on haematology, histology and IGF I gene expression. *Fish Physiology and Biochemistry*. https://doi.org/ 10.1007/s10695-020-00893-	7.76

72.	Ranjith L, Shukla SP, Vinod K, Ramkumar S, Amarnath MB, George MB, Chakraborty SK, Purushothaman SC 2020. Destruction of non-edible biota due to bottom trawling: The ecological and conservation issues in a global context. *Ocean & Coastal Management* https://doi.org/10.1016/j.ocecoaman.2020.105420	**8.48**
73.	Rao BM, Sudhan C, Kumari R, Bedekar MK 2020. Herpesvirus: An emerging threat to marine turtles. *Indian Journal of Geo Marine Sciences*. 49 (04): 517-526	**6.30**
74.	Rasal KD, Iquebal MA, Pandey A, Behera P, Jaiswal S, Vasam M, Dixit S, Raza M, Sahoo L, Nandi S, Angadi UB, Rai A, Kumar D, Nagpure **N**, Chaudhari A, Sundaray JK (2020). Revealing liver specific microRNAs linked with carbohydrate metabolism of farmed carp, *Labeo rohita* (Hamilton, 1822). *Genomics* 112(1): 32-44.	9.16
75.	Raul C, Barti VS, Jaffer YD, Lenka S, Krishna G 2020. Sugarcane bagasse biochar: Suitable amendment for inland aquaculture soils. *Aquaculture Research* DOI: 10.1111/are.14922	**7.50**
76.	Ravikumar, Jaiswar AK, Sharma R, Laxmiprasad 2020 Quantification of morphological variations among populations of *Channa gachua* (Hamilton, 1822) from different geographical locations in India. *Indian Journal of Fisheries,* 67(2): 114-119, DOI: 10.21077/ijf.2019.67.2.93891-16	**6.26**
77.	Sachin S, Datta S, Sardar, P 2020. Effect of water temperature on feed utilization, growth and survival of indigenous fish, *Trichogaster lalius* (Hamilton, 1822) under captivity. *Journal of Experimental Zoology, India*, 23 (2): 1803-1811.	5.51
78.	Sachin SM, Yadav VK, Pal S, Karmakar S, Bharti VS 2020. Survey based economic evaluation of ecosystem services of mangrove of Uttar Kannada district of Karnataka, India. *Journal of Environmental Biology*, 41, 980-986	6.56
79.	Sahoo L, Debnath C, Parhi J, Choudhury J, Choudhury TG, Prasad KP, Kandpala KP 2020. Molecular characterization and immunostimulant-induced expression analysis of type I interferon gene in *Labeo bata* (Ham.). *Aquaculture Reports*. 100490 **7.89**	7.89
80.	Sahoo S, Datta S, Sardar P 2020. Effect of water temperature on feed utilization, growth and survival of indigenous fish *Trichogaster lalius* (Hamilton, 1822) under captivity. *Journal of Experimental Zoology, India*, 23 (2): 1803 – 1811.	**5.51**
81.	Sahoo S, Jain K K, Sahu N P, Deo AD, Shamna N, Patro D, Maiti MK 2020. Dietray optimisation of black gram (*Vigna mungo*) leaf meal as substitute for de-oiled rice bran in the diet of *Labeo rohita* fingerlings. *Indian Journal of Fisheries* 67 (4):71-79.	7.26
82.	Sahu, S and Datta, S. 2020 Study on fish diversity of Kawardha town, Chhattisgarh, India. *International Journal of Current Microbiology and Applied Sciences*, 9(09): 2949-2952 5.38	5.51

83.	Saklani P, Lekshmi M, Nayak BB, Kumar S. 2020. Survival of Methicillin-Resistant *Staphylococcus aureus* in Fish and Shrimp under Different Storage Conditions. *Journal of Food Protection*. 83(5):844-848. doi:10.4315/JFP-19-546	**7.56**
84.	Saravanan K, Rajendran KV, Gireesh-Babu P, Purushothaman CS, Makesh M. 2020 Molecular characterization and expression analysis of secretory immunoglobulin M (IgM) heavy chain gene in rohu, Labeo rohita. *Animal Biotechnology*. 31(5):413-25.	**7.26**
85.	Sardar P, Shamna N, Sahu NP 2020 Acidifiers in Aquafeed as an Alternate Growth Promoter: A Short Review. *Animal Nutrition and Feed Technology*, 20 (2): 353-366	6.31
86.	Sawant PB, Chakraborty S, Dasgupta S, Chadha NK, Sawant BT 2020. The quintessence of colour enhancement in ornamental fishes: an empirical pathway towards rainbow revolution. *Current Science*, 119 (7), 1093-1100	**6.76**
87.	Shamna N, Sahu NP, Sardar P, Fawole FJ, Kumar S 2020 Additional feeding of vitamin–mineral-based nutraceutical to stress-exposed rohu, Labeo rohita, enhances the IGF-1 gene expression and growth. *Aquaculture Research*, https://doi.org/10.1111/are.14605	7.50
88.	Sibina MS, Jaiswar AK, Jahageerdar S, Vaisakh G, Chakraborty SK 2020. Stock structure analysis of *Johnieops borneensis* (Bleeker, 1851) from Indian waters. *Indian Journal of Geo-Marine Science*, 49 (07): 1215-1221.	**6.32**
89.	Singh AK, Kumar S, Kumar N, Singh AR, Shukla SP 2020. Removal of trivalent and pentavalent arsenic from water using chemically modified chitosan beads. *Indian Journal of Chemical Technology*, 27: 479-487	**6.47**
90.	Singha KP, Shamna N, Sahu NP, Sardar P, Harikrishna V, Thirunavukkarasar R, Chowdhury DK, Maiti MK, Krishna G 2020. Optimum dietary crude protein for culture of genetically improved farmed tilapia (GIFT), *Oreochromis niloticus* (Linnaeus, 1758) juveniles in low inland saline water: Effects on growth, metabolism and gene expression *Animal Feed Science and Technology*, 271: https://doi.org/10.1016/j.anifeedsci.2020.114713	8.59
91.	Singha KP, Shamna N, Sahu NP, Sardar P, HariKrishna V, Thirunavukkarasar R, Kumar M, Krishna G 2020 Feeding graded levels of protein to Genetically Improved Farmed Tilapia (GIFT) juveniles reared in inland saline water: Effects on growth and gene expression of IGF-I, IGF-IR and IGF-BPI. *Aquaculture*, 525: https://doi.org/10.1016/j.aquaculture.2020.735306	9.02
92.	Sreekanth GB, Chakraborty SK, Jaiswar AK, Sunil K Md, Zacharia PU, Vancour P 2020. Trophic network and food web characteristics in a small tropical monsoonal estuary: A comparison with other estuarine systems. *Indian Journal of Geo-Marine Science* 49 (05):7 74-789.	**6.32**
93.	Sreekanth GB, Jaiswar AK, Shivkumar HB, Manikandan B, Chakurkar EB 2020. Fish composition and assemblage structure in tropical monsoonal estuaries: estuarine use and feeding guild approach. *Estuarine costal and shelf Science*. DOI: 10.1016/j.ecss.2020.106911	**8.41**

94.	Sushila N, Das BK, IN Mir, Rout AK, Prasad KP, Tripathi G 2020. Cloning, characterization and ontogenetic expression profile of RAG-2 and IgM in angelfish (*Pterophyllum scalare*). *Gene* 739 (24), 144496	**8.64**
95.	Talukdar A, Deo AD, Sahu NP, Sardar P, Aklakur Md, Prakash S, Shamna N, Kumar S 2020 Effects of dietary protein on growth performance, nutrient utilization, digestive enzymes and physiological status of grey mullet, *Mugil cephalus L.* fingerlings reared in inland saline water. *Aquaculture Nutrition*, 26(3): 921-935	8.10
96.	Vaisakh G, Borah S, Deshmukhe G, Jaiswar AK, Sahoo AK, Srihari M, Nirali V, Bhavesh G, Das BK 2020 On the morphological variations of geographically isolated migratory and non-migratory populations of Tropical shad, *Tenualosa ilisha* (Hamilton, 1822) from three distinct tropical ecosystems. *Indian Journal of Geo Marine Sciences* 49 (07): 1189-1196	**6.28**
97.	Varghese T, Kumar RVJ, Anand G, Pal, AK, Dasgupta S 2020. Dietary GABA enhances hypoxia tolerance of a bottom-dwelling carp, *Cirrhinus mrigala* by modulating HIF-1α, thyroid hormones and metabolic responses. *Fish Physiology & Biochemistry* 46, 199–212	**7.73**
98.	Wasave S, Sharma A, Wasave S 2020. Organizational Roles Performed by Marine fisheries cooperative of Maharashtra state, India. *Journal of experimental Zoology, India*, 23(1): 781-786	**5.53**
99.	Yadav VK, Jahageerdar S, Adinarayana J 2020. Modeling framework to study the influence of environmental variables for forecasting the quarterly landing of total fish catch and catch of selected pelagic fish of North-West Maharashtra coast of India. *National Academy Science Letter*, 43(6):515–518	**6.33**
100.	Yadav VK, Jahageerdar S, Adinarayana J 2020. Use of Different modeling approach for Sensitivity analysis in predicting Catch per Unit Effort (CPUE) of fish. *Indian Journal of Geo-Marine Science*, 49(11): 1729-41	**6.30**
101.	Yashwanth BS, Goswami M, Valappil RK, Thakuria D, Chaudhari A 2020. Characterization of a new cell line from ornamental fish *Amphiprion ocellaris* (Cuvier, 1830) and its susceptibility to nervous necrosis virus. *Scientific reports*. 10 (1):1-3.	**10.01**

6.6.3.5. Innovation and Best Practices

ICAR-CIFE is continuously thriving to improve the quality of research and the following innovative measures have been taken to motivate the faculty to achieve the excellence in research.

1. Annual awards are conferred to recognize the 'Best innovative idea', 'Best Publication' and 'Award for technologies' to motivate the students and scientists.
2. To attract the funding agencies and industries, the research highlights of the institute are displayed in the CIFE webpage and other social media.

3. Scientists are encouraged to propose collaborative research proposals with other departments/institutions.
4. The faculty of the institute are encouraged to attend the capacity building programmes in their respective research area.
5. The progress of the ongoing research projects is assessed periodically for mid-course correction and improvement in the project trajectory.

6.6.3.6. IPR Cell/ ITMU:

Institute has ITMU Cell to coordinate the patent filing and facilitate the technology transfer to the industry.

MEETINGS HELD IN 2019-20

Date	Topics Discussed
3 July, 2019	• Provisional patent application entitled as design of a prototype of double compartment device for micro and macro plastic entrapment in flowing water • Invention disclosure form for technology developed inactivated vaccine against *Flavobacterium columnare* in fish • Collaborative research agreement with CIFE, Kakinada centre and Reliance Industries Ltd.
26 July, 2019	• Invention disclosure form for technology developed inactivated vaccine against *Flavobacterium columnare* in fish
30 Aug., 2019	• Permission for commercialization of test kits CIFE, Kolkata Centre
28 Sept., 2019	• Discussion regarding application of Artificial Intelligence, LORA and designing of portable solar cooling system and their application in fisheries
22 Oct., 2019	• Commercialization of CIFE test kits, developed at CIFE Kolkata center and other technologies. • Contract research project for testing the efficacy of “Muktavac 82˚F” adjuvant in fish vaccines.
18 Jan., 2020	• Commercialization of Aquaculture Test Kit developed at CIFE, Kolkata Centre. • Draft of MoU with Erfinden Technologies Pvt. Ltd for developing Artificial Intelligence (AI) and Internet of Things (IoT) for fisheries sector. • MoU with IPSUM Pvt. Ltd for Production of 5 commercial scale batches of WSSV plasmid DNA vaccine.
7 Feb., 2020	• Discussion regarding commercialization of CIFE Aquaculture test kits, Kolkata Centre and CIFE Argunil with members of AgrInnovate
18 June, 2020	• Zoom meeting was arranged with all the register incubates, Dr. B. B. Nayak, Dr. A. K. Balange, ABI-SRF and ITMU-RA
26 Sept., 2020	• Meeting with Director CIFE with Dr. B. B. Nayak and Dr. A. K. Balange regarding MoU’s of Erfinden and Non-veg Mart

28 Sept, 2020	Virtual MoU Signing function with Director, ICAR-CIFE 1. Erfinden Pvt. Ltd. And ICAR – CIFE for Internet of things (IoT) and artificial intelligent (AI) 2. Non-veg Mart and ICAR – CIFE for online raw and ready to cook fish product marketing
13 Oct, 2020	• Pre-discussion zoom meeting on proof of concept on Artificial Intelligence (AI)
20 Oct, 2020	1. SOP for patent submission 2. Discussion about new technologies submitted to ITMU 3. Appointment of new Attorney by ICAR 4. ICAR-KRISHI technology restoration
19 Dec., 2020	• Discussion on MoU with CIFE and Mr. Deepen Modi (Sajal Pvt. Ltd.) • Discussion on Collaborative project with NPL group for introduction of Hydrogen peroxide in the Industry

MEETINGS HELD IN 2020 - 21

Date	Topics Discussed
18th June, 2020	Zoom meeting was arranged with all the register incubates, Dr. B.B. Nayak, Dr. A.K. Balange, ABI-SRF and ITMU-RA
26th Sept., 2020	Meeting with Director CIFE with Dr. B.B. Nayak and Dr. A.K. Balange regarding MoU's of Erfinden and Non-veg Mart
28th Sept., 2020	Virtual MoU Signing function with Director, ICAR-CIFE • Erfinden Pvt. Ltd. And ICAR – CIFE for Internet of things (IoT) and artificial intelligent (AI) • Non-veg Mart and ICAR – CIFE for online raw and ready to cook fish product marketing
13th Oct., 2020	Pre-discussion zoom meeting on proof of concept on Artificial Intelligence (AI)
20th Oct., 2020	ITMU committee meeting • SOP for patent submission • Discussion about new technologies submitted to ITMU • Appointment of new Attorney by ICAR ICAR-KRISHI technology restoration
8th Dec., 2020	Meeting with National Peroxide Limited (NPL) group for introduction of their company and Hydrogen peroxide in Fisheries Industry
18th Dec., 2020	Meeting with Vice President (VC), National Peroxide Limited (NPL) group, for preliminary customised training for company employees
23rd Dec., 2020	• Discussion on MoU with CIFE and Mr. Deepen Modi (Sajal Pvt. Ltd.) Discussion on Collaborative project with NPL group for introduction of Hydrogen peroxide in the Industry

List of patents coordinated through ITMU cell

S. No.	Year	Patent	Name of Inventor/Researcher/ Project/ Scheme	Name of Licensee/ Contracting Party	IP Protection No. (Patent/ Trademark/ Copyright/Design/ Plant Variety)
1.	2010	Animal feed supplement	Sanjay Balakrishna Jadhao, Dr. Neeraj Kumar and Dr. Md Aklakur	Ready for commercialization	Granted Patent No.: IN340969 (9 July,2020)
2.	2010	Feed supplement for improving reproductive health	Sanjay Balakrishna Jadhao, Dr. Neeraj Kumar and Dr. Md Aklakur	Ready for commercialization	Granted Patent No.: IN340970 (9th July,2020)
3.	2012	Ivermectin based medicated feed mix for treatment of fish parasites and growth restoration in fish	Dr. Md Aklakur, Dr. A K Pal, Dr. N P Sahu	CIFE – Argunil (Submitted to AgIn)	Granted Patent No.: IN330484 (28 Jan, 2020)
4.	2013	Novel primers and a high throughput real-time assay for White Spot Syndrome Virus (WSSV)	K.V. Rajendran; M. Makesh; Aparna Chaudhari	--	Patent No. IN345451 (Granted on 28 August 2020)
5.	2014	Formulation of Fadrozole loaded nanoparticle feed for efficient masculinization of *Poecilia reticulata*	Mr. Harshwardhan Joshi, Dr. V. K. Tiwari, Dr. Subodh Gupta, Dr. Rupam Sharma, Dr. Gayatri Tripathi, Dr. W. S. Lakra	---	Patent No. IN360099 (Granted on June 2021)
6.	2014	Fish Drying Rack	Dr. B. B. Nayak, Mrs. Ajita Ghag and Dr. Arpita Sharma	---	(Granted Patent No.: IN326749 on 4 December, 2019)
7.	2015	Catfish hatchery and rearing of seed under three tier System	Dr. C. S. Chaturvedi, Dr. W. S. Lakra, Dr. Arpita Sharma and Dr. Asha Landge	FER submitted to GNA on 17th July, 2020	Patent Application Number: 280/MUM/2015
8.		A method for reclamation of salt effected sugarcane	Dr. A. K. Reddy, Dr. W. S. Lakra	Ready for commerci	Patent Application

	2015	fields through sub-surface drainage system and aquaculture	and Mr. Chandrakant M. H.	alization	Number: 209/MUM/2015
9.	2018	Novel formulation of non-enzymatic free radical scavenger for improving compensatory growth in carp	Shamna N. N.P. Sahu	--	Patent Application 201821027496
10.	2019	Eco-feed: An aquafeed for biofloc based fish culture	Md. Aklakur Asutosh Deo N.P. Sahu Gopal Krishna	Field trial not completed	Provisional patent filed: 201921042385
11.	2019	New caudal fin cell line from *Amphiprion ocellaris* (an important marine ornamental fish)	Yashwanth BS, Aparna Chaudhari, K V Rajendran, D. Thakuria and M Goswami	--	Under publication

6.6.3.7. Central Instrumentation Unit

The institute has a central instrumentation lab with major equipment developed under National Agricultural Higher Education Project (NAHEP). All departments of the Institute also have well equipped labs and the labs are accessible to all the students and staff of the CIFE.

4.6.3.8. Global Support

This Deemed University maintains vibrant linkages with a wide range and large number of academic, research and government institutions to provide a fulfilling and holistic learning experience to the students, as well as to maintain the cutting-edge in research programs and extension activities. The institute has Dean (External affairs) to provide advice and guidance in the areas of exchange programmes, international MoUs and collaborated research. The nature of linkages is detailed below.

1. **International research project**

   ICAR-CIFE is a partner in one International Consortium Project titled '**Novel molecular approaches for advancing prediction and mitigation of disease outbreaks in aquaculture for small scale farmers'.** This Consortium funded by DBT, GoI and BBSRC, U.K. (Biotechnology and Biological Sciences Research Council, U.K.) includes other institutions like Centre for Environment, Fisheries and Aquaculture Science, U.K.; University of Exeter, U.K.; University of St Andrews, U.K.; World Fish Malavi, Bangladesh; Tamil Nadu Dr. J. Jayalalithaa Fisheries University; Bangladesh University, etc.

2. One-Health Project

2. Multi-institutional Research Projects

During 2016 to 21, a total of 22 extramural projects were carried out in collaboration with one or more institutions. While 16 projects are with 1 or 2 partners, 6 are national collaborations with partners ranging from 5 to >20.

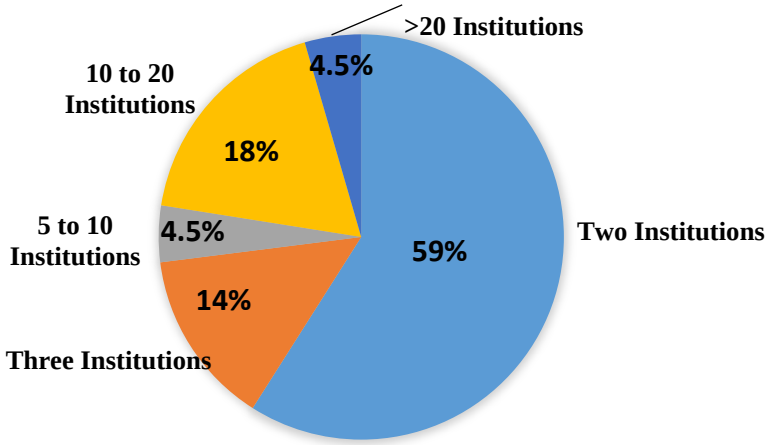
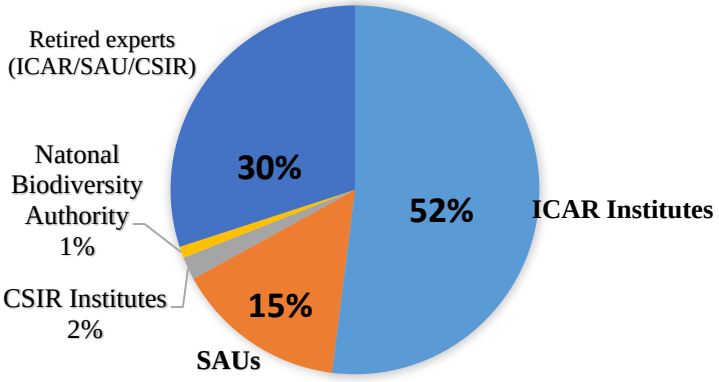


Chart 1. Collaborative Research with National Institutions

3. External Examiners and Experts

ICAR-CIFE routinely invites faculty members and experts from other institutions to set examination papers, evaluate final exams, dissertations and theses of the students. About 70% of the experts are from ICAR Institutes/ SAUs/ CAUs, while 30% are retired experts from various organizations.



External Examiners and Experts

6. Guest Faculty

Every year CIFE invites about 50 faculty members of high national and international repute for guest lectures in various disciplines. During the period 2016 to 2021, a total of 262 guest lectures were arranged. During Covid regulations the lectures were delivered online.

7. List of MoUs Signed

CIFE has signed MoUs with the following universities and organizations to enhance collaboration in fisheries academics, research and extension.

International MoUs

- Letter of Intent between ICAR-CIFE, Mumbai and CSIRO, Australia (12.07.2019)
- Hawassa University, Ethiopia (23.12.2019)

Indian Universities

- Tamil Nadu Dr. J. Jayalalitha Fisheries University, Nagapattinam, Tamil Nadu (04.09.2017)
- Maharashtra Animal and Fishery Science University, Nagpur, Maharashtra (10.04.2018)
- Chhattisgarh Kamdhenu Vishwavidyalaya, Raipur, Chhattisgarh (25.06.2018)
- Bihar Animal Sciences University, Patna, Bihar (11.07.2018)
- Kamdhenu University, Gandhi Nagar, Gujarat (16.02.2019)
- Central Soil Salinity Research Institute, Mumbai under NAHEP project (04.07.2019)
- Assam Agriculture University, Jorhat, Assam (31.10.2019)
- CoF, Birsa Agriculture University, Jharkhand, Ranchi (5.11.2019)
- Indian Technology and Management University (ITMU), Gwalior (31.01.2020)
- Indian Institute of Technology, Bombay, Bombay (08.09.2020)
- Institute of Technology and Management Unit (ITMU), Gwalior (31 January 2020)

Government Institutions

- MGM'S Institute of Biosciences and Technology, Aurangabad (MS), (19.11.2016)
- Institute of Pesticide Formulation Technologies, Gurugram (25.01.2019)
- Agriculture Skill Council of India (ASCI), Gurugram. (02.06.2017)
- Indian Institute of Technology, Mumbai (2019)
- CSIR- National Environmental Engineering Research Institute (2019)

Private Organizations

- West Coast Frozen Foods Pvt. Ltd., Mumbai (Mar, 2017)
- Pavan Green Biotechnologies Pvt. Ltd., Navi Mumbai (Oct, 2017)
- Ramkrishna Ashram Krishi Vigyan Kendra, Nimpith, South 24-Paraganas (Nov, 2017)
- Institute of Livelihood Research and Training, Hyderabad (Apr, 2018)
- The Energy and Resources Institute (TERI), Mumbai (Jun 2019)
- IPSUM Life Sciences LLP, Mumbai (Aug, 2020)
- Shuvoneel RAS System Pvt. Ltd., Pune (Nov, 2020)
- Erfinden Technologies Pvt. Ltd (28 Aug, 2020)
- Non-veg Mart (28 Aug, 2020)

6.6.4. Extension Support

6.6.4.1. Extension Council

The Extension Council is the apex body of the institute to take policy decisions related to extension. The composition of the extension council is given below.

Chairman	Director / Vice-Chancellor
Member	Joint Director
Deputy Director General (Extension), ICAR Or his/her nominee	Member
Head, Division of Fisheries Economics, Extension and Statistics	Member
Four Scientists nominated for a period of 2 years by the Board of Management	Member
Five scientists nominated for a period of 2 years by the Board of Management	Member
One Scientist from the regional research station nominated by the Board of Management for a period of 2 years tenure	Member
One representative of the Department of Agriculture, Ministry of Agriculture nominated by the fisheries commissioner	Member

The present composition of the Extension Council is:

S. No.	**Name of the members**	
1.	Dr. Gopal Krishna, Director, ICAR-CIFE, Mumbai	Chairman
2.	Dr. A.K. Singh, DDG (Agricultural Extension) ICAR, New Delhi	Member
3	Maharashtra Commissioner, DoF, Maharashtra	Member
4.	Director ICAR-CIFA, Bhubaneswar Nominee of Director CIFA, Bhubaneswar	Member
5.	Dr. K.V. Rajendran, Head AEHM, ICAR-CIFE	Member
6.	Dr. N.P. Sahu, Head FNBT, ICAR-CIFE	Member
7.	Dr. B.B. Nayak, Head, FRHPHM, ICAR, CIFE	Member
8.	Dr. N.K. Chadha Head Aquaculture, (Acting), ICAR-CIFE	Member
9.	Dr. S.N. Ojha, Head FEES (Acting), ICAR-CIFE	Member
11.	Dr. S. Jahageerdar, Principal Scientist, ICAR, CIFE	Member
12.	Dr. Ashutosh Deo, Senior Scientist, ICAR-CIFE	Member
13	Dr. A. Balange, Senior Scientist, ICAR-CIFE	Member
14.	Dr. Swadesh Prakash, Principal Scientist, ICAR-CIFE	Member
15.	Dr. Ananthan P.S., Senior Scientist, ICAR-CIFE	Member
16.	Dr. Arpita Sharma, Principal Scientist, ICAR-CIFE	Member Secretary
17.	Dr. Hari Krishna, Senior Scientist, ICAR-CIFE, Rohtak Centre	Member

Details of Extension Council Meeting held during 2016 to 2020

S. No.	Research Council Meeting	Date on which meeting held
1.	21st EC meeting	30.01. 2016
2.	22nd EC meeting	09.11.2016
3.	23rd EC meeting	06.11.2017
4.	24th EC meeting	30.11. 2018
5.	25th EC meeting	07.03.2020
6.	26th EC meeting	18.02.2021

6.6.4.2. Directorate of Extension Education

As such CIFE does not have Directorate of extension. However, being a Deemed-to-be University, ICAR-CIFE has a different establishment of 'Directorate of Extension' on par with the traditional universities. The extension activities of the CIFE are monitored/guided by the Extension council and executed by the Department of Fisheries Extension, Economics and Statistics division. Further, CIFE has five regional centres at different parts of the country (Kolkata, West Bengal; Kakinada, Andhra Pradesh; Powerkheda, Madhya Pradesh; Rohtak, Haryana and Motipur, Bihar) to disseminate the research outputs to the field.

Extension and technology dissemination system

ABI and ITMU are established at ICAR-CIFE for Extension and technology dissemination system. Institute handles agripreunership programmes through interconnection of three portals National Agricultural Innovative Fund (NAIF), Institute Technology Management Unit (ITMU) and Agri-Business Incubation (ABI). The details of technologies disseminated are given below.

Year	Number of Entrepreneurship windows initiated and operated	Areas covered
2015-16	13	• CIFE-Eco hatchery: The technology is submitted to file patent with Patent application no. 3042/MUM/2013. This technology is already commercialized to TEEWAVE Pvt. Ltd Andhra Pradesh. (16th Apr. 2016). • Magur breeding & hatchery management • Carp breeding and hatchery management • Carp culture practice and recent advances • Freshwater prawn seed rearing and culture • Freshwater Fish seed Production and Hatchery Management • Fish and Prawn culture • Hygienic handling and value addition of freshwater fishes • Magur breeding & hatchery management • Carp breeding and hatchery management

		• Carp culture practice and recent advances • Freshwater prawn seed rearing and culture • Freshwater Fish seed Production and Hatchery Management • Fish and Prawn culture • Hygienic handling and value addition of freshwater fishes • Indian major carps seed production • Catfish breeding and seed production • Better management practices for *Litopenaeus vannamei* • Breeding and seed production of Pengba • Brackishwater Aquaculture (Milkfish, Grey Mullet, Mud crab)
2016-17	11	• Mr. Deepen Modi, an entrepreneur is an incubate is working on sensor based backyard aquaculture set up management with the technical assistance from CIFE. His efforts may help transform small scale backyard culture. • Magur breeding & hatchery management • Carp breeding and hatchery management • Carp culture practice and recent advances • Freshwater prawn seed rearing and culture • Fish and Prawn culture • Indian major carps seed production • Catfish breeding and seed production • Better management practices for *Litopenaeus vannamei* • Breeding and seed production of Pengba • Brackishwater Aquaculture (Milkfish, Grey Mullet, Mud crab)
2017-18	13	• ICAR-CIFE and West Coast Frozen Pvt. Ltd., Mumbai has signed MOU for collaborative research and development work on 12 January, 2018. Now, the company is evaluating scaling up and marketing of technology of “Fish sausage” preparation. • Magur breeding & hatchery management • Carp breeding and hatchery management • Carp culture practice and recent advances • Freshwater prawn seed rearing and culture • Freshwater Fish seed Production and Hatchery Management • Fish and Prawn culture • Hygienic handling and value addition of freshwater fishes • Indian major carps seed production • Catfish breeding and seed production • Better management practices for *Litopenaeus vannamei* • Breeding and seed production of Pengba • Brackishwater Aquaculture (Milkfish, Grey Mullet, Mud crab)

2018-19	12	• Magur breeding & hatchery management • Carp breeding and hatchery management • Carp culture practice and recent advances • Freshwater prawn seed rearing and culture • Freshwater Fish seed Production and Hatchery Management • Fish and Prawn culture • Hygienic handling and value addition of fresh • Indian major carps seed production • Catfish breeding and seed production • Better management practices for *Litopenaeus vannamei* • Breeding and seed production of Pengba • Brackishwater Aquaculture (Milkfish, Grey Mullet, Mud crab)
2019-20	14	• ICAR-CIFE, Mumbai and Erfinden Technologies Pvt Ltd came together to bring in Artificial Intelligence (AI) based solution for fish identification. Therefore MoU has been made for developing a proof of concept on this field on 28 August, 2020 • MoU with ABI incubatee Mr. S. Deshpande was signed on 28 August, 2020 for new startup: Non veg mart. The Non veg Mart is a startup to supply prime quality fresh fish at affordable prices. CIFE will be extending technical guidance on products quality and packaging • Magur breeding & hatchery management • Carp breeding and hatchery management • Carp culture practice and recent advances • Freshwater prawn seed rearing and culture • Freshwater Fish seed Production and Hatchery Management • Fish and Prawn culture • Hygienic handling and value addition of fresh • Indian major carps seed production • Catfish breeding and seed production • Better management practices for *Litopenaeus vannamei* • Breeding and seed production of Pengba • Brackishwater Aquaculture (Milkfish, Grey Mullet, Mud crab)

6.6.4.3. Extension Planning and Technological Impact

Recently, 3rd Party Impact Evaluation of Central Sector Schemes (Fisheries Sciences) was conducted by IASP (Indian Society of Agribusiness Professionals), New Delhi.It has evaluated the following two technologies of CIFE.

A. Farming of marine shrimp *P. vannamei* in inland saline water

ICAR- CIFE has developed a package of practices for farming of shrimp *Penaeus vannamei* in inland saline water. Previously, this species was culturing only in the coastal areas using brackish water. With help of technologies developed by CIFE, now *P. vannaemei* is being cultured in the salt-affected areas of Haryana, Punjab, Delhi, Uttar Pradesh and Rajasthan. It has directly reached out to 495 shrimp farmers and a shrimp farmer can reap an average net benefit of Rs.3.9 lakh / ha / crop of 4 months. With the freshwater prawn farming introduced by CIFE in the north eastern states in the country, farmers can earn a profit of Rs.1.5-1.75 lakh / ha. This technology is transferred to the state government departments.

B. Utilization of low-cost fish (Value added fish snacks)

Developed a number of value added fish products including, extruded products, battered and breaded products, smoked products, fish pickle, ready to serve fish products, specialty products and thermal processed products from low valued fishes, and industrial products viz., Chitin and Chitosan from crustacean wastes.

Mechanism to study the technological impact

ICAR-CIFE is having PME cell to evaluate the project and technologies. Also ICAR-CIFE is having ITMU & ABI unit for technology commercialisation and promoting aquapreneurship. ICAR-CIFE is also having institute research project on “Assessing the Impacts of ICAR-CIFE’s Skill Development Programmes (CIFE-2020/8)” for three years’ duration (2020-2023). However from 2019 3rd party evaluation and impact assessment were initiated. Further, feedback forms are being taken from the stake holders to evaluate the impact of technologies.

6.6.4.4. Implementation of National Initiatives

Mera Gaon Mera Gaurav

The major activities conducted during this period were; Attracting Fisher-Youths in Fisheries Education, Training Need Assessment, Demonstration of value added fish products to fisherwomen, and Developing Soil (and Water) Health Card for Aquaculture. CIFE, in its own way, had designed a demand driven programme under Mera Gaon Mera Gourav (My Village My Pride) for Attracting and Retaining Rural Youth to Agriculture (ARYA). CIFE faculty gave illustrated and interesting lectures about fisheries education and its scope in public and private sector, the students of CIFE explained about their joining this sector. Lastly a fisher-student gave an interesting feedback about this awareness programme.

Training Need Assessment: From the report on baseline survey conducted in five villages in Raigad district, Karanja and Kunde villages have been selected to carry out further development work as these two villages only are engaged with fisheries related

activities. Accordingly, training on value addition and fisheries product development has been planned-to be conducted in both the selected villages with the help of the expert from our institute.

From the feedback from the adopted villages i.e. Versova and Mahim (under Mera Gaon Mera Gaurav) during the base line survey, it was learnt that they need a training programme on value added fish products preparation. Accordingly, a training programme was organized for the fisher women of Versova and Mahim on 2 December, 2015. Total 30 women participated from these two fishing villages. They were trained in making products like fish wada, chakli, pickle and cutlet from the low cost fish mince.

Green Initiative

ICAR-CIFE has initiated following measures under green initiative and the Institute has received 'Clean and Green Campus Award' for the year 2016.

- Segregation of dry and wet waste and dumping them separately
- Waste from the mess and canteen has been converted to organic manure by composting method.
- Installation of solar and LED lamps to reduce the fuel consumption
- Banned the use of plastic (folders, glasses, files) in the campus
- Provision of rain water harvesting
- Installation of Recirculatory Aquaculture System (RAS) in the wet lab.

6.6.4.5. Innovation and Best Practices

The institute has five regional centres (Kolkata, Motipur, Kakinada, Powerkheda & Rohtak) in different parts of country to reach out to fish farmers. ICAR-CIFE has used ICT innovatively and developed a mobile app '***mjhiinga***' for providing technical solutions to shrimp farmers. ICAR-CIFE is also implementing Mera Gaon Mera Gaurav programme to reaching to farmers at their doorstep. ICAR-CIFE also offers PG Diploma in Inland Fisheries & Aquaculture Management (PGDIF&AM), 6 Months Certificate Course on Skill Development in Aquaculture will be held at CIFE, Rohtak Centre and One Year Skill Development Certificate Course on "Fish Farming & Hatchery Operation" at Kakinada Centre.

Using trainee as the trainer for promoting extension activities is another innovative idea being adopted in at the institute which has gained popularity. ICAR-CIFE also celebrates National Fish Farmers day on 10th July every year to honour progressive fish from throughout the country.

6.6.4.6. Consultancy/Certification/Testing

Resources generated through Testing (Kolkata Centre):

Year	Particular	Amount (Rs.)
2014-15	Water testing fee	15450.00
	Feed testing fee	6300.00
	Water & Soil testing fee	34089.00
2015-16	Feed testing fee	4160.00
	Water & Soil testing fee	23550.00
2016-17	Feed testing fee	47450.00
	Water & Soil testing fees	4950.00
2017-18	Feed testing fees	21500.00
2018-19	Sale of water & soil testing kits	424600.00
	Feed testing fees	17200.00
	Sale of water & soil testing kits	801200.00
2019-20	Feed testing fees	60500.00
	Total	**14,60,949.00**

Revenue generated from the Rohtak Centre

2016-17	Analytical services and trainings	Rs. 2537519.00
2017-18	Analytical services, Seed selling, Barcoding consultancies, trainings	Rs. 3154962.00
2018-19	Soil and water testing, Seed selling, hatchery services etc. Barcoding consultancies, Zebrafish selling	-
2019-20	Soil and water testing, Seed selling, hatchery services etc. Barcoding consultancies, Zebrafish selling	Rs. 5200000.00

Consultancy

1. **DNA barcoding of fish species: Rs. 70000**
2. Title of Project: ***Preliminary assessment of temperature tolerance limits of selected fishes and shellfishes of Jaitapur coast around NPP site.***
   (A project under the Consultancy service contract for conducting Coordinated Studies and developing Biodiversity Conservation Plan (marine animals – fish and shellfish) for the region around Jaitapur Nuclear Power Park, Dist. Ratnagiri, Maharashtra)
   Consultancy and revenues received from NPCIL project was Rs. 815400.00

6.6.5. Faculty and Staff Development

6.6.5.1. Recruitment and Promotional Avenue

The recruitment procedures are followed as per the guidelines issued by Govt. of India/ ICAR from time to time. The recruitment of faculty i.e. Scientific Staff, Technical Officer and Group-A Administrative Officers are conducted by ASRB, New Delhi. The recruitment of Category B & C of Technical, Administrative and Supporting Staff is carried by the Institute as per instructions of the ICAR.

The promotion of ARS scientists is processed through CAS up to level 9000 (Grade Pay) by the Institute. The committee for assessment is nominated by ICAR and ASRB. The assessment from Senior Scientist to Principal Scientist is carried by the ASRB from time to time.

The promotion of Technical Staff under category-I & II up to Technical Officer (T-5) under five-yearly assessments is carried by the institute. The assessment committee shall be nominated by the Director of the institute. The promotion of Technical Officers Category-III from Sr. Technical Officer (T-6) to Chief Tech. Officer (T-9) is also done in the institute, but the assessment committee(s) includes chairman, SC/ST member and outside expert proposed by the Director and nominated by the chairman, ASRB. After recommendations of the committee, the proceeding along with the checklist is send to the council for final approval.

The direct recruitment of technical category only in the lowest grade in each of the three categories (i.e. category I :- T-1, Category II:- T-3 and Category III:- T-6). Category I & II recruitment is done at Institute level as per Recruitment Rules issued by the ICAR and Category III Recruitment conducted by ASRB, New Delhi.

The promotion of Administrative Officers (Admn. Officer and above) is done by the council and for administrative staff (upto Asstt. Admn. Officer including supporting staff) is done at the institute level as per the recruitment rules issued by the ICAR, New Delhi from time to time. The direct recruitment of higher positions are done by the Council.

6.6.5.2. Participation of Faculty in Symposia/Workshops

Participation of faculty in Symposia/workshops/seminars/special assignments etc.

Year	2016-2017	2017-2018	2018-2019	2019 (Apr-Dec)	2020 (Jan-Dec)
Symposia/workshops/seminars/special assignments etc.	71	73	86	81	108
Visits abroad to attend Symposia/workshops/seminars/special assignments/trainings etc.	06	04	-	10	-

Year 2016-2017

Name of the Programme	Venue	Period	Name of the person who participated
Exploring Gene Expression Data Using Transcriptome and Microarrays	Computational Biology Facility, Rajiv Gandhi Centre for Biotechnology Thiruvananthapuram, Kerala	18-20 Apr, 2016	Sujata Sahoo
National Consultation on Ornamental Fishes	NFDB, Hyderabad	27-28 Apr, 2016	B.K. Mahapatra Paramita Sawant
Pillay Aquaculture Foundation, Third Congress on Social Entrepreneurship in Aquaculture	ICAR-CIFE, Mumbai	27-29 Apr, 2016	All Scientific Staff
Meeting on Second Green Revolution	ICAR Research Complex for Eastern Region, Patna	03 May, 2016	B. K. Mahapatra
International day for Biological Diversity 2016	Yashwantrao Chavan Auditorium, Mumbai	22 May, 2016	Scientists and Technical Staff
FAO Consultative Workshop to Develop a Zoonotic Emerging Infectious Disease Project in Partnership with Government of India	Great Eastern Hotel Kolkata	20-22 May, 2016	B.K. Mahapatra
Interface meeting on Enhancing the Preparedness of Agricultural Contingencies for West Bengal: Kharif, 2016	ICAR-ATARI, Kolkata	31 May, 2016	A.R. Sen
Distributed and Embedded High Performance Computing (deHPC) Symposium	Indian Institute of Technology Bombay, India	01-04 Jun, 2016	Vinod Kumar Yadav
Review Meeting for Development of Ornamental fisheries	NFDB, Hyderabad	07 Jun, 2016	B.K. Mahapatra
Review Meeting of Fishery Scientist under ICAR-ATARI, Jabalpur	ICAR-CIFE, Kolkata Centre	09-10 Jun, 2016	A.R. Sen
Parliamentary Standing Committee on Agriculture meeting on Research and Development of Food Processing Sectors and its Impact on Human and Animal Health	ITC Sonar, Kolkata	18 Jun, 2016	A.R. Sen
XXIII meeting of ICAR RegionalCommittee - II	ICAR-NAARM, Hyderabad	24-25 Jun, 2016	B.K. Mahapatra Muralidhar P. Ande
Meeting on Board of Study of Management	Govt. Holker Science College, Indore	02 Jul, 2016	R. K. Upadhyay
National Fish Farmers Day	ICAR-CIFE, Mumbai	10 Jul, 2016	All Scientist & Staff
Inter State Fair Sangam-2016	National Horticulture Board Hajipur, Bihar	8-10 Jul, 2016	S. Munilkumar

Workshop on Culture of Lesser Known Fish Species with Commercial Importance of NE India	NE Regional Centre of NIRD, Guwahati	16 Jul, 2016	S. Munilkumar
Workshop on Inland Saline Aquaculture	Lahli Village, Haryana	19-20 Jul, 2016	N.P. Sahu
National Consultation on Best Management Practices for Ornamental Fish Production	NFDB, Hyderabad	25-27 Jul, 2016	B.K. Mahapatra
Workshop on National Operating Standards for Skill Development in Fisheries	NFDB, Hyderabad	04-05 Aug, 2016	Latha Shenoy
Brain Storming Session on WSSV/EHP	Agharkar Research Institute, Pune	05 Aug, 2016	Rajendran K.V.
National Seminar on Approaches to Clean and Sustainable Development in Costal Zones of India-Present Status and Future Need	CSIR-NIO, Regional Centre, Mumbai	25-26 Aug, 2016	Annam Pavan Kumar Saurav Kumar Kundan Kumar
Review Meeting on NFDB Funded Technology Upgradation Projects	NFDB, Hyderabad	30-31 Aug,2016	Neelam Saharan
VI Advisory Committee Meeting	CIFRI, Barrackpore	30-31, Aug 2016	S. Dasgupta G.H. Pailan
23rd Zonal Workshop of KVK	KVK Khorda, ICAR-CIFA, Bhubaneswar	03-05 Sep, 2016	B. K. Mahapatra
Regional Committee Meeting VII	Goa	08-09 Sep, 2016	Kiran Dube Rawat
Seminar cum Workshop on Safe Reuse of Municipal Wastewater	Netaji Subhas Regional Institute Cooperative Management, Kalyani	09-10 Sep, 2016	B.K. Mahapatra S. Datta
National Conference on Inland Fisheries	Seva Kendra, Kolkata	20-21 Sep, 2016	B.K. Mahapatra
District Level Children Science Congress	Krishan Bhabini Nari Siksha Mandir, Chandennagore	23 Sep, 2016	B.K. Mahapatra
Review Committee Meeting	NFDB, Hyderabad	27 Sep, 2016	Kiran Dube Rawat
Board of studies meeting	P.R. Government College, Kakinada	30 Sep 2016	Muralidhar P. Ande
3rd Meeting of the Scientific Advisory Committee (SAC) of the Sasya Shyamala KrishiVigyan Kendra	Ramakrishna Mission Vivekananda University	01 Oct, 2016	B.K. Mahapatra
International Workshop on Linear Mixed Models in Practice: An As-REML-Oriented Approach	ICAR-CIFE, Mumbai	13-15 Oct, 2016	All Scientific Staff

Feed and Feeding Management in Cage Culture	Maharashtra Fisheries Department, Govt. of Maharashtra, Mahila Vikas Mandal Mantralaya, Mumbai	18 Oct, 2016	N.P. Sahu
Meeting of *Nagar Rajbhasha Karyanvayan Samiittee*	SPM, Hoshangabad.	24 Oct, 2016	Sunil Nayak, R.K. Upadhyay
International Conference on Science and Technology for National Development	KUFOS, Cochin	25-27 Oct, 2016	K.A. Martin Xavier Manjusha L.
Workshop on Dynamics of Challenges and Options in Integrated Aquaculture	Hotel The Panache, Patna, Bihar	02 Nov, 2016	G.H. Pailan
Review Meeting of ICAR All India Network Projects, Consortium Research Platform and Outreach Projects of the Fisheries Division	NASC complex, New Delhi	03-04 Nov, 2016	Annam Pavan Kumar
Meeting on Fish Culture Policy	Atal Bihari Vajpayee Institute of Good Governance & Policy Analysis, Bhopal.	07 Nov, 2016	R.K. Upadhyay
International Symposium and IMSACON-VII	GADVASU, Ludhiana	10-12 Nov, 2016	A.R. Sen
Seminar: Prophylaxis in Aquaculture	ICAR-CIBA, Chennai	16 Nov, 2016	Megha Bedekar Saurav Kumar
Half yearly Review Meeting on CRP Vaccine and Diagnostic	ICAR-CIBA, Chennai	16 Nov, 2016	Megha Bedekar Saurav Kumar
52nd meeting of Academic Council	ICAR-CIFE, Mumbai	18 Nov, 2016	Members of Academic Council
National Seminar on Ornamental Fish culture	Rabindra Bhavan, Barasat, West Bengal	19 Nov, 2016	B.K. Mahapatra
Workshop on Designing of Course & Education Material for Online Certificate Courses	ICAR-CIFE, Mumbai	21-23 Nov, 2016	All Scientific staff
International Conference on Statistics & Big Data Bioinformatics	ICRISAT, Hyderabad	23 Nov, 2016	Ramasubramanian V.
Namami Devi Narmade Abhiyan	Office of the Commissioner, Hoshangabad	25 Nov, 2016	Dhalongsaih Reang R. K. Upadhyay
ICAR Education Central Zone Monitoring and Review Meeting	ICAR-CIFE, Mumbai	28-29 Nov, 2016	B.K. Mahapatra
National Seminar on Aquaculture diversification: the way forward for blue revolution	ICAR-CIFA, Bhubaneswar	01-03 Dec, 2016	N.P. Sahu, Gayatri Tripathi, Rupam Sharma Sikendra Kumar

National Consultation on Higher Fishery Education	ICAR-CIFE	16 Dec, 2016	All Scientific Staff
24th Annual Conference of Agricultural Economics Research Association on 'Agriculture for Nutrition Security'	ICAR-IVRI, Izzatnagar, Bareilly	15-17 Dec, 2016	Nalini Ranjan Kumar Neha Wajahat Qureshi
31st Meeting of the Institute Management Committee of NBFGR, Lucknow	NBFGR, Lucknow	19 Dec, 2016	Rajendran K.V.
Brain Storm discussions on Fish diseases & Ornamental fishes organised by DBT, New Delhi	College of Fisheries, (CAU), Agartala	21 Dec, 2016	S. Munilkumar
International Conference on Environmental Conservation and Human Health -Challenges & Strategies	S.V. University, Tirupathi	21-23 Dec, 2016	Mukunda Goswami
Seminar on Challenges and Opportunity in Aquaculture Sector	College of Fisheries, Dholi, Bihar	26 -29 Dec, 2016	N.P. Sahu
International Conference on Emerging Technologies in Agricultural and Food Engineering	IIT, Kharagpur	27-30 Dec, 2016	A.K. Verma
Bengal Fish Fest 2017	Nalbon Food Park, Salt Lake, Kolkata	07 Jan, 2017	Scientists of Kolkata Center, CIFE
Improvement of Ecosystem Services for Livelihood Development Through Community Participation	IBRAD campus, Prafulla Kanan, Kestopur	17 Jan, 2017	B.K. Mahapatra
Group Monitoring Workshop on Review of Young Scientist Scheme Projects	Kalinga Institute of Industrial Technology Bhubaneshwar	02-03 Feb, 2017	Annam Pavan Kumar
Workshop on Impact Evaluation of Issues Related to Climate Change and Agriculture	Institute of Economic Growth New Delhi	6-10 Feb, 2017	Neha Wajahat Qureshi
International Conference, Profit on Aquaculture - 2017	Bhimavaram, West Godavari District, Andhra Pradesh	11-13 Feb, 2017	V.K. Tiwari Muralidhar P. Ande Babita Rani
Meeting on National Policy on Inland Fisheries and aquaculture	ICAR-CIFE	23 Feb, 2017	All Scientists
Career Mela	Govt. Home Science College, Hoshangabad, M.P	22-23 Feb, 2017	Sunil Nayak Dhalongsaih Reang, R.K. Upadhyaya L.P. Bamaliya

3rd Annual Review Meeting of all ongoing projects under NASF for the theme area, Abiotic and Biotic Stresses, and Quality Traits in Animals and Fishes	NASC, New Delhi	23 Feb, 2017	S. Dasgupta
Career Mela	Govt. Narmada Maha Vidhyalay College, Hoshangabad, M.P	02-03 Mar, 2017	Sunil Nayak Dhalongsaih Reang, L.P. Bamaliya
Second Student Convention on Innovative Approaches for Academic Excellence in Higher Fisheries Education	CIFE, Mumbai	04-06 Mar, 2017	All Scientists & Students
National consultation on Off Season Spawning in Carps Towards Year Round Availability of Seeds	ICAR-CIFA, Bhubaneswar	09 Mar, 2017	S. Dasgupta
Science Academy's Lecture Workshop	Department of Zoology, University of Calicut	09-10 Mar, 2017	Rajendran K.V.
Workshop under All India Survey of Higher Education	Pune	10 Mar, 2017	Vinod Kumar Yadav
National Workshop on Responsible Use of Antibiotics and Chemicals, Impact on Animal Health and Aquaculture	ICAR-CIFA, Bhubaneswar	10 Mar, 2017	T. I. Chanu
Fourth Indian Biodiversity Congress (IBC 2017)	Pondicherry University Puducherry UT	10-12 Mar, 2017	Vidya Shree Bharti
National Seminar on Priorities in Fisheries and aquaculture	College of Fisheries, Rangeilunda, Bhubaneswar	11-12 Mar, 2017	N.P. Sahu B.K. Mahapatra

Important Workshops/Seminars/Meetings etc. attended by Director, CIFE, Mumbai

Date	Place	Name of the Programme
25 April 2016	Ludhiana	Chaired the session on Fisheries Education and Trainings in India during the Punjab Fish Festival
		Meeting with Addl. Chief Secretary, Punjab
4 May 2016 21 July 2016	ICAR, New Delhi	Meeting on `Marine Fisheries Policy'
14 May 2016		Seminar on 'Development of Fisheries in Vidarbha'
	TANUVAS, Chennai	11th National Symposium of Indian Agricultural Universities Association (IAUA) and Vice-Chancellor's meet.
01-02 June 2016	New Delhi	Committee meeting constituted to Suggest Draft National Policy on Marine fisheries and participated in DARE/ICAR's XII plan SFC meeting
27-28 June 2016	TEEB, Chennai	GIZ-MoEF and CC-BOBP-IGO-National Workshop on Dissemination of Study Results of Valuation Studies on Coastal and Marine Ecosystems
07-10 July 2016-	Hajipur, Bihar	Interstate horticulture fare 'Sangam 2016'
17 August, 2016	New Delhi	Meeting with Secretary (DARE) & DG, ICAR
08-09 September 2016	International Centre, Goa	24th meeting of ICAR Regional Committee No.VII
22 September 2016	New Delhi	Review meeting by Secretary (ADF)
27September 2016	NFDB, Hyderabad	Review meeting of NFDB project being operated at ICAR-CIFE and also Mahseer project
01-02 October 2016	Aqua Tourism Centre Nagaon, Assam	National Interactive Meet on Mahseer organized by ICAR-DCFR, Bhimtal
03 October 2016	CAU, College of Fisheries, Agartala	Foundation Day Programme of CAU, Agarthala
17 October 2016	New Delhi	ICAR Sectoral Committee Meeting of NAEAB
20 October 2016	Kakinada	Visit at CIFE Kakinada Centre along with DDG (Fy) and ADG (Inland Fy.) regarding discussion on land lease and transfer between CIFE/SVVU
01-04 November 2016	Patna	Meeting with Director Fisheries, Bihar with regard to new centre of CIFE at Motihar, Bihar
21 Nov, 2016	New Delhi	World Fisheries Day 2016
12-13 December 2016	Lucknow	Foundation day program of ICAR-NBFGR, Lucknow
26 December 2016	New Delhi	2nd meeting of committee to suggest Daft National Inland Fisheries & Aquaculture Policy
09-10 January 2017	New Delhi	Meeting of the Screening Committee of the "Niche Area of Excellence"
02-04 February 2017	IIM, Ahmedabad	Training on 'Developing Internal Talent and Leadership'
14-15 February 2017	New Delhi	Annual Vice-Chancellors (VCs) of AUs and Directors' of ICAR Institutes Conference
10-11 March 2017	ASRB, New Delhi	Meeting by chairman ASRB to discuss issues relating to optimal utilization of infrastructure
18 March 2017	NIO, Goa	Meeting with NIO Director regarding Time Series Oceanographic off Mumbai
19-20 March 2017	Surajkund Faridabad New Delhi	Seminar on "Utilization of Saline affected area for White Shrimp Culture"

Visits Abroad (2016-2017)

Name of the person who attended	Programme	Organized by	Funded by	Place	Period
M. Goswami	14th International Conference on Invertebrate and Fish Cell Culture & World Congress in *In Vitro* Biology	Society for In Vitro Biology, USA	DBT, Govt. of India & Society for *In Vitro* Biology, USA	San Diego, California, USA	11-15 Jun, 2016
Neha W. Qureshi	18th Biennial Conference of International Institute for Fisheries Economics and Trade (IIFET)	University of Aberdeen, Scotland, UK	International Institute for Fisheries Economics and Trade (IIFET), Oregon State University, Oregon, USA	University of Aberdeen, Scotland, UK	0-15 Jul, 2016
A. Pavan Kumar	International Symposium on Fish, Genes, Genomes: Contribution to Ecology, Management and Conservation	Fisheries Society of British Isles	SERB, New Delhi CICS, Chennai	University of Bangor, Wales, UK	18-22 Jul, 2016
A.K. Balange	11th Asian Fisheries and Aquaculture Forum Bangkok	Asian Fisheries Society, NACA & Fisheries Department, Thailand	Asian Fisheries Society, NACA & Fisheries Department, Thailand	Bangkok, Thailand	3-7 Aug, 2016
Gopal Krishna Arpita Sharma	Global Conference on Climate Change Adaptation for Fisheries and Aquaculture	NACA, Thailand	NACA, Thailand	Bangkok, Thailand	8-10 Aug, 2016
Rajendran K.V.	International Training Workshop on Methods in Histopathology and Molecular Biology for Disease Diagnosis in Finfish and Shrimp	Cefas, UK	Department of Biotechnology Govt. of India	Weymouth, UK	30 Jan-1 Feb, 2017

Year 2017-2018

Participation by Dr Gopal Krishna, Director, ICAR-CIFE

S. N.	Meetings	Venue	Date	Organized by
1.	Finalization of EFC and cadre review of Scientists/ Officers	KAB II, Pusa, New Delhi	6-7 April, 2017	DDG (Fisheries Science), New Delhi
2.	Online Examination System (Chairman)	KAB I, Pusa, New Delhi	11 April, 2017	ASRB, New Delhi
3.	Krishi Mela	Motihari, Bihar	13-14 April, 2017	Agriculture Department, Bihar
4.	International Symposium on "Aquatic Animal Health and Epidemiology for Sustainable Asian Aquaculture"- Session Chair	ICAR-NBFGR, Lucknow	20-21 April, 2017	Director, NBFGR, Lucknow
5.	Draft Bill and Cabinet Note on 'National Council For Higher Agricultural" Education'	Krishi Bhavan, ICAR, New Delhi	25April, 2017	DG, ICAR, New Delhi
6.	Foundation Day Program	ICAR-CIFT, Kochi	29 April, 2017	Director, ICAR-CIFT, Kochi
7.	Expert Member of Selection Committee for Professors and Dean	MCAER, Pune	2 May, 2017	Maharashtra Council of Agricultural Education and Research, Pune
8.	Expert Member of Selection Committee for Professors and Dean	MAFSU, Nagpur	12 August, 2017	Maharashtra Animal & Fishery Sciences University, Nagpur
9.	Workshop on 'Needs of Human Resource Development in Fisheries and Aquaculture in NEH States'	Sonitpur, Assam	5 May, 2017	Director, ICAR-CIFE, Mumbai
10.	Meeting with Principal Secretary (Fy.) and Director Fisheries, Madhya Pradesh, regarding land acquisition for ICAR-CIFE, Powarkheda	Secretariat, Bhopal	8 May, 2017	DoF, Bhopal
11.	Delivered guest lecture on "Strategies for enhancement of quality education for Agriculture/Animal Husbandry and Fisheries Sectors"	4th Foundation Course for Faculty of Agricultural Universities	18 May, 2017	NAARM, Hyderabad
12.	Follow-up meeting with Secretary (Fy) and Director of Fisheries, M.P.	Secretariat, Bhopal	21 May, 2017	DoF, Bhopal
13.	Regional Policy Workshop for "National Inland Fisheries and Aquaculture Policy of India"	Vijayawada, Andhra Pradesh	30 May, 2017	Director, ICAR-CIFE, Mumbai
14.	Invited Guest at Inaugural Function of ZoologicalSociety of Indiaand International Symposium on "Culture Based Fisheries in Inland Open Waters"	ICAR-CIFRI, Barrackpore	9-10 June, 2017	ICAR-CIFRI, Barrackpore
15.	Regional Policy Workshop for Formulation of National Inland Fisheries &Aquaculture Policy	Guwahati, Assam	16 June, 2017	Director, ICAR-CIFE, Mumbai
16.	Institute's EFC meeting	Krishi Bhavan, ICAR, New Delhi	18 -19 June, 2017	DG, ICAR, New Delhi
17.	Central Joint Staff Council Meeting	AP Shinde Auditorium, NASC, New Delhi	21 - 23June, 2017	DG, ICAR, New Delhi
18.	Follow-up meeting with Secretary (Fy) and Director Fisheries, M.P	Secretariat, Bhopal	22 June, 2017	DoF, Bhopal

19.	Meeting with DG ICAR on various Institutional matters	Krishi Bhavan, ICAR, New Delhi	11 July, 2017	DG, ICAR, New Delhi
20.	ICAR Foundation Day, Award Ceremony and Directors Conference	AP Shinde Auditorium, NASC, New Delhi	16 July, 2017	DG, ICAR, New Delhi
21.	Regional Policy Workshop for Formulation of National Inland Fisheries & Aquaculture Policy	Patna, Bihar	22 July,2017	Director, CIFE, Mumbai
22.	National Workshop on "National Inland Fisheries and Aquaculture Policy of India"	Krishi Bhavan, ICAR, New Delhi	28July, 2017	Joint Secretary (Fisheries), DADF, New Delhi
23.	Controller of Examination, ASRB, for finalization of tender documents	KAB I, Pusa, New Delhi	4 August, 2017	Controller of Examination, ASRB, New Delhi
24.	8th Brain Storming Session on "Expectations from Agricultural Universities, Challenges and Mitigation Strategies"	ITC Hotel, Kolkata	19-20 August, 2017	All India University Association , New Delhi
25.	Fisheries development in India and the status of various sanctioned research projects	Krishi Bhavan, ICAR, New Delhi	4 September, 2017	Secretary DADF, New Delhi
26.	Revised Score Cards for all direct recruitment categories of senior scientific position	Krishi Bhavan, ICAR, New Delhi	8 September, 2017	DG, ICAR, New Delhi
27.	Opening Ceremony of Regional Research and Training Center (RRTC) at Motipur	Motipur, Muzaffarpur, Bihar	10September, 2017	Director, ICAR-CIFE, Mumbai
28.	Special Guest at the"Platinum Jubilee Celebration of the Institute and Hindi Workshop"	ICAR- CIFRI, Barrackpore	15 September, 2017	Director, ICAR-CIFRI, Barrackpore
29.	Expert Group Meeting related to Agriculture and Allied Activities for preparation of Development Agenda	NITI Aayog, New Delhi	21 September, 2017	Member, NITI Aayog, New Delhi
30.	Restructuring and Revamping of ASRB	Committee Room, NASC, New Delhi	3October, 2017	Chairman High Power Committee, New Delhi
31.	Revised Score Cards for all direct recruitment categories of senior scientific positions	KrishiBhavan, ICAR, New Delhi	5 October, 2017	DG, ICAR, New Delhi
32.	Workshop on "Conservation Policies for Hilsa and Mahseer"	NASC, New Delhi	7 November, 2017	NAAS, New Delhi
33.	Mid Term Review Meeting of ICAR Regional Committee No. VII	ICAR-CIAE, Bhopal	10 November, 2017	DDG, NRM, New Delhi

34.	Meeting on Welfare of Other Backward Classes (2016-17) - Examination of the subject "Measures undertaken to secure representation of OBCs in employment and for their welfare in PSUs and other Organizations and Institutions under the Ministry of Agriculture and Farmers Welfare"	Parliament Annex Building, New Delhi	13 November, 2017	The Ministry of Agriculture and Farmers Welfare, New Delhi
35.	Harmonizing the academic rules and education related matters of the students in Deemed Universities	NDRI, Karnal	15 November, 2017	Director, NDRI, Karnal
36.	11th Indian Fisheries & Aquaculture Forum	ICAR-CIFT, Kochi	21-24 November, 2017	Asian Fisheries Society Malaysia and AFSIB and CIFT, Kochi
37.	Director IVRI, regarding mutual collaboration on Academic and Research	IVRI, Izatnagar	25 November, 2017	Director, IVRI, Izatnagar
38.	'Brainstorming Session on 'Strategies of Promoting Fisheries Production, Entrepreneurship and Value Added Fish Products in Madhya Pradesh State'	ICAR-CIFE, Powarkheda, Hoshangabad, MP	1 December, 2017	Director, ICAR-CIFE, Mumbai
39.	Revise/Frame Recruitment Rules for Fishing Vessel Crew for Fisheries Research Institutes of the Council	KrishiBhavan, ICAR, New Delhi	6 December, 2017	DG, ICAR, New Delhi
40.	Meeting with DDG (Edn.), ICAR regarding NAHEP proposal of CIFE	NASC, New Delhi	25 January, 2018	DDG (Education), ICAR, New Delhi
41.	Project Evaluation and Monitoring Committee meeting of NAHEP (Member, Project Management Ccommittee)	NASC, New Delhi	29 January, 2018	DDG (Education), ICAR, New Delhi
42.	Meeting with DDG (Education) & DDG (Fisheries Science)	KAB II, Pusa New Delhi	6 February, 2018	DDG (Education), ICAR, New Delhi
43.	Review committee meeting of the projects under Niche Area of Excellence in Agricultural Sciences	KAB II, Pusa New Delhi	15 February, 2018	DDG (Education), ICAR, New Delhi
44.	Meeting on "Scholarships for foreign nationals studying in India"	KAB II, Pusa New Delhi	16 February 2018	DDG (Education), ICAR, New Delhi
45.	Agricultural Summit at Rohtak	Rohtak	25 March, 2018	Agriculture Department, Haryana

Participation by Faculty of ICAR-CIFE

Name of the faculty	Programme attended	Organized by and Venue	Date
K. Pani Prasad	Meeting for finalization of EFC of CIFE	ICAR, New Delhi	6-7 April, 2017
Ashutosh D. Deo	Workshop on "Introduction to GeM–Government e-Marketplace"	ICAR-CIFE, Mumbai	18 April, 2017
Rajendran K.V.	Annual Review Meeting of National Surveillance Programme for Aquatic Animal Diseases	ICAR-NBFGR, Lucknow, Uttar Pradesh	18-19 April, 2017
Rajendran K.V.	International Symposium on "Aquatic Animal Health and Epidemiology for Sustainable Asian Aquaculture"	ICAR-NBFGR, Lucknow, Uttar Pradesh	20-21 April, 2017
Rajendran K.V.	Strategy Planning Workshop of "National Surveillance Programme for Aquatic Animal Diseases"	ICAR-NBFGR, Lucknow, Uttar Pradesh	22 April, 2017
B. K. Mahapatra, G. H. Pailan, S. Datta, S. Munil Kumar, S. Dasgupta, Sujata Sahoo, Dilip Kumar Singh Ashok Biswas	Workshop on "Genetically Modified Crops-Poses a Greeter risks or Beneficial for India"	Vivekananda Vigyan Mission, Kolkata Unit, ICAR-CIFE, Kolkata Centre, Kolkata, West Bengal	15 May, 2017
G. H. Pailan, B. K. Mahapatra, Sujata Sahoo, S. Dasgupta Paramita B. Sawant	Stakeholder Workshop on "Development of Sustainable Coastal Livelihoods through Integrated Mangrove Fishery Farming Systems (IMFFS) Value Chain Development of Honey in Sundarban"	Shrimp Organisation Europe (SHORE) Bluesensus, Nature Environment and Wildlife Society, ICAR-CIFE, Kolkata Centre, Kolkata, West Bengal	22 May, 2017
G. H. Pailan	23rd Meeting of the ICAR Regional Committee, Zone III	Imphal, Manipur	30-31 May, 2017
K. Pani Prasad, P. P. Srivastava, G. H. Pailan, Gayatri Tripathi, S. Dasgupta, Sujata Sahoo	29th All India Zoology Congress and "International Symposium on Culture Based Fisheries in Inland Open Waters" and "Satellite Symposium on Fish Immunology"	ICAR-CIFRI, Barrackpore, West Bengal	9-11 June, 2017
G. H. Pailan	Meeting with the Shri. Radha Mohan Singh, Hon'ble Union Minister, Agriculture and Farmers' Welfare	ICAR, NIRJAFT, Kolkata, West Bengal	13 June, 2017
All faculty of CIFE, Mumbai	Agriculture Education Day	ICAR-CIFE, Mumbai, Maharashtra	1 July, 2017
V. Hari Krishna	National Consultation Workshop on "Formulation of National Inland Fisheries and Aquaculture Policy"	Department of Fisheries, Government of Himachal, Bilaspur, Himachal Pradesh	3 July, 2017
Gayatri Tripathi	Workshop on "Widefield and Confocal Microscopy"	Dept. of Bioscience and Bioengineering, IIT, Mumbai, Maharashtra	6 July, 2017

Gayatri Tripathi	Mega Launch Workshop of NACP-COALESCE Project under National Carbonaceous Aerosols Program, Ministry of Environment, Forest and Climate Change	IIT, Mumbai, Maharashtra	7 July, 2017
K. Pani Prasad Jeena K.	FAO-ICAR meeting to finalise the Operational Mechanism for Indian Network for Fisheries and Animals Antimicrobial Resistance (INFAAR)	ICAR-CIFE, Mumbai, Maharashtra	14 July, 2017
Sujata Sahoo	Workshop on "How AB Vista and FOSS can Help to Maximize he Profitability Through Nutrition?"	Hyatt Regency, Kolkata, West Bengal	3 August, 2017
K. Pani Prasad	Meeting to conduct Inspection of Post Import Quarantine Facility of Ornamental Fishes	Ministry of Agriculture & Farmers Welfare, GOI, Ameet Industries, Taloja, Navi Mumbai, Maharashtra	18 August, 2017
Gayatri Tripathi	The Sensitization Workshop on "National Agricultural Higher Education Project"	ICAR-Education Division, NASC Complex, New Delhi	23 August, 2017
Rajendran K. V.	Project Initiation Workshop-DBT funded project on "Molecular Screening, Cell Culture Based Isolation and Characterization of Finfish and Shellfish Viruses and Establishment of National Repository"	National Centre for Aquatic Animal Health, CUST, Kochi, Kerala	28-29 August, 2017
Ashutosh D. Deo	Workshop on "Emerging Trends in Information Technology in University Management"	Association of Indian Universities, New Delhi and Department of Computer Science, Shivaji University, Kolhapur, Maharashtra	28-30 August, 2017
Gayatri Tripathi	Meeting on "Prospects of Cage Fish Farming in Maharashtra" with the Hon'ble Minister Shri Mahadev Jagannath Jankar, Minister for Animal Husbandry, Dairy Development & Fisheries Development	Minister's Chamber, Mantralaya, Mumbai, Maharashtra	31 August, 2017
Rajandran K. V.	National Seminar on "Climate Change: Impact on Aquatic Environment and Fish Health"	National Academy of Agricultural Sciences (Bhubaneswar Chapter), ICAR-CIFA & Association of Aquaculturists, ICAR-CIFA, Bhubaneswar, Odisha	6 September, 2017
Sunil Kumar Nayak Dhalongsaih Reang	Meeting to Improve the Productivity and Production in the Reservoir Fisheries of Madhya Pradesh	M.P. Fish Federation, Bhadbhada Road, Bhopal, Madhya Pradesh	12 September, 2017
K. A. Martin Xavier	IDP member for renewing the approval for export license	Export Inspection Council, Mumbai, Maharashtra	15 September, 2017
G. H. Pailan	Hindi Workshop on "Current Scenario of Inland Fisheries"	ICAR-CIFRI, Barrackpore, West Bengal	15 September, 2017

G. H. Pailan	4th meeting of the Scientific Advisory Committee	Sasya Shyamala Krishi Vigyan Kendra, RKMVU, Narendrapur, West Bengal	15 September, 2017
Muralidhar. P. Ande R. R. S. Patnaik	Aquabiz-INDIA, 2017	DoF, Vijayawada Andhra Pradesh	15-17 September, 2017
Sujata Sahoo	National Seminar on "Opportunities and Challenges of Translational Research in The Frontier Areas of Animal Biotechnology and Fifth Annual Convention of SVSBT"	College of Veterinary Science and Animal Husbandry, OUAT, Bhubaneswar, Odisha	22-23 September, 2017
Shamna N., Ashok Kumar Lokesh Kumar	National Seminar on "Strategies Innovations and Sustainable Management for Enhancing Cold Water Fisheries and Aquaculture"	ICAR-DCFR, Bhimtal, Uttarakhand	22-24 September, 2017
Scientists of CIFE, Mumbai	Hindi Sanghoshti	ICAR-CIFE, Mumbai, Maharashtra	28 September, 2017
Chandra Prakash	Water Quality Management in Aquaculture	Madras University, Chennai, Tamil Nadu	5 October, 2017
Paramita B. Sawant	National Conference on "Advancements of Applied Zoology for Sustainable Development – Current Trends and Future Perspectives"	Department of Zoology, Pachalyappa College, Chennai, Tamil Nadu	5-6 October, 2017
G. H. Pailan	Workshop on ICAR-NASF project " Stock Characterization, Captive Breeding, Seed Production and Culture of Hilsa"	ICAR-CIFRI, Barrackpore, West Bengal	24 October, 2017
B. K. Mahapatra	9th International Conference on "Hydro-Gramin Technology, Sustainable Agriculture, Rural Development and Livelihood Improvement"	CUTM, Paralakhemundi, Gajapati, Odisha	28-29 October, 2017
Megha Bedekar	World Congress on "Biotechnology and Biological Studies"	Conference Era, New Delhi	9-11 November, 2017
Muralidhar. P. Ande	Mid-term review meeting of ICAR Regional Committee Zone-II	ICAR-CIFRI, Kolkata, West Bengal	13 November, 2017
Sunil Kumar Nayak	State Level Consultation Workshop on Anti Microbial Resistance (AMR)	Directorate of Health Services, Satpuda Bhawan, MP Hotel Palash, Bhopal, Madhya Pradesh	13 November, 2017
Latha Shenoy	Meeting on "ICAR Accreditation Process for Higher Agricultural Educational Institutions and Role of Regional Centers"	NASC complex, Delhi	14 November, 2017
G. H. Pailan	Scientific Advisory Committee Meeting	Ramakrishna Ashram Krishi Vigyan Kendra, Nimpith, West Bengal	18 November, 2017

Rajandran K. V. V. K. Tiwari K. Pani Prasad Amjad Balange Paramita B. Sawant, Babitha Rani Gireesh Babu Martin Xavier Shamna N. Dasari Bhoomaiah	11th Indian Fisheries and Aquaculture Forum Asian Fisheries Society Indian Branch (AFSIB)	ICAR-Central Institute of Fisheries Technology, Kochi, Kerala	21-24 November, 2017
Babitha Rani. A.M	International Seminar on "Recent Trends in Best Management Practices of Aquaculture"	NAAS Kochi Chapter and World Aquaculture Society Asian Pacific Chapter, KUFOS, Kochi, Kerala	25 November, 2017
B. K. Mahapatra	National Symposium on "Biodiversity and Natural Resources for Sustainable Development"	Department of Zoology, Chaudhary Charan Singh University, Meerut, Uttar Pradesh	24-26 November, 2017
Geetanjali Deshmukhe	TIFAC meeting on "Seaweed Utilization"	CSMCRI, Bhavnagar, Gujarat	27 November, 2017
Rajendran K. V.	The First Steering Committee Meeting for Asian Pacific Aquaculture 2019	Tamil Nadu Dr. J. Jayalalitha Fisheries University & World Aquaculture Society, Hotel Le Royal Meridien, Chennai	4 December, 2017
Husne Banu	Proteomics Bootcamp	IIT-Mumbai	11 December, 2017
Latha Shenoy	Stakeholders Interaction Program (Under TSP scheme) on CCRF and Awareness program on "Livelihood Improvement Through Value Addition of Fish"	Morbe, Raigad, Maharashtra	21 December, 2017
G. H. Pailan	Regional Advisory Meeting for Farms, Farmers' & Rural Areas	NABARD, Kolkata, West Bengal	29 December, 2017
G. H. Pailan	Interactive meeting with Shri Radha Mohan Singh, Hon'ble Union Minister, Agriculture & Farmers Welfare	NBBS & LUP, Nagpur, Maharashtra	30 December, 2017
Parimal Sardar	International Conference on "Recent Trends in Agriculture, Veterinary and Life Sciences-2017"	International Multidisciplinary Research Foundation in collaboration with Carmel College for Women, Nuvem, Goa	28-30 December, 2017
G. H. Pailan	Bengal Fish Fest, 2018	ICAR-CIFE, Kolkata Centre, Kolkata, West Bengal	05 January, 2018
S. Dasgupta	Workshop on "Conservation Strategies for Mahseer and Hilsa Fisheries"	NAAS, New Delhi	07 January, 2018
G. H. Pailan	Regional Review meeting on "Blue Revolution"	ICAR-CIFE, Kolkata Centre, Kolkata, West Bengal	10 January, 2018
Rajendran K. V.	Meeting of the Committee for change of nomenclature for the Departments/Centres of Tamil Nadu Fisheries University	Vice-Chancellor Camp Office, Tamil Nadu Dr. J. Jayalalitha Fisheries University, Chennai, Tamil Nadu	19 January, 2018

S. Dasgupta	Meeting on Hilsa project	ICAR-CIFRI, Barrackpore, West Bengal	24 January, 2018
Neelam Saharan	Program on "Science for Progress in India"	NIAS, Bangalore, Karnataka	22- 26 January, 2018
Ashutosh D. Deo	Symposium on "Aquaculture Nutrition"	Hotel Feathers, Manapakkam, Chennai, Tamil Nadu	1 February, 2018
Parimal Sardar	XVII Biennial Animal Nutrition Conference ANSICON-2018 on "Nutritional Challenges for Raising Animal Productivity to Improve Farm Economy"	Junagadh Agricultural University, Junagadh, Gujarat	1-3 February, 2018
Neelam Saharan	Competence Enhancement Program for Effective Implementation of Training Functions for HRD Nodal Officers of ICAR	ICAR-NAARM, Hyderabad, Telangana	15-17 February, 2018
S. Munilkumar	Workshop on "Developing Multi-Disciplinary Approach in Project Formulations And Innovations in Agriculture and Allied Sectors"	ICAR-CIFRI, Barrackpore, West Bengal	17 February, 2018
G. H. Pailan B. K. Mahapatra Munil Kumar S. Dasgupta Sujata Sahoo, Dilip Kumar Singh	One-day Farmers-Expert Interactive Workshop on "Problems and Constraints of Aquaculture Practices"	ICAR-CIFE, Kolkata Centre, Kolkata, West Bengal	19 February, 2018
All faculty of CIFE, Mumbai	National Science Day, "Student Ready Entrepreneurship in Fisheries: A Way Forward"	ICAR-CIFE, Mumbai, Maharashtra	28 February, 2018
All faculty of CIFE, Mumbai	Industry Meet	ICAR-CIFE, Mumbai, Maharashtra	28 February, 2018

K.A. Martin Xavier, Layana P.	International Workshop on "Indian Food Exports: Understanding Regulatory and Safety Requirements"	USFDA, EIC, EU and CFIA at Gold Finch Hotel, Mumbai, Maharashtra	9 March, 2018
Geetanjali Deshmukhe	Awareness Programme on "Mangrove Fishery Conservation"	Karanja, Maharashtra	13 March, 2018
Gayatri Tripathi	"Fiduciary and Orientation Workshop of NAHEP for Participating Agricultural Universities"	ICAR-Education Division, NASC Complex, New Delhi	14 March, 2018
Kiran Dube Rawat	Brainstorming Session on "Cage Culture in Inland Open Waters"	ICAR-CIFRI, Barrackpore, West Bengal	16 March, 2018
R. R. S. Patnaik	Aquaex India-2018	Society for Indian Fisheries and Aquaculture, Hitech Exhibition Centre, Hyderabad, Telangana	15-17 March, 2018
V. Hari Krishna Pankaj Kumar, Sreedharan K, Satya Prakash	Krishi Unnati Mela-2018	ICAR-IARI, New Delhi	16-18 March, 2018
V. Hari Krishna Pankaj Kumar Sreedharan K Satya Prakash	Agriculture Leadership	Department of Fisheries, Summit-2018 Haryana, Mela Ground, Rohtak, Haryana	24-26 March, 2018
Mukunda Goswami	Application of Fish Cell Line in, *in-vitro* Research: Status and Perspectives	105th Indian Science Congress Manipur University, Imphal	16-20 March, 2018
Annam P. Kumar	International Workshop on Mahseer Conservation	Bournemouth University, UK & KUFOS, Kochi	6 April, 2017
Aparna Chaudhari	Selection Committee Meeting for Netaji Subhas ICAR International Fellowships	Education Division, ICAR, NASC, ICAR, N. Delhi	6 September, 2017
Mukunda Goswami	Targeted Proteomics Workshop	IIT, Bombay	24-27 February, 2018

Visits abroad (2017-2018)

Name of Faculty	Place of visit and purpose	Date
K. Pani Prasad	Keynote Speaker at the International Conference on "Advances in Fish Health", University Putra, Malaysia	6 April, 2017
Gayatri Tripathi	Indian Delegation to the 10th Plenary Meeting of ISO/TC 234 "Fisheries and Aquaculture" held at Oslo, Norway	23 November, 2017
Megha Bedekar	Invited as Chair for one of the Conference Session in the International Conference on "Molecular Virology and Microbiology", Bangkok, Thailand	18-19 December, 2017
Rajendran K. V.	2nd Annual Meeting and Progress Review Part of the International collaborative project-BBSRC/Newton Fund/DBT Project: "Novel Molecular Approaches for Advancing Prediction and Mitigation of Disease Outbreaks in Aquaculture for Small Scale Farmers", Lilongwe, Malawi	14-16 March, 2018

Year 2018-2019

Participation by Dr Gopal Krishna, Director, ICAR-CIFE

Sno.	Name of the Programme	Venue	Date	Organized by
1.	Agriculture Fair	Motihari, Bihar	13-15 April, 2018	Department of Agriculture, Government of Bihar
2.	ERP System in ICAR	ICAR, Krishi Bhawan, New Delhi	28 June, 2018	Secretary ICAR, New Delhi
3.	Swaraj to Surajya: National Consultation on Making Agriculture Sustainable and Profitable	Pune, Maharashtra	26 July, 2018	Vaikunth Mehta National Institute of Cooperative Movement (VAMICOM), Pune
4.	National Conference of Vice-Chancellors & Directors on Research Innovation in Higher Education	Ashoka Hotel, New Delhi	27 July, 2018	University Grants Commission (UGC), New Delhi
5.	Directors' Meet	Fisheries Division, ICAR, KAB II, New Delhi	19-20 August, 2018	DDG (Fy.) ICAR, New Delhi
6.	Directors' Meet	Fisheries Division, ICAR, KAB II, New Delhi	29 August, 2018	DDG (Fy.) ICAR, New Delhi
7.	Meeting with Chairman, ASRB	KAB I, Pusa, New Delhi	30 August, 2018	Chairman, ASRB, New Delhi
8.	Meeting with DDG (Fy.)	Fisheries Division, ICAR,KAB II, New Delhi	01 October, 2018	DDG (Fy.), ICAR, New Delhi
9.	Agriculture Conclave Indira Gandhi	Pratisthan, Lucknow	04-06 October, 2018	Agriculture Department, Uttar Pradesh
10.	Centre Advisory Committee Meeting	ICAR-CIFE, Kolkata Centre, West Bengal	12 October, 2018	ICAR-CIFE, Mumbai
11.	Brainstorming Session of NAHEP	Krishi Anushandhan Bhavan II, ICAR, New Delhi	03 November, 2018	National Director, NAHEP, New Delhi
12.	Centre Advisory Committee Meeting	ICAR-CIFE, Powarkheda Centre, Hoshangabad, Madhya Pradesh	19 November, 2018	ICAR-CIFE, Mumbai
13.	Niche Area of Excellence Meeting	Education Division, KAB-II, Pusa, New Delhi	20 November, 2018	DDG (Agricultural Education), ICAR, New Delhi
14.	International Conference on "Agricultural Education-Sharing Global Experiences"	National Agricultural Science Complex, New Delhi	24-25 November, 2018	IAUA, New Delhi
15.	Farmers Meet and Industry Interaction	CIFE-Rohtak Centre, Haryana	07-10 December, 2018	ICAR-CIFE, Mumbai

16.	Workshop on "Strategies for Improving Professional Fisheries Education in India"	College of Fisheries, Mangalore, Karnataka	13 December, 2018	College of Fisheries, Mangalore, Karnataka
17.	The Next Version of ICAR-ERP	ICAR, Krishi Bhavan, New Delhi	18 December, 2018	ICAR, New Delhi
18.	Workshop on "Advances in Oceanography-Indian Ocean Perspective"	CSIR-NIO, Regional Centre, Mumbai	29 December, 2018	CSIR-National Institute of Oceanography, Goa
19.	International Conference on "Challenges and Opportunities for Sustainable Fisheries and Aquaculture Development"	College of Fisheries, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli, Ratnagiri	17-20 January, 2019	Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Interdisciplinary Society for Advancement of Agricultural Sciences and Technology, Dapoli, Ratnagiri
20.	World Brackishwater Aquaculture Conference: BRAQCON	ICAR-CIBA, Chennai	24-25 January, 2019	Society of Coastal Aquaculture and Fisheries (SCAFI)
21.	Annual Conference of Vice Chancellors of Agricultural Universities & Directors of ICAR Institutes	NASC Complex, New Delhi	29-30 January, 2019	DG, ICAR, New Delhi
22.	Conference of Directors of Fisheries and Animal Sciences Institutes	NASC Complex, New Delhi	31 January - 01 February, 2019	DDG (FS & AS), New Delhi
23.	Regional Expert Consultations Genetically Responsible Aquaculture: Sustainability of Genetically Fit Brood Stock and Seed of Certified Origin in Asian Aquaculture	ICAR-NBFGR, Lucknow, Uttar Pradesh	26-27 February, 2019	ICAR New Delhi, India and Network of Aquaculture Centres in Asia-Pacific Centre (NACA), Bangkok, Thailand
24.	Interaction meeting with Secretary MGM Education Trust Aurangabad	MGM Education Trust,	9 March, 2019	MGM Educational Trust Aurangabad, Maharashtra
26.	Genetic Improvement of *Clarias magur*: Present Status and Future Prospects	ICAR-CIFE, Kakinada Centre, Balbhadrapuram, Andhra Pradesh	15-16 March, 2019	ICAR-CIFE, Mumbai

Participation by Faculty of ICAR-CIFE

Name of the faculty	Name of the Programme	Venue	Date	Organized by
Kiran Dube	Sardar-Sarovar project	Nandurbar, Maharashtra	13, 19 April, 2018 1, 20 June 2018; 28 September, 2018	Commissioner of Fisheries, Maharashtra
B. K. Mahapatra	National Conference on "Recent Trends in Zoological Research in North East India"	North Eastern Hill University, Shillong, Meghalaya	19-20 April, 2018	Department of Zoology, North Eastern Hill University, Shillong, Meghalaya
Anathan P.S., Shashi Bhushan, Neha Q., Rathi B. Saurav Kumar	National Stakeholder Consultation Workshop on "National Inland Fishery and Aquaculture Policy of India-2017"	ICAR-CIFE, Mumbai	26-27 April, 2018	ICAR-CIFE, Mumbai & NFDB, Hyderabad
Megha K. Bedekar	3rd Interactive Meeting of Nodal Officers of SDAE	Port Blair, Andaman	04-05 May, 2018	ICAR-CIARI, Port Blair, Andaman
G. H. Pailan	23rd Midterm Review Meeting of ICAR Regional Committees (Zone-II)	Umiam, Meghalaya	10-11 May, 2018	ICAR, New Delhi
Faculty of CIFE, Mumbai	3rd International Symposium on Aquaculture and Fisheries Education	ICAR-CIFE, Mumbai	16-18 May, 2018	AFS, Malaysia; ICAR-CIFE, Mumbai; IFA, Mumbai, AFSIB, Mangalore
K. K. Krishnani	The Foundation day and 25th Annual General Body Meeting of the National Academy of Agricultural Sciences	NASC, New Delhi	04-05 June, 2018	NAAS complex, New Delhi
Faculty of CIFE, Mumbai	57th Annual Day	ICAR-CIFE, Mumbai	06 June, 2018	ICAR-CIFE, Mumbai
G. H. Pailan A. Biswas	12th Convocation of WBUAFS	WBUAFS, Kolkata	13 June, 2018	WBUAFS, Belgachia, West Bengal
Aparna Chaudhari	Assessment of Technologists of Export Oriented Establishments	Export Inspection Agency, Mumbai	20 June, 2018	EIA, Mumbai
Muralidhar P. Ande	24th Meeting of ICAR Regional committee -II	ICAR-CIFA, Bhubaneswar, Odisha	22-23 June, 2018	ICAR-CIFA, Bhubaneswar, Odisha
Faculty of CIFE, Mumbai	National Fish Farmers' Day	ICAR-CIFE, Mumbai	10 July, 2018	ICAR-CIFE, Mumbai
Gayatri Tripathi	Workshop on "Competency & Skill Building"	Mumbai	13 July, 2018	POSH at Work, Ministry of Women & Child Development, GOI
Muralidhar P. Ande	Workshop on "Ground Water Salinity Source Identification in Godavari Delta"	National Institute of Hydrology, Kakinada	25 July, 2018	National Institute of Hydrology, Kakinada, Andhra Pradesh

Paramita B. Sawant B. K. Mahapatra	Launching Workshop on Network project on 'Ornamental Fish Breeding and Culture'	ICAR-CMFRI, Kochi, Kerala	28 July, 2018	ICAR-CMFRI, Kochi, Kerala
Muralidhar P. Ande	Science and Engineering Research Board (SERB), DST Government of India	Indian Institute of Technology, New Delhi	30 July, 2018	IIT, New Delhi
K. K. Krishnani	Workshop on "Application of Biosensor Technology in Inland Fisheries".	ICAR-CIFRI, Barrackpore	01 August, 2018	ICAR-CIFRI, Barrackpore, West Bengal
K. K. Krishnani	Meeting on"GIS and Remote Sensing for Mapping Water Bodies in Different States of India"	ICAR-CIFRI, Barrackpore	02 August, 2018	ICAR-CIFRI, Barrackpore, West Bengal
Sunil Kumar Nayak	Madhya Pradesh Main Matsya Beej Ke dar tay kar ne keliye	Bhadbhada, Bhopal	10 August, 2018	Department of Fisheries, Govt. of Madhya Pradesh
Vidya Shree Bharti	International Conference on "Agriculture and Allied Sciences: The Productivity, Food Security and Ecology"	BCKV, Mohanpur, Nadia, West Bengal	13-14 August, 2018	Department of Agricultural Extension, BCKV, Mohanpur
G. H. Pailan	Meeting on Doubling of Farmers Income	BCKV, Kalyani	18 August, 2018	BCKV, Mohanpur, West Bengal
K. K. Krishnani	Brainstorming Session on "Promotion of Livestock, Dairy, Poultry and Fishery as Engines of Growth"	Pune, Maharashtra	02 September, 2018	Commissionerate of Animal Husbandry, Pune, Maharashtra
Neelam Saharan	Orientation Program for Retiring Officials	JNU, New Delhi	10- 11 September, 2018	Institute of Secretariat Training and Management, New Delhi
Latha Shenoy	OTP for retiring government officials	ISTM, Delhi	10-11 September, 2018	ISTM, Delhi
Faculty of CIFE, Mumbai and its Regional Centres	Hindi Pakhwada 2018	ICAR-CIFE, Mumbai	14 September, 2019	ICAR-CIFE, Mumbai
Faculty of CIFE, Mumbai	NAHEP Launch Workshop	ICAR-CIFE, Mumbai	15 September, 2018	Education Division, ICAR and ICAR-CIFE, Mumbai
G. H. Pailan	Workshop on 'Soil & Land Use Policy'	ICAR-NBSS & LUP, Regional Centre, Kolkata	18 September, 2018	ICAR-NBSS & LUP, Regional Centre, Kolkata
Madhuri S. Pathak	National Conference on "Recent Trends and Advances in Fresh Water Diversity"	Science College Nanded, Maharashtra	25 September, 2018	Department of Fishery Science, N.E.S. Science College, Nanded, Maharashtra
Faculty of CIFE, Mumbai	Workshop on 'Hindi Unicode Karyshala'	ICAR-CIFE, Mumbai	26 September, 2018	ICAR-CIFE, Mumbai

S. N. Ojha, Arpita Sharma, Shivaji Argade, S. K. Sharma, Deepak Khogre, Sanjeevan Kumar	Rastriya Mahila Kisan Diwas	Versova Fishing Village, Mumbai	15 October, 2018	ICAR-CIFE, Mumbai
V. Harikrishna, Satya Prakash	Agri-Startup and Entrepreneurship Conclave	NASC New Delhi	16-17 October, 2018	ICAR, New Delhi
Vidya Shree Bharti	Research Frontiers in Precision Agriculture, 2018	CSRE, Indian Institute of Technology, Mumbai	24-26 October, 2018	Indian Society of Agricultural Information Technology and University of Agricultural Sciences, Dharwad, Karnataka
Megha K. Bedekar	Annual Review Meeting of ICAR-CRP on Vaccines & Diagnostics	ICAR-CIBA, Chennai	30-31 October, 2018	ICAR-CIBA, Chennai
B. B. Nayak	South Indian Fisheries Minister's Conference	ICAR-CMFRI, Kochi, Kerala	10-11 November, 2018	ICAR-CMFRI, Kochi, Kerala
B. K. Mahapatra	Meeting of Assessment Committee for CAS	ICAR-CIFRI, Barrackpore	15-17 November, 2018	ICAR-Central Inland Fisheries Research Institute, Barrackpore
G. H. Pailan	Meeting with the Hon'ble Minister of Agriculture and Farmers' Welfare, Govt. of India	NBSS, & LUP, Kolkata	16 November, 2018	ICAR-NBSS & LUP, Regional Centre, Kolkata
Faculty of CIFE, Mumbai	POSH workshop on "Discrimination and Harassment at Workplace"	ICAR-CIFE Mumbai	17 November, 2018	NAHEP-CIFE and ICAR-CIFE, Mumbai
A.K. Verma	5th National Conference on "River Basins Sustainability: Water Scarcity Agricultural Production, Climate Change and Natural Disasters	Allahabad	17-18 November 2018	Sam Higginbottom University of Agriculture, Technology and Sciences, Allahabad & River Water User Association (India), Allahabad
Faculty of CIFE, Mumbai	Awareness About the Use of Turnitin Software	CIFE, Mumbai	19 November, 2018	ICAR-CIFE, Mumbai
Sanath Kumar H.	International Conference on "Microbiome Research (ICMR)"	Pune University, Pune, Maharashtra	19-22 November, 2018	ICMR, Pune, Maharashtra
Parimal Sardar	XI Biennial Conference of Animal Nutrition Association (ANACON 18) on "Reorienting Animal Nutrition Research in the Perspective of Farmers Welfare"	Bihar Animal Science University, Patna	19-21 November, 2018	Bihar Animal Science University, Patna and Animal Nutrition Association, Izatnagar, Uttar Pradesh

G. H. Pailan	Farmer's Day Celebration	ICAR-CSSRI, Regional Research Station, Canning Town	20 November, 2018	ICAR-Central Soil Salinity Research Institute, Regional Research Station, Canning Town
G. H. Pailan	Chaired a Session for International Symposium & VIII-IMSACON Kolkata	WBUAFS, Chakgaria,	22 November, 2018	WBUAFS, Chakgaria, Kolkata
S. N. Ojha, Arpita Sharma, Swadesh Prakash, P. S. Ananthan	23rd Extension Council Meeting	ICAR-CIFE, Mumbai	30 November, 2018	ICAR-CIFE, Mumbai
G. H. Pailan Sujata Sahoo	ISEE National Seminar on "Integrated Farming System for Enhancing Farmers' Income and Nutritional Security"	WBUAFS Chakgaria, Kolkata	05-07 December, 2018	WBUAFS, Chakgaria, Kolkata
HoDs and Scientists from centre and headquarter	Sensitization Workshop, Farmers Meet & Industry Meet on Inland Saline Aquaculture	ICAR-CIFE, Rohtak Centre	08 December, 2018	NAHEP-CIFE, Mumbai
Manjusha L.	59th Annual Conference of Association of Microbiologists of India (AMI)	University of Hyderabad, Hyderabad	09-12 December, 2018	Association of Microbiologists of India (AMI) & University of Hyderabad
Sikendra Kumar	Aqua-Poultry-Dairy Expo 2018	ICAR-NBFGR, Lucknow, UP	11-13 December, 2018	Centre for Agriculture and Rural Development
Aparna Chaudhari Mujahid K. Pathan	First National Genetics Congress	ICAR-IARI, New Delhi	14-16 December, 2018	ICAR-IARI, New Delhi
Ashutosh D. Deo	The Next Version of ICAR-ERPCR-I	IASRI New Delhi	18 December, 2018	ICAR-IASRI, New Delhi
G. H. Pailan	Silver Jubilee Foundation Day of WBUAFS, Kolkata	WBUAFS Kolkata	02 January, 2019	WBUAFS, Kolkata
G. H. Pailan	Foundation day of ICAR-NINFET, Kolkata	ICAR-NIRJAFT Kolkata	03 January, 2019	ICAR-NINFET, Kolkata
G. H. Pailan B. K. Mahapatra	Bengal Fish Fest-2019	ICAR-CIFE, Kolkata Centre	12 January, 2019	Department of Fisheries, Govt. of West Bengal and Indian Chamber of Commerce
Rajendran K. V., B. B. Nayak, Mukunda Goswami	31st All India Congress of Zoology (31st AICZ) and National Seminar on "Climate Smart Aquaculture and Fisheries (CSAF)"	CAU-College of Fisheries, Lembucherra, Agartala, Tripura	15-16 January, 2019	Central Agricultural University, Imphal
Gireesh Babu, Annam Pavan Kumar, Pankaj Kumar, Sikendra Kumar, Arun Sharma T. I. Chanu	International Workshop on "Aquaculture on Genomic Selection"	ICAR-CIFE, Mumbai	16-18, January, 2019	ICAR-CIFE, Mumbai

Aparna Chaudhari, Parimal Sardar, A. K. Balange, Babitha Rani, Tincy Varghese, Shamna N, Neha W. Qureshi, Madhuri S. Pathak	International Conference on "Challenges and Opportunities for Sustainable Fisheries and Aquaculture Development (COSFAD 2019)"	College of Fisheries, Ratnagiri Maharashtra	17-20 January, 2019	College of Fisheries, Ratnagiri and Interdisciplinary Society for Advancement of Agricultural Sciences and Technology (ISASaT)
S. N. Ojha, Arpita Sharma, Shivaji Argade, Neha W. Qureshi, S. K. Sharma, Deepak Khogre, Sanjeevan Kumar	Sea Food Festival	Versova Fishing Village	18-20 January 2019	Versova Koli Machhimar Society, Mumbai
R. P. Raman, P. B. Sawant, Ashutosh D. Deo	World Brackishwater Aquaculture Conference BRAQCON, 2019	ICAR-CIBA, Chennai	23-25 January, 2019	Society of Coastal Aquaculture and Fisheries (SCAFI) and ICAR-CIBA, Chennai
Rajendran K. V.	Workshop on "Need for Uniform Policy on Fish Disease Diagnosis and Quarantine"	NASC Complex, New Delhi	29 January, 2019	National Academy of Agricultural Sciences (NAAS)
G. H. Pailan Sujata Sahoo	19th Indian Veterinary Congress, XXVI Annual Conference of IAAVR and National Symposium on "Innovative Progress in Animal Health and Production for Safe and Secured Food Under One Health Perspective"	WBUAFS, Kolkata	01 February, 2019	WBUAFS, Chakgaria, Kolkata
A. K. Balange	MAHA-AGRO 2019	Aurangabad	02 February, 2019	MACCIA & Govt. of Maharashtra
B. B. Nayak	Meeting on "Road Map for Utilization of Bio Resources Towards Bio-economy"	INSA, New Delhi	04-05 February, 2019	INSA, New Delhi
Rajendran K. V.	3rd Annual Meeting and Progress Review of Indo-UK, DBT-BBSRC-funded Project	Bangladesh Agricultural University, Mymensingh, Bangladesh	07-09 February, 2019	Bangladesh Agricultural University, Mymensingh, Bangladesh
Gireesh Babu	Expert Consultation on "Planning for Shaping Departments of the College of Fisheries"	College of Fisheries, Kishanganj	07-09 February, 2019	College of Fisheries Bihar Kishanganj, Bihar
Pankaj Kumar, Sreedharan K., Satya Prakash	ICAR-CSSRI Golden Jubilee International Salinity Conference on "Resilient Agriculture in Saline Environments under Changing Climate: Challenges & Opportunities"	ICAR-CSSRI, Karnal, Haryana	07-09 February, 2019	ICAR-CSSRI Karnal, and Indian Society of Soil Salinity and Water Quality, Karnal, Haryana

S. Munilkumar	Agri Summit 2019	Motihari, Bihar	09-11 February, 2019	ICAR-RCER, Patna/ Mahatma Gandhi Integrated Farming Research Institute, Motihari, Bihar
Muralidhar P. Ande	Board of Studies Meeting	Ideal College of Arts and Science, Kakinada, Andhra Pradesh	12 February, 2019	Ideal College of Arts and Science, Kakinada, Andhra Pradesh
S. Dasgupta	Expert Committee meeting on 'Hilsa Phase II'	NASC New Delhi	14 February, 2019	NASC Complex, New Delhi
Pankaj Kumar, Sreedharan K. Ashok Kumar	4th Agriculture Leadership Summit-2019	Ganaur, Sonepat, Haryana	15-17 February, 2019	Department of Fisheries, Haryana
Faculty of CIFE, Mumbai	Syllabus Revision and Academic Reformation in Higher Fisheries Education	ICAR-CIFE, Mumbai	18-19 February, 2019	ICAR-CIFE, Mumbai and BSMA (Fisheries Science), ICAR
Karankumar K. Ramteke	Workshop on "Developing Effective Strategies for Managing Marine Ecosystems in a Changing Climate"	Columbia University's Global Centre, Mumbai	20-21 February, 2019	CSRE, IIT Bombay and Columbia University, USA
K. K. Krishnani, Satyendar Singh, Gyan Chand	The XIV Agricultural Science Congress	NASC, New Delhi	20-23 February,	National Academy of Agricultural Sciences in collaboration with ICAR
Rajendran K.V.	National Seminar on 'Recent Trends in Parasitology'	Research Department of Zoology, Kannur University, Kerala	22-23 February, 2019	Kannur University, Kerala
Rajendran K. V.	Aqua Clinics & Aquapreneurship Development Programme (AC&ADP)	Cochin University of Science and Technology, Kochi	25 February, 2019	National Centre for Aquatic Animal Health, Cochin University of Science and Technology, Kochi, Kerala
ICAR-CIFE staff	National Symposium in Hindi on "Rashtriya Vaigyanik Rajvasa Parisambad"	ICAR-CIFE, Mumbai	25-26 February, 2019	ICAR-CIFE, Mumbai
Faculty of CIFE, Mumbai	Academia-Industry Interface Meet	ICAR-CIFE, Mumbai	28 February, 2019	ICAR-CIFE Mumbai ICAR-NAHEP
Karankumar K. Ramteke	Interaction with tribal fishermen community for livelihood improvement through interventions in fisheries (Under TSP Scheme)	Nandurbar	06 March, 2019	FRHPHM division of ICAR-CIFE
S. N. Ojha, Arpita Sharma	Sea Food Festival	Versova Welfare	08-10 March, 2019	Versova Koli Mahila Samajik Sanstha, Mum4

G. H. Pailan	Scientific Advisory Committee (SAC) meeting of the Ramakrishna Ashram Krishi Vigyan Kendra, Nimpith	Ramakrishna Ashram Krishi Vigyan Kendra Nimpith, West Bengal	11 March, 2019	Ramakrishna Ashram Krishi Vigyan Kendra, Nimpith, West Bengal
Staff of CIFE Kakinada Centre S. N. Ojha, Parimal Sardar	Academia-Industry Interface Meet	Hotel Royal Grand, Kakinada, Andhra Pradesh	15 March, 2019	ICAR CIFE Mumbai and CIFE-NAHEP
K. V. Rajendran S. N. Ojha, Parimal Sardar, G. H. Pailan, B. K. Mahapatra, All staff of CIFE Kakinada Centre	National workshop on 'Genetic Improvement Present Status and Future	FWFF, Balabhadrapuram, Andhra Pradesh	16 March, 2019	ICAR CIFE Mumbai and CIFE- NAHEP
Mukunda Goswami	105th Indian Science Congress	Manipur University, Manipur	16 -20 March, 2019	Indian Science Congress
Faculty of CIFE, Mumbai	3rd Student Convention on "Next Generation Aquaculture: Panacea to Employment challenges"	ICAR-CIFE Mumbai	25-26 March, 2019	ICAR-CIFE, Mumbai with CIFE-NAHEP
G. H. Pailan	HACCP & Export Certification of Fish and Fishery Products	Hotel Regenta Orko's Kolkata	29 March, 2019	Export Inspection Agency, Kolkata

Visits Abroad (2018-19)

Name of the Faculty	Programme/ purpose of visit	Organized by	Funded by	Place	Date
Arpita Sharma	Fifth International Fishing Industry Safety & Health (IFISH)	Conference Memorial University, Canada and Agriculture Organization of the United Nations	Memorial Food and Agriculture Organization Nations	St. John's, Newfoundland, Labrador, Canada	10-13 June, 2018
N. P. Sahu	International Seminar on "Rice Bran as Animal Feed"Bangladesh Agriculture University, Bangladesh	Bangladesh Agriculture University, Bangladesh	Mymensingh, Bangladesh	Bangladesh Agriculture University	05-06 July, 2018
Arpita Sharma	Biennial Conference of the International Institute of Fisheries Economics and Trade (IIFET), Adapting to a Changing World: Challenges and	IIFET and University United States of America Oregon State University, United States of America	University of Washington, Seattle	United States of America	16-20 July, 2018
Arpita Sharma and P. S. Ananthan	Global Conference on Gender in Aquaculture and Fisheries-GAF Gender in Aquaculture and Fisheries, Bangkok, Thailand	7GAF and Asian Institute of Technology, Bangkok, Thailand	Asian Institute of Technology, Bangkok, Thailand	Asian Institute of Technology, Bangkok, Thailand	18-20 October, 2018
K. Pani Prasad	Keynote Speaker during International Conference on Aquatic Resources and Aquaculture	World Aquaculture Society & Hawassa University	Hawassa University, Ethiopia	Hawassa, Ethiopia	10-12 January, 2019
K. Pani Prasad	Thesis evaluation Vels University, Chennai & University Putra Malaysia	University Putra Malaysia	Malaysia	University Putra Malasia	02 February, 2019
Rajendran K.V.	3rd Annual Meeting and Progress Review of Indo-UK, DBT-BBSRC-funded Project	Bangladesh Agricultural University, Mymensingh, Bangladesh	Department of Biotechnology Govt. of India	Bangladesh Agricultural University, Mymensingh, Bangladesh	07-09 February, 2019
Paramita B. Sawant and Babitha Rani A.M.	Short International Exposure Visit Asian Institute of Technology, Thailand	Asian Institute of Technology, Thailand	ICAR-NAHEP	Asian Institute of Technology, Thailand	18-22 March, 2019

Year April 2019-December 2019

Participation by Dr Gopal Krishna, Director, ICAR-CIFE

S. N.	Meetings	Venue	Date	Organized by
1.	Consultation meetings on "Aquaculture Biotechnology"	CIBA, Chennai	5-6 April, 2019	Department of Biotechnology, GoI, New Delhi
2	Meeting on various institutional matters	ICAR, New Delhi	15 April, 2019	DG, ICAR, New Delhi
3	Meeting with NABARD Chair Professor at Southern Regional Station, ICAR-NDRI, Adugodi, Bangalore	SRS, ICAR-NDRI, Adugodi, Bangalore	11 April, 2019	ICAR-CIFE, Mumbai
4	Meeting of Broad Subject Matter Area as a Special Invitee	KAB II, Pusa, New Delhi	13-14 May, 2019	DDG, (Education), KAB II, Pusa, ICAR, New Delhi
5	Meeting regarding Postdoctoral Fellow in ICAR System	ICAR, New Delhi	16-17 May, 2019	DDG (Education), KAB II, Pusa, ICAR, New Delhi chaired by DG, ICAR
6	Meeting of EFC	ICAR, New Delhi	22-23 May, 2019	DDG (FS), KAB II, Pusa, ICAR, New Delhi
7	Meeting with Director	NBFGR, Lucknow	24 May, 2019	Director, ICAR-NBFGR, Lucknow
8	Meeting with DDG (FS)/ Director NBFGR, Lucknow to revise EFC of the Institute	KAB II, New Delhi	27-29 May, 2019	DDG (FS) ICAR, New Delhi
9	The Asian Pacific Aquaculture (APA'19) as National Chair of HRD Session	TNJFU, Chennai	18-22 June, 2019	World Aquaculture Society and TNJFU, Chennai
10	As a National Chair in a session of HRD in Fisheries	TNJFU, Chennai	18-22 June, 2019	Director, ICAR-CIFE Under NAHEP during APA '19 by World Aquaculture Society and TNJFU, Chennai

11	Interaction meeting of Hon'ble Union Minister of Fisheries, Animal Husbandry and Dairying Sh. Giri Raj Singh with the senior Officers and scientists of ICAR and Officers of Department of Fisheries	Krishi Bhavan, ICAR, New Delhi	25-26 June, 2019	DG, ICAR, New Delhi
13	Discussion meeting with senior officials (SMD & DG)	Krishi Bhavan, ICAR, New Delhi	30 June to 2 July, 2019	DDG (Fy.), ICAR, New Delhi
14	Discussion with Director (Fisheries) Assam and Vice-Chancellor Assam Agricultural University regarding education program in North-East Region	Guwahati	3-6 July, 2019	Director (Fisheries) Assam
15	Foundation Day Programme of ICAR	NASC Auditorium, New Delhi	13-18 July, 2019	ICAR, New Delhi
16	DDG (F.S.) & Directors of Fisheries and Animal Science Institute	KAB II, New Delhi	13-18 July, 2019	DDG (FS), ICAR, New Delhi
17	Participated and chaired a session in a Conference on "Application of Drone, Robotics and IoT in agriculture"	Sheraton Hotel, Pune	23-25 July, 2019	Maharashtra Phule Krishi Vidyapeeth, Rahuri under NAHEP
18	Delivered a key note address in a Conference on "Application of Drone, Robotics and IoT in agriculture"	Sheraton Hotel, Pune	24 July, 2019	Maharashtra Phule Krishi Vidyapeeth, Rahuri under NAHEP
19	Conference on Academic Leadership on "National Education Policy 2019" chaired by Dr. Ramesh Pokhriyal Nishank, HRD minister	AICTE, New Delhi	27 July, 2019	Bhartiya Shikshan Mandal, Hosted by AICTE, New Delhi
20	Annual Reviewed meeting of NAHEP, Chaired by DG, ICAR and Shri Kailash Choudhary, Minister of State for Agriculture and Farmers' Welfare	A P Shinde Auditorium, NASC Complex, New Delhi	4-6 August, 2019	DDG, Education & National Director NAHEP, New Delhi

21	Executive Development Program on "Developing Effective Organizational Leadership for Senior Officers of ICAR"	ASCI, Hyderabad and ICAR-NAARM, Hyderabad	8-11 August, 2019	ASCI and ICAR-National Academy of Agriculture Research Management, Hyderabad
22	Meeting with Director General, ICAR and Deputy Director General (FS.) for institutes Development	ICAR, New Delhi	22-23 August, 2019	ICAR, New Delhi
23	Central Joint Staff Council meeting	ICAR, New Delhi	4 September, 2019	DG, ICAR, New Delhi
24	Meeting with DG ICAR & DDG (FS)	ICAR, New Delhi	5 September, 2019	DDG, ICAR, New Delhi
25	Conference on "Inland Fisheries Policy", chaired a session and delivered key note address	Seva Kendra Calcutta, Kolkata, West Bengal, India	6-7 September, 2019	ICSF, Chennai
26	Vice-Chancellor Conference	HAU Hissar	19-20 September, 2019	IAUA, New Delhi in collaboration with HAU Hissar
27	Workshop on "Ornamental Fisheries " and delivered invited talk	S. K. Mahila College, Begusarai, Bihar	20 September, 2019	S. K. Mahila College, Begusarai, Bihar
29	Awareness Program on "Fisheries Management in Guwahati"	In collaboration with Directorate of Extension, College of Veterinary Science and Animal Husbandry, Khanapara, Guwahati	26-27 September 2019	Director, ICAR-CIFE Mumbai
30	National Workshop on "Inland Saline Aquaculture: Environmental Challenges and Eco-friendly Technologies /Practices "	ICAR-CIFE, Rohtak Centre, Haryana	5-6 October, 2019	Director, ICAR-CIFE Under NAHEP
31	Meeting with DDG Education and ND NAHEP, New Delhi	KAB II, New Delhi	10 October, 2019	ND, NAHEP, ICAR, New Delhi
32	International Component of Executive Development Programme	Netherlands, Germany, Belgium and Switzerland	12-21 October, 2019	ASCI and ICAR-NAARM, Hyderabad
33	Review Meeting of NAHEP	KAB II, Pusa New Delhi	11 November, 2019	ND, NAHEP ICAR, New Delhi
34	Visit to CIBA and discussion with scientists	CIBA, Chennai	12 November, 2019	ICAR-CIBA, Chennai
35	Review meeting of NAHEP and Presentation of report of International Travel under Executive Development Programme	Krishi Bhavan, New Delhi	17-19 December, 2019	DG, ICAR, New Delhi

Participation by Faculty of ICAR-CIFE

Name of the faculty	Name of the Programme	Venue and Organizer	Date
Dr. Aparna Chaudhari	Brainstorming Session on "Fish Genomics"	ICAR-CIBA, Chennai DBT, Govt. of India	5 April, 2019
Dr. Mujahidkhan A. P.	CPCSEA Meeting of the sub-Committee for framing the guidelines for Fish/Zebrafish	MoEF & CC, New Delhi	12 April, 2019
Dr. S. Munilkumar	Technical expert committee on animal, aquaculture and fisheries biotechnology for NER	DBT, New Delhi	16-17 April, 2019
Dr. N. P. Sahu	Meeting of BSMA committee for revision of syllabus of masters and Ph.D. in agriculture science	NAAS Complex, ICAR, New Delhi	23-24 April, 2019
Dr. B. K. Mahapatra, Dr. Paramita Banerjee Sawant	Ornamental fish in state level farmers conclave	State Convention Centre, Shillong, Meghalaya Dept. of Fisheries Meghalaya	25-26 April, 2019
Dr. Sunil Kumar Nayak	Farmers' Meet	Village-Bande, Tehsil-Pakhanjur, Dist- North Bastar Kanker, Chhattisgarh	29 April, 2019
Dr. G. H. Pailan	Brainstorming session on "Social implications and fisheries on Ganga River basin with special reference to Hilsa"	ICAR-CIFRI, Barrackpore	2 May, 2019
Dr. S. Jahageerdar	BSMA meeting as expert for the fish genetics and breeding discipline at advanced research farm facility	Dr. J. Jayalalithaa Fisheries University, Madhavaram Milk Colony, Madhavaram, Chennai	6 May, 2019
Dr. Vidya Shree Bharti	Workshop on "Environment management framework and social management plan for the NAHEP"	NASC Complex, New Delhi	6 May, 2019
Dr. Paramita Banerjee Sawant	Workshop on "Environment management framework and social management framework for NAHEP"	NAAS Complex, New Delhi	6 May, 2019
Dr. Rajendran K. V.	Project presentation meeting before the expert committee of NASF	NASC, New Delhi National Agricultural Science Fund (NASF)	10 May, 2019

Dr. Gayatri Tripathi	Women Empowerment in Science & Technology	Institute of Chemical Technology, Matunga, Mumbai National Academy of Sciences, India (NASI)	13 May, 2019
Dr. S. Jahageerdar	BSMA meeting as Expert for the Fish Genetics and Breeding Discipline	ICAR, New Delhi Education Division ICAR, New Delhi	14 May, 2019
Dr. N.P. Sahu	Meeting of BSMA	KAB-II, PUSA, New Delhi	13-14 May, 2019
Dr. Sanath Kumar H.	Partnership building workshop for Collaborative Research Proposals Focusing on Antimicrobial Resistance (AMR) in the environment	DBT, New Delhi Government of India with UK Research and Innovation (UKRI)	15-16 May, 2019
Dr. K. Pani Prasad	EFC (2019-20) meeting with Director CIFE and Director, NBFGR	NBFGR, Lucknow	23-24 May, 2019
Dr. N. P. Sahu	Scoping Workshop for Entrepreneurship Development	College of Fisheries, Kishanganj (CoF), BASU, Bihar	23-24 May, 2019
Dr. S. Munilkumar	Entrepreneurship Development in Aquaculture	College of Fisheries, Kishanganj (CoF), BASU, Bihar	23-24 May, 2019
Dr. S. Jahageerdar	48th Institute Management Committee Meeting	ICAR-Central Inland Fisheries Research Institute, Barrackpore	28 May, 2019
Dr. K. Pani Prasad	EFC meeting of CIFE and NBFGR	KAB II, New Delhi ICAR	26-30 May, 2019
Dr. G. H. Pailan	Midterm Review Meeting of RCM-II	ICAR-CIFRI, Barrackpore	12 June, 2019
Faculty of CIFE and its centres	Asian Pacific Aquaculture -2019, Chennai	Chennai Trade Center, Tamil Nadu, World Aquaculture Society and TNJFU	19–21 June, 2019
Dr. K. Pani Prasad	Preliminary Meeting for Preparation of EFC Proposal for the Network Project on Fish Health for 2020-2025	ICAR-CIBA, Chennai	29 June, 2019
Dr. K. V. Rajendran	Third Coordination Committee Meeting of the DBT-Funded Project	ICAR-CIFA, Bhubaneswar	3 July, 2019
Dr. G. H. Pailan	Scrutinizing Committee Meeting for Finalizing the Applicants for the Establishment of the Aqua One Centre (AOC)	MANAGE, Hyderabad	5 July, 2019

Dr. Muralidhar P. Ande	Meeting with State Government Officials, Progressive farmers	Collectorate Office, Kakinada, East Godavari	5 July, 2019
Dr. Muralidhar P. Ande	Workshop on "Marine Fishery Resources of Andhra Pradesh and Diversified Fishing Methods"	SIFT, Kakinada FSI, Visakhapatnam	10 July, 2019
Dr. K. V. Rajendran	Expert Committee Meeting for Drafting Fisheries Disease Control and Health Management Bill 2019	Krishi Bhavan, New Delhi Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India	15 July, 2019
Dr. A. K. Balange	National Conference on "Fisheries and Climate: Strategies, Challenges and Sustainable Management"	SKUAST, Kashmir Faculty of Fisheries and Ministry of Earth Sciences, Govt. of India	18-19 July, 2019
Dr. Muralidhar P. A.	Board of Studies Meeting	Ideal College of Arts and Sciences, Kakinada	20 July, 2019
Dr. K. V. Rajendran	Expert Committee Meeting for Drafting Fisheries Disease Control and Health Management Bill 2019	Krishi Bhavan, New Delhi Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt. of India	25 July, 2019
Dr. P. A. Muralidhar Mr. R. R. S. Patnaik Mr. B. Laxmana Rao Mr. K. Suresh	National Conference on "Efficient Value Chain in Fisheries & Aquaculture, Driving Growth of Fisheries in India"	Hotel Fortune Murali Park, Vijayawada, SMART AGRIPOST, New Delhi	27 July, 2019
Dr. B. B. Nayak	Thirteenth Meeting of the Fish, Fisheries and Aquaculture Sectional Committee	BIS, Manak Bhavan Bureau of Indian Standard, New Delhi	1 August, 2019
Dr. K. V. Rajendran	Annual Review Meeting of the NAHEP, CAAST Component	NASC, New Delhi National Agricultural Higher Education Project (NAHEP)	6 August, 2019
Dr. N. K. Chadha Dr. Kiran Dube Rawat	25th ICAR-Regional Committee Meeting No. VII	ICAR- NBSSLUP, Nagpur	9-10 August, 2019
Dr. P. S. Ananthan	National Workshop on FAO-SSF Guidelines and Gender Mainstreaming into Fisheries Policies and Legislation	International Collective in Support of Fish workers, Chennai	18-20 August, 2019
Dr. K. V. Rajendran	Expert Committee Meeting for Drafting Fisheries Disease Control and Health Management bill 2019	Krishi Bhavan, Dept. of Fisheries, Ministry of Fisheries, Animal Husbandry & Dairying, Govt of India New Delhi	22 August, 2019

Dr. S. Munilkumar	6th International Conference on Fisheries & Aquaculture, 2019	Bangkok, Thailand	22-23 August, 2019
Dr. G. H. Pailan	Inauguration of Winter School on Recent Biotechnological Advances for Precision Feeding of Livestock and Poultry	West Bengal University of Animal & Fishery Sciences, Animal Nutrition Department, Belgachia, Kolkata WBUAFS, Animal Nutrition Department, Belgachia, Kolkata	4 September, 2019
Dr. Ananthan P.S.	National Workshop on "Draft national policy on inland fisheries and aquaculture and the SSF guidelines"	Seva Kendra Calcutta, Kolkata International Collective in Support of Fish workers, Chennai	6-7 September, 2019
Dr. K. K. Krishnani	International Conference on "Nutraceuticals, herbals supplements and nano formulations"	Mahatma Gandhi University Kottayam, Kerala	13-15 September, 2019
Dr. Rama Sharma	NAHEP Component-2A Workshop on "Investments in ICAR leadership in agricultural higher education"	ICAR-IASRI, NASC Complex, Pusa, New Dehli	18-19 September, 2019
Dr. Kiran Dube Rawat	Hindi Shabdawali for cotton research	CIRCOT, Mumbai	17-19 September, 2019
Dr. K. Pani Prasad	Second Annual Review Meeting of INFAAR	Kolkata FAO & ICAR, New Delhi	19 September, 2019
Dr. Sanath Kumar H	13th National Symposium Ranking of Agricultural Universities in India	Haryana Agriculture University, Hisar ICAR	19-20 September, 2019
Dr. Megha K. Bedekar	8th Indian Chitin and Chitosan Society Symposium	Institute of Chemical Technology, Mumbai	19-20 September, 2019
Dr. N. P. Sahu	Meeting of BSMA	Chennai, Tamil Nadu	20-21 September, 2019
Dr. H. Sanath Kumar	ASEAN-India training workshop on emerging technologies for young biotech professionals from ASEAN MS	CSIR-Institute of Genomics and Integrative Biology, New Delhi Association of South-East Asian Nations (ASEAN)	20-28 September, 2019
Dr. Asha T. Landge	Awareness cum training programme on "Fish Culture"	Rajshri Shahu Maharaj Ashramshala, Adoshi, Khodala, Mokhada, Maharashtra	28 September, 2019
Dr. Sunil Kumar Nayak	National Workshop on "Aquatic Animal Diseases"	College of Fisheries, Kamdhenu Viswavidyalaya, Kawardha, Chhattisgarh	30 September, 2019

Dr. Kundan Kumar	National Workshop on "Aquatic Animal Diseases"	College of Fisheries Kamdhenu Vishwavidayalaya Kawardha, Chhattisgarh	30 September, 2019
Dr. N. P. Sahu	Meeting to Conduct the Post-graduate Entrance Exam through NTA	New Delhi	10-11 October, 2019
Dr. K. Pani Prasad	2nd International Conference on "FoodSafety and Health"	Abu Dhabi, UAE	17-18 October, 2019
Dr. P. A. Muralidhar	Board of Studies Meeting of B. Voc Course on Industrial Aquaculture and Fisheries	Ideal College of Arts and Sciences, Kakinada Ideal College of Arts and Sciences, Kakinada	23 October, 2019
Dr. B. B. Nayak	18th Meeting of Scientific panel on Fish and Fisheries Products	FSSAI, FDA Bhawan, Kotla Road, New Delhi Food Safety and Standards Authority of India	1 November, 2019
Mr. Satya Prakash	National Conference on "Policy Reforms to Assess Skills for Agrarian Prosperity"	India Habitat Centre, New Delhi ICCo Group of Enterprise and Shobhit University	7 November, 2019
Dr. K. V. Rajendran	Korean Federation of Fisheries Science and Technology Societies International Conference 2019 (KOFFST 2019), BEXCO, Busan, Republic of Korea	BEXCO, Busan, Republic of Korea Korean Federation of Fisheries Science and Technology Societies	7-8 November, 2019
Dr. K. Pani Prasad, Dr. H. Sanath Kumar Dr. Jeena K.	National Seminar on "AMR in Indian Fisheries: Measures of Mitigation"	Central Institute of Fisheries Technology, Kochi SOFTI, ICAR-CIFT and MPEDA	7-8 November, 2019
Dr. N. P. Sahu	Meeting of Selection Committee for Screening of Netaji Subhash International Fellowship Applications	ICAR, New Delhi	11-13 November, 2019
Dr. Muralidhar P. A. Mr. R. R. S. Patnaik	SUSTAIN FISH-2019	Hotel Sarovar Portico, Kakinada ICAR-CIFT, Visakhapatnam & EGREE Foundation, East Godavari District, A.P.	13 November, 2019
Dr K. K. Krishnani	56th Annual Convention of Chemists and International Conference of Recent Advances in Chemical Sciences	Pandit Ravishankar Shukla University, Raipur Indian Chemical Society and Ravishankar University Raipur	14-16 November, 2019

Scientists of CIFE	Fourth PAF Congress on "Increasing Aquaculture Production in India through Synergistic Approach between Multinational Industries, Domestic Entrepreneurs and Aquaculturists"	ICAR-CIFA, Bhubaneswar, Pillay Aquaculture Foundation and Association of Aquaculturists, Bhubaneswar, Odisha	15-17 November, 2019
Dr. B. B. Nayak	Meeting with Dr. Srivastava, Director, ICAR-CIWA regarding collaboration	ICAR-CIWA, Kausalyaganaga, Bhubaneswar, Odisha	15-17 November, 2019
Dr. H. Sanath Kumar	60th Annual Conference of Association of Microbiologists of India (AMI-2019) & International Symposium on Microbial Technologies in Sustainable Development of Energy, Environment, Agriculture and Health	Central University of Haryana (CUH), Mahendragarh Association of Microbiologists of India (AMI)	15-18 November, 2019
Mr. Satya Prakash	World Fisheries Day	NASC, New Delhi NFDB and DAHD Govt. of India	21 November, 2019
Dr. N. P. Sahu	47th Meeting of Academic Council	ICAR-NDRI- Karnal	22-23 November, 2019
Dr. G. H. Pailan	ICAR Regional Committee-III	Assam Administrative Staff College, Assam ICAR NEH Barapani	23-24 November, 2019
Dr K. K. Krishnani	XVI Convention of Biotech Research Society of India (BRSI) - International Conference on "New Horizons in Biotechnology"	CSIR-NIIST, Trivandrum BRSI and CSIR-NIIST	20-24 November, 2019
Dr. G. H. Pailan	Practitioners Conference on "Integrated Mangrove Aquaculture (IMA) for Multi-stakeholder Partnership to Strengthen Transformative Processes in Shrimp Trade as a basis for the Protection of Mangrove Ecosystems in South Asia"	Commune, 7B, Chowringhee Terrace, Kolkata Nature Environment & Wildlife Society (NEWS), Kolkata	26 November, 2019
Dr. Aparna Chaudhari	Workshop on "One health and Ecosystem Services"	ICAR-NBFGR, Lucknow The Academy of Environmental Biology and NBFGR, Lucknow	29-30 November, 2019
Dr. K. V. Rajendran Dr. Tincy Varghese	International conference on "Aquatic resources & blue economy-Aquabe 2019"	Kochi, Kerala Kerala University of Fisheries and Ocean Studies (KUFOS)	28-30 November, 2019

Dr. Sunil Kumar Nayak	Workshop on "Integrated Farming with Advanced Practice"	RSETI, Central Bank of India, Hoshangabad, Grameen Vikas Bibhag, Central Bank of India, Hoshangabad, Madhya Pradesh	05 December, 2019
Dr. B. K. Mahapatra	State Level Consultative Workshop on "The Refinement of Marine Fisheries Management in West Bengal"	ICAR-CIFE, Kolkata Centre, Salt Lake NETFISH-MPEDA, Ministry of Commerce & Industry, Govt. of India	6 December, 2019
Dr. Kiran Dube Rawat	Sardar Sarovar Project Meetings	Commissioner of Fisheries Office, Taraporewala Aquarium, Mumbai	04 June, 28 June, 26 July, 31 August, 26 September, 26 September, 10 December, 2019
Dr. Shivaji Argade	International Conference-cum-Exhibition on "Smart Aqua India-2019"	Digha, West Bengal SMART AGRIPOST and ICAR	13-15 December, 2019
Dr. N. P. Sahu	Interview for Candidates of Netaji Subhas-ICAR International Fellowship 2019-2020	ICAR, New Delhi	17 December, 2019
Dr. G. H. Pailan, Dr. B. K. Mahapatra, Dr. Sujata Sahoo Dr. D. K. Singh	International Conference on "Animal Nutrition-2019"	Biswa Bangla Convention Centre, Newtown, Kolkata West Bengal University of Animal and Fishery Sciences	17–19 December, 2019
Mrs. Upasana Sahoo	National Workshop on "Recent Advancements, Technologies and Entrepreneurship in Aquaculture"	Bilaspur, Himachal Pradesh Directorate of Fisheries, Himachal Pradesh.	18-19 December, 2019
Dr. G. H. Pailan	Assessment Committee Meeting for Considering the Assessment/Promotion of Scientists of ICAR-CIFRI, Barrackpore	ICAR-CIFRI, Barrackpore	16, 18 and 21 December, 2019
Dr. Martin Xavier	Stakeholders' Round Table Discussion on 'Plastic Pollution and Role of Stakeholders'	University of Mumbai, Fort Campus The Energy and Resources Institute (TERI), University of Mumbai and United Nations Environment Programme (UNEP)	23 December, 2019
Dr. N. P. Sahu	Assessment Committee Meeting for Fish Processing Technology Discipline	ASRB, ICAR, New Dehi	26-27 December, 2019

Visits abroad (March 2019-December 2019)

Name of Faculty	Place of visit and purpose	Date
Dr. Gopal Krishna, Director CIFE, Mumbai	International Universities and organization *viz.* Wageningen University, Royal Flora Holland, Aalsmeer, Dutch Ministry of Agriculture, Netherlands; University of Bonn, German Development Institute (DIE) and Development Research Institute Germany; the University of Ghent, European Commission on Common Agriculture Policy and Common Fisheries Policy, Belgium and the World Trade Organization, Geneva and Research Institute of Organic Agriculture, Frick, Switzerland under Executive Development Program specially designed for the senior officers of ICAR	12-21 October, 2019
Dr. Gopal Krishna, Director CIFE, Mumbai	International Symposium on Fisheries Sustainability: Strengthening the Science-Policy Nexus" held at FAO, Rome, Italy on 18–21 November, 2019. Also participated in the celebration of International World Fisheries Day organized by FAO, Rome.	21 November, 2019
Dr. Gayatri Tripathi**,** Principal Scientist .	Commonwealth Scientific and Industrial Research Organisation (CSIRO), Land and Water Laboratory, Waite Campus, Urrbrae, Australia. The purpose of the visit was to initiate collaboration between ICAR–CIFE, Mumbai and CSIRO, Australia and also to work on "The impact of micropollutants in freshwater test model animal species" at the Contaminant Biogeochemistry and Environmental Toxicology Lab, CSIRO, Adelaide, Australia. The visit was funded by ICAR-NAHEP	1-15 April, 2019
Dr. N. Shamna, Scientist	Training on "Lipid metabolism related gene expression, lipid composition of eggs and larvae of Gilthead seabream fed with high or low omega-3 PUFA diet" at the University of Las Palmas, Gran Canaria, Spain funded by ICAR-NAHEP	1 April to 15 May, 2019
Dr. N. P. Sahu, Head & Principal Scientist	Visiting Professor at the University of Idaho, Moscow, Idaho, USA The visit was funded by ICAR-NAHEP	11-26 July, 2019
Dr. S. Munilkumar Senior Scientist	6thInternational Conference on Fisheries and Aquaculture at Hotel Windsor Suites & Convention Bangkok, Thailand organized by International Institute of Knowledge Management, Sri Lanka	22-23 August 2019
Dr. Aparna Chaudhari, Head & Principal Scientist	13 Vaccine Congress at Bangkok, Thailand.The visit was funded by ICAR-CIFE, Mumbai	15-18 September, 2019
Dr. B. B. Nayak, Head & Principal Scientist	Norwegian University of Life Sciences, Norway under the Faculty improvement (ICAR-NAHEP Project funded)	30 September -15 October, 2019

Dr A. K. Balange**,** Senior Scientist	Training programme on "Studies on Quality and Functional Properties of shrimp" at Istanbul Technical University, (ITU), Istanbul, Turkey. The visit was funded by ICAR-NAHEP	15 October-15 November, 2019
Dr. K. V. Rajendran, Head & Principal Scientist	Korean Federation of Fisheries Science and Technology Societies International Conference 2019 (KOFFST 2019, BEXCO) Busan, Republic of Korea and Department of Aqualife Medicine, Chonnam National University, Yeosu, Republic of Korea funded by Korean Society of Fish Pathology, Republic of Korea on 8 November, 2019.	8-12 November, 2019
Dr. K. Pani Prasad**,** Prinicipal Scientist	International Symposium on "Sustainable Aquaculture: Strengthening the Science-Policy Nexus" at FAO, Rome, Italy	18-21 November, 2019

Year January 2020-December 2020

Participation in Workshop/Conferences/Symposia/ Important meetings /Farmers' meet including online workshops etc.

Name of the faculty	Name of the Programme attended	Venue	Organized by	Date
All scientist of ICAR-CIFE, Kolkata Centre	Bengal Fish Fest 2020	ICAR-CIFE, Kolkata Centre, Salt Lake	Department of Fisheries, Govt. of West Bengal and Indian Chamber of Commerce	10-12 Jan, 2020
B. K. Mahapatra	National Workshop on "Integrated Farming Systems"	Ramakrishna Mission Ashrama, Sargachi, Murshidabad	Dhaanyagang a KVK and Ramakrishna Mission Ashrama, Sargachi	10-13 Jan, 2020
B. K. Mahapatra	Krishi Samridhhi Mela 2020	Ramakrishna Mission Ashrama, Sargachi, Murshidabad	Dhaanyagang a KVK and Ramakrishna Mission Ashrama, Sargachi	10-13 Jan, 2020
Dr. Arpita Sharma	Invited speaker in the 3rd International Symposium on Genomics in Aquaculture (ISGA III) in Bhubaneswar, Odisha, India	ICAR-CIFA, Bhubaneswar	ICAR-Central Institute of Freshwater Aquaculture, Bhubaneswar in association with the Association of Aquaculturists	21-23 Jan, 2020
G. H. Pailan	Workshop on Ornamental Fisheries	Golden Tulip Hotel, Salt	NCDC, Kolkata	25 Jan, 2020

	Entrepreneurship Development	Lake, Kolkata		
B. K. Mahapatra	Ornamental Fisheries Entrepreneurship Development	Golden Tulip Hotel, Salt Lake City, Kolkata	NCDC, NFDB and Govt. of West Bengal	25 Jan, 2020
Megha Bedekar	Annual review meeting	ICAR-Central Tuber Crops Research Institute, Thiruvananthapuram	ICAR Consortia Platform for Vaccine and Diagnostics	29-30 Jan, 2020
G. H. Pailan	Workshop "Visioning and Engagement workshop: Initiating a partnership for healthy mangroves, thriving coastal communities and a robust aquaculture value chain in the Sundarbans: India, Bangladesh and Beyond during	Taj Bengal, Kolkata, West Bengal	Nature Environment & Wildlife Society (NEWS), Kolkata.	3-4 Feb, 2020
Dr. Arpita Sharma	Invited speaker in the International Conference on Impact of Climate Change in Hydrological Cycle, Ecosystem, Fisheries and Food Security, ClimFish Con, February 11-14, 2020	Cochin	Cochin University of Science And Technology	11-14 Feb, 2020
B. K. Mahapatra	AEHMS 12 in the International Conference on "Ecosystem Health and Fisheries of Indian Inland Waters: Multiple Stress, Management & Conservation"	Panthnagar, Uttarakhand	IFSI, GBPUAT, AEHMS, ICAR-CIFRI and PFGF	17-19 Feb, 2020
All scientist of ICAR-CIFE, Kolkata	Hatchery-Industry Meet on "Quality Seed for Doubling Aquaculture Production"	ICAR-CIFE, Kolkata Centre, Salt Lake		13 Mar, 2020
Dr. P.S Ananthan	Virtual workshop on Fish, livelihoods, and food and nutrition security: Leveraging partnerships to enhance knowledge and practice in	Online	(Michigan State University (MSU-World Fish (WF)-FAO)	8-9 Apr, 2020

	fisheries and aquaculture			
Dr. Muralidhar P. Ande, Senior Scientist Dr. K. Syamala, Scientist	Meeting with DDG, Fisheries Science, ICAR, New Delhi		DDG, Fisheries Science, ICAR, New Delhi	16 Apr, 2020
Dr. P.S Ananthan Dr. Neha Wajahat Qureshi	Webinar on Fisheries Governance in Great Lakes Region, USA	Online	ICAR-CIFE and Michigan State University (MSU), USA	17 Apr, 2020
S. Dasgupta	Impact of scientific research to tilapia aquaculture		ICAR-CIFE	14 May, 2020
Dr. Neha Wajahat Qureshi and Dr. P.S Ananthan	FAO webinar on Extension and advisory services at frontline of COVID 19 response ensuring food security in Asia	Online	FAO	19 May, 2020
All faculty of CIFE	Webinar on Challenges and Opportunities in Post Covid Era for Human and Shrimp Industry	Online	NAHEP CAAST ICAR CIFE	20 May, 2020
S. Munilkumar S. Dasgupta	Waste Reduction & Circular Economy in the Seafood Industry with As do Mar Tuna Case Study		World Sustainability Organization, Italy	20 May, 2020
Dr. K. Syamala, Scientist	Webinar on Technology Challenges during COVID Pandemic		NITTE, Mangalore	22 May, 2020
Dr. P.S Ananthan	Training Program on e-learning methods (CoF, Lembucherra, CAU)	Online	CoF, Lembucherra	27 May, 2020
S. Munilkumar	Virtual Learning using Google Classroom / G-Suite for Education"		ICAR-CIFE, Mumbai	27 May, 2020
Dr. P.S Ananthan	Training Program for Final Year BFSc students (CoF, Ratnagiri)	Online	CoF, Ratnagiri	28 May, 2020
Dr K K Krishnani	Webinar on "Desert Locust Management: Current status & future strategies	Virtual	ICAR	30 May, 2020
Megha Bedekar	Webinar on Fulbright-Nehru and other Fulbright fellowships	Online	USIEF	30 Jun, 2020

S. Munilkumar	Cyber-crime protection strategies during the lockdown era		NIELIT, Imphal & Cyber Police Station, Manipur	2 Jun, 2020
Dr. P.S Ananthan	FAO Webinar on "Crisis Response: How is the Seafood Supply Chain Adapting to the COVID-19 Pandemic?"	Online	FAO	3 Jun, 2020
Dr. Muralidhar P. Ande, Senior Scientist Dr. K. Syamala, Scientist	Digital Conference on: Brackishwater Aquaculture Scenario in India with a focus on shrimp farming during COVID-19: Challenges and way forward		ICAR-CIBA, Chennai	3 Jun, 2020
Dr K K Krishnani	Webinar on Opportunities in Fisheries Sector-Post Lockdown.	Virtual	Fisheries Reliance Foundation Agrovision	4 Jun, 2020
Dr K K Krishnani	Webinar Panel Discussion on "Covid-19: Impacts and New Normal in Agriculture	Virtual	NAAS	5 Jun, 2020
Dr K K Krishnani	Biodiversity of Natural resources	Virtual	CIBA and Commissioner of Fisheries, Govt of Telangana	5 Jun, 2020
Dr. Muralidhar P. Ande, Senior Scientist	COVID-19: Research Strategies and Therapeutics		Adikavi Nannaya University, Rajahmundry, Andhra Pradesh	6 Jun, 2020
S. Munilkumar	Launch of The State of the World Fisheries and Aquaculture"		FAO, Rome	8 Jun, 2020
Dr. Babitha Rani.A.M	Consultation meeting on Biofloc fish farming under Subhiksha Keralam Project	Online	Department of Fisheries, Government of Kerala	12 Jun, 2020
Dr K K Krishnani	Webinar on Challenges, Opportunities and future of inland fisheries	Virtual	Agrovision	12 Jun, 2020
Dr K K Krishnani	WEBINAR - Entrepreneurship Opportunities in Indian Fisheries	Virtual	ICAR-CIFT	12 Jun, 2020

	Sector - A crisis management support to overcome the impact of COVID-19 pandemic			
Dr. Neha Wajahat Qureshi	Webinar on "Agriculture during COVID-19, Economic Package and Reforms"	online	ICAR-NIAP	16 June, 2020
Megha Bedekar	DBT Onboarded schemes-configuration of service plus software	Online	ICAR-Education Division	19 Jun, 2020
Dr. Neha Wajahat Qureshi	Webinar on Contempory issues in Agricultural Development by Dr. Ramesh Chand and Dr. Harsh Bhanwala	Online	ICAR-NIAP	24 Jun, 2020
Dr K K Krishnani	Webinar on presentations of newly elected fellows	Virtual	NAAS	22-25 Jun, 2020
Megha Bedekar	Interactive Dashboard using Excel	Online	Xanthus College	25 Jul, 2020
Dr K K Krishnani	Webinar on New chemistry and physics in magnetic oxides by Prof. J. Paul Attfield	Virtual	DBT	3 Jul, 2020
G. H. Pailan	Executive Council meeting of ISCAR, canning		Indian Society of Coastal Agricultural Research (ISCAR) ICAR-CSSRI, Regional Research Station Canning Town - 743 329 West Benga	9 Jul, 2020
Dr K K Krishnani	Agriculture Startups - Opportunities & Challenges	Virtual	Agrovision	10 Jul, 2020
All staff of CIFE, Mumnai	Fish Farmers' Day		ICAR-CIFE, Mumbai	10 Jul, 2020
Dr. Babitha Rani.A.M	Consultation meeting on Biofloc fish farming under Subhiksha Keralam Project	online	Department of Fisheries, Government of Kerala	11 Jul, 2020
Dr. P.S Ananthan	FAO Virtual Dialogue on Innovative	Online	FAO	15 Jul, 2020

	biosecurity approaches for a healthier aquaculture industry			
Dr. P.S Ananthan	FAO Virtual Dialogue on “What does the Post 2020 Global Biodiversity Framework mean for Fisheries and Aquaculture?"	Online	FAO	15 Jul, 2020
Dr. P.S Ananthan	FAO Webinar on Unlocking the potential of fisheries and aquaculture value chains: FISH4ACP Broadcast	Online	FAO	16 Jul, 2020
All CIFE staff	92nd ICAR Foundation day and Award ceremony		ICAR, New Delhi	16 Jul, 2020
Dr K K Krishnani	Presentations of Foreign and Pravasi Fellows	Virtual	NAAS	21 Jul, 2020
Dr. Muralidhar P. Ande, Senior Scientist	Human Centric Innovations		ICAR-CIFE, Mumbai	24 Jul, 2020
S. Munilkumar	Virtual Dialogue: Building Forward Better with Aquatic Foods"		The World Fish Centre, Malaysia	29 Jul, 2020
Gayatri Tripathi	One week Online International Programme on “Recent Advances in Next Generation Sequencing (NGS)”	Zoom online platform	Centre for Ocean Research in association with Ministry of Earth Sciences – Earth Science Technology Cell (MoES-ESTC)	27 Jul-2 Aug, 2020
S. Dasgupta	International training under NAHEP		NAHEP, ICAR-CIFE	10 Aug, 2020
Dr. Muralidhar P. Ande, Senior Scientist	Dr. C.V. Kulkarni Memorial Lecture		ICAR-CIFE, Mumbai	11 Aug, 2020
Dr. Muralidhar P. Ande, Senior Scientist Dr. K. Syamala, Scientist& Technical officers	Annual IRC Meeting		ICAR-CIFE, Mumbai	06 Jul, 2020-14 Aug, 2020

of the Centre				
Dr. Babitha Rani.A.M	Consultation meeting on Biofloc fish farming under Subhiksha Keralam Project	online	Department of Fisheries, Government of Kerala	15 Aug, 2020
Gayatri Tripathi	One week Hands-on Virtual Workshop on "Applied Computational Techniques in Life Sciences-BioTools 2020	Zoom online platform	SynBiogenica Labs, Ministry of Micro, Small and Medium Enterprises, Govt. of India (Ministry of MSME)	10-15 Aug, 2020
S. Munilkumar	Leveraging Institutional Synergy for Technology-led Freshwater Aquaculture Development		ICAR-CIFA, Bhubaneshwar /NFDB, Hyderabad	19-21 Aug, 2020
S. Munilkumar	Seafood in the Diet: Consumption Patterns at Retail and Food Service ".		Infofish, Malaysia	21 Aug, 2020
G. H. Pailan	Workshop and Annual General Body Meeting of ISCAR, canning	ISCAR, canning	ISCAR, canning	22 Aug, 2020
S. Munilkumar	Perspectives of Private Sector Stakeholders & Developmental Agencies in Accelerating Freshwater Aquaculture Development".		ICAR-CIFA, Bhubaneshwar	25 Aug, 2020
Jeena K.	3rd Annual Review meeting of Indian Network of Fishery and Animals Antimicrobial Resistance (INFAAR)	Virtual platform	FAO and ICAR	28 Aug, 2020
All scientist of CIFE, Kolkata	Inauguration of academic and administrative building of Rani Lakshmi Bai Central Agriculture University, Jhansi		ICAR/GOI	29 Aug, 2020
Megha Bedekar	National Workshop on "Fish Health and Disease Management in Tropics"	online	College of Fishery Science, NDVSU, Jabal pur (M.P.)	4 Sep, 2020
S. Munilkumar	Effects of COVID 19 on US Aquaculture,		US Aquaculture	04 Sept 2020

	aquaponics, and allied businesses		Society (WAS)/ Auburn University/	
Dr. Muralidhar P. Ande, Dr. K. Syamala, Dr. P. Srinivasa Rao	National Webinar "New Trends in Aquaculture"		Kisan flex, Kolkata & Smart Agri Post, New Delhi	05 Sep, 2020
S. Munilkumar	3rd Tuna Webinar Series: Certification and Technology		Infofish, Malaysia	9 Sep, 2020
Neha Wajahat Qureshi	Webinar on Harnessing 'Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme for aquapreneurship development in	Online	TNJFU Ponneri	10 Sep, 2020
Sujata Sahoo	Small Scale Fisheries International Webinar	online	ICAR-CIFRI	9-10 Sep, 2020
Neha Wajahat Qureshi	NAAC sponsored virtual Awareness Program on predatory journals	Online	National Assessment and Accreditation Council (NAAC) Bengaluru	11 Sep, 2020
All scientist of ICAR-CIFE, Kolkata Megha Bedekar	Webinar on Entrepreneur Led Extension for Aquaculture Development		ICAR-CIFE, Motipur	22 Sep, 2020
S. Munilkumar	Functional aquafeed: the sustainable solution for the industry		Infofish, Malaysia	24 Sep, 2020
Megha Bedekar	The 5th meeting of the Technical Expert Committee on **Aquaculture and Marine Biotechnology**	Online	Department of Biotechnology	23-24 Sep, 2020
Megha Bedekar	Webinar schedule on National Education Policy	Online	ICAR CIFE	24 Sep, 2020
S. Dasgupta	Online presentation of the project before Empowered Committee of NASF, New Delhi	ICAR-CIFRI	NASF, New Delhi	25 Sep, 2020
Sujata Sahoo	Webinar 'Practical Pond Management for	online	Blue Aqua	25 Sep, 2020

	Disease Free Operations'			
Neha Wajahat Qureshi	Workshop on Plastic pollution and its impacts on fisheries and marine life ‘’Next Generation Aquaculture for Madhya Pradesh and Chhattisgarh	Online	ICAR-CIFE, Powarkheda Centre, Madhya Pradesh	29 Sep, 2020
S. Munilkumar	Conference on Livestock Resources		CII, Kolkata	29 Sep, 2020
Sujata Sahoo	International webinar on "Challenges and Opportunities for Fisheries under the COVID Pandemic - Country perspectives"	online	College of Fisheries, CAU, Imphal	29 Sep, 2020
All scientist of ICAR-CIFE, Kolkata Megha Bedekar	virtual webinar on “Next Generation Aquaculture for Madhya Pradesh and Chhattisgarh	online	ICAR-CIFE, Powarkheda centre	29 Sep, 2020
S. Dasgupta	Choosing the right NGS approach: WGS vs. WES vs. Targeted Sequencing	online	Science/AAAS	30 Sep, 2020
Megha Bedekar, Saurav Kumar	National Webinar on Advances in Fish Vaccines and Prophylaxis	Online	FCRI Thoothukudi	30 Sep, 2020
G. H. Pailan	XXV meeting of the ICAR Regional Committee-II	online	NRRI, Cuttack	08 Oct, 2020
Muralidhar P. Ande Sujata sahoo and Vinod K Yadav	Virtual global Summit on Artificial Intelligence for Social Empowerment (RAISE2020)	Online	Ministry of Electronics and IT, Government of India	05- 09 Oct, 2020
Babitha Rani A.M	Consultation meeting on Biofloc fish farming under Subhiksha Keralam Project	online	Department of Fisheries, Government of Kerala	15 Oct, 2020
All CIFE staff	Emotional intelligence for success		ICAR-CIFE, Mumbai	15 Oct, 2020
S. Dasgupta, Sujata Sahoo Megha Bedekar	Vaibhav 2020 (Modern aquaculture session)	online	ICAR CIFA	16 Oct, 2020
All CIFE faculty	Webinar on Aqua Envision: Towards Aquaculture Sustainability and		ICAR-CIFE Kakinada	26 Oct, 2020

	Resilience			
Jeena K.	Biosafety & Biocontainment – A discussion on Basics, Facility Design & Operational Requirements	Virtual platform	Kewaunee, India	28 Oct, 2020
Dr. Muralidhar P. Ande, Senior Scientist Dr. K. Syamala, Scientist	FAO "Global regional aquaculture reviews 2020"		FAO, Rome	29 Oct, 2020
Megha Bedekar	Prospects of Inland Saline Aquaculture in the North-Western parts of India	Online	ICAR -CIFE	31 Oct, 2020
Megha Bedekar	Direct Benefit Transfer (DBT)	Online	ICAR-Education Division	25 Nov, 2020
Jeena K.	6th World One Health Congress Virtual Edition, 2020 (Poster on 'One Health and Aquaculture was presented)	Virtual platform	University of Edinburgh	30 Oct-3 Nov, 2020
All faculty of CIFE, Mumbai	Online Webinar on "AI & IoT for Smart Aquaculture: India is Innovating"	Online	ICAR-CIFE	11-12 Nov, 2020
S. Munilkumar	Claude Boyd Aeration Theory and Practice		U.S. Aquaculture Society in cooperation with the National Aquaculture Association and the Alabama Cooperative Extension System	21 Nov, 2020
S. Munilkumar	Can aquaculture become the blue biotechnology of the future? (World Fisheries Day – 2020		ICAR-Directorate of Coldwater Fisheries Research Bhimtal	21 Nov, 2020
All scientist of ICAR-CIFE, Kolkata	World Fisheries Day	online	ICAR-CIFE	21 Nov, 2020
Jeena K.	Webinar on 'Let's Talk Superbugs: Making Sense of Antimicrobial	Virtual Platform	DBT Welcome Trust India Alliance in	24 Nov, 2020

	Resistance'		partnership with CCMB, Hyderabad	
All faculty of AEHMD	Webinar on Aquatic Animal Health being	Online	ICAR CIFE	24 Nov, 2020
Babitha Rani A.M	7th International conference on Fisheries and aquaculture	Online (Oral presentation)	TIIKM	26-27 Nov, 2020
Jeena K.	Performing Viricidal Efficacy Studies under GLP	Virtual platform	Kewaunee, India	27 Nov, 2020
Babitha Rani A.M	Consultation meeting on Biofloc fish farming under Subhiksha Keralam Project	online	Department of Fisheries, Government of Kerala	28 Nov, 2020
Megha Bedekar	Demonstration FS - CIFE - Institutional Fellowship) configured in Service Plus by IASRI Technical Team	Online	ICAR-Education Division	7 Dec, 2020
Sujata sahoo	XVI National Online Conference of Indian Association of Women Veterinarians (IAWV-2020) on "Sustainable Contribution of ATMANIRBHAR Women Veterinarians in Enrichment of Production Potential in Livestock Through Applications of Modern Technologies"	online	College of Veterinary and Animal Sciences, MAFSU, Parbhani	9-10 Dec, 2020
G. H. Pailan	Meeting on training programmes being organized by ICAR-Fisheries Research Institutes (HQ and Centre's) under the ICAR-DoF Convergence programme up to March 31, 2020.	online		11 Dec, 2020
All scientist of ICAR-CIFE, Kolkata	Biofloc Technology in Aqua farming: Its prospects in income generation	Online	NAHEP, ICAR-CIFE	15 Dec, 2020
Megha Bedekar	Physio-biochemical and biotechnological approaches for optimization of health	Online	Department of Veterinary Physiology & Biochemistry	15 Dec, 2020

	and reproduction in animals		College of Veterinary Science & A.H., Mhow NDVSU, Jabalpur M.P.	
Megha Bedekar	Workshop on Gender Sensitization "7th Year of the notification of Act 2013	Online	ICAR	15 Dec, 2020
S. Munilkumar	World Aquaculture 2020 Webinar		World Aquaculture Society, USA	14-16 Dec 2020
S. Munilkumar	Stay Connected- Stay Informed - Shape the Future: Cricket - Interactive session between Australian alumni & the Australian High Commissioner		Australian High Commission, New Delhi	17 Dec 2020
All staff of CIFE	Sexual Harassment at work place	Online	ICAR-CIFE	17 Dec, 2020
S. Dasgupta	Budget revision of the project proposal on "Captive breeding of Hilsa- phase II" under NASF	ICAR-CIFRI	ICAR-CIFRI	21, Dec, 2020
Sujata sahoo	India International Science Festival (IISF) 2020	online	GOI	22, Dec, 2020
All staff of ICAR-CIFE, Kolkata	Address by Hon'ble Prime Minister of India to the farmers and releasing PM Kisan money to farmers	Online	GOI	25, Dec, 2020
Babitha Rani A.M	Consultation meeting on Biofloc fish farming under Subhiksha Keralam Project	online	Department of Fisheries, Government of Kerala	29 Dec, 2020
Vinod K Yadav	National Online Hands –on Training on Machine Learning	Online	NAHEP, SKUAT-K	15 Dec, 2020 -3 Jan, 2021
Megha Bedekar	ICAR-AUs Nodal officers	Online	ICAR-Education Division	8 May 2020

6.6.5.3 Incentives for Excellence/Faculty Recognition

In order to recognize the significant contributions by the Faculty, Staff Members and Students of the Institute / University, the following awards are given every year on the foundation day of CIFE (6th July)

Institutional awards

Category	Nature of award
i. Best Scientist	Certificate and Cash Award of Rs.5,000/-
ii. Best Young Faculty	Certificate and Cash Award of Rs.5,000/-
iii. Best Teacher	Certificate and Cash Award of Rs.5,000/-
iv. Best Extension Scientist / Worker	Certificate and Cash Award of Rs.5,000/-
v. Best Young Scientist for field oriented work	Certificate and Cash Award of Rs.5,000/-
vi. Best Division / Centre	Certificate and silver plate
vii. Best Technical Staff	Certificate and Cash Award of Rs.5,000/-
viii. Best Administrative Staff	Certificate and Cash Award of Rs.5,000/-
ix. Best Supporting Staff	Certificate and Cash Award of Rs.5,000/-
x. Award for Hindi Publication	Certificate and Cash Award of Rs.5,000/-
xi. Award for Patent /IPR / Technology Generation/ Commercialization	Certificate and Cash Award of Rs.5,000/
Award for Best Publication of the year	Certificate and Cash Award of Rs.5,000/-
Award for Institutional Building	Certificate and Cash Award of Rs.5,000/-
Award for overall Best MFSc. Thesis	Certificate and Cash Award of Rs.5,000/-
Award for overall Best Ph.D. Thesis	Certificate and Cash Award of Rs.5,000/-

The application proforma for Best Teacher award is given in the annexure 36.

6.6.5.4. Capacity Building and Training

Capacity Building and training

Training Programmes undergone towards developing and strengthening skills, instincts, abilities, processes and resources that the University and its stakeholders need to survive, adapt, and thrive in the fast-changing agricultural scenario

Training programmes/Summer schools/Winter Schools attended by faculty

Year	2016-2017	2017-2018	2018-2019	2019 (Apr-Dec)	2020 (Jan-Dec)
Number of trainings, skills etc developed by faculty	16	19	18	9	26

Year 2016-2017

Name of the Programme	Period	Organized by	Name
National training in Molecular Biology and Biotechnology DBT HRD training	Jul-Sep, 2016	ICAR-CIFA Bhubaneshwar	Husne Banu
CAFT training programme in Biotechnological and Nanotechnological tools in Aquatic Animal Health	21 days	ICAR-CIFE Mumbai	Husne Banu
Training on Role of Scientists on Natural Resources Management and Environmental Management	5 days	Indian Institute of Forest Management- IIFM, Bhopal	Shashi Bhushan
DST sponsored training programme on Big Data Analytics in Agriculture	13-22 Jun, 2016	ICAR-NAARM, Hyderabad	V. Ramasubramanian
Short term course on Dynamic Data Assimilation	13-24 Jun, 2016	Civil Engineering Department, IIT Bombay	Vinod Kumar Yadav
Competence Enhancement Programme on Soft Skills and Personality Development	1-10 Jun, 2016	NAARM, Hyderabad	S.S. Kamat Nalini Poojary
DBT-3 month training on Marine Biotechnology for Fisheries Professionals	Jul-Sep 2016	CMFRI, Kochi	Shamna N.
Training on Advances in Fish Nutrition and Feed Technology	21-23 Sep, 2016	ICAR-CIFA, Bhubaneswar	P.K. Behera
International Workshop on Crustacean Taxonomy	20-23 Sep, 2016	University of Kerala, Thiruvananthapuram	A.K. Jaiswar
Training on HPLC, GLC, GCMS Instrumentation analysis at Export Testing Laboratory	22-30 Nov, 2016	Dept. of Agricultural Chemicals, Faculty of Agriculture, B.C.K.V., Mohanpur, Nadia, W.B.	S. Datta
Winter School on Rapid Diagnostics for Fish Health Management	18 Nov-08 Dec, 2016	ICAR-CIFE, Mumbai	D.K. Singh

Winter School on Rapid Diagnostics for Fish Health Management	18 Nov-08 Dec, 2016	ICAR-CIFE, Mumbai	D.K. Singh
Good Laboratory Practices for ICAR Technical Officers	3 Dec, 2016	ICAR-CIFE, Mumbai	Nalini Poojary
Advances in Molecular Taxonomy	5-14 Dec, 2016	CIFE, Mumbai	Paramita B. Sawant
Application of Molecular Marker in Fish Breeding	31 Jan-09 Feb, 2017	ICAR-CIFE, Mumbai	Dhalongsaih Reang
Biotechnological and Nanotechnological Tools in Aquatic Animal Health Management	08-28 Mar, 2017	ICAR-CIFE, Mumbai	Upasana Sahoo

Year 2017-2018

Name of the faculty	Name of the Training Programmes/ Summer school etc.	Venue	Date
Sujata Sahoo	Right to Information Act, Improvement of Records Management, Conduct Rules and Prevention of Sexual Harassment	Airport City Hotel, Kolkata, West Bengal	24-26 April, 2017
Arun Sharma and T.I. Chanu	DBT-HRD sponsored three month National training programme on "Molecular Biology and Biotechnology for Fisheries Professionals"	ICAR-CIFA, Bhubaneswar, Odisha	15 February-15 May, 2017
Karankumar Ramteke	ISRO-sponsored NNRMS Course on "RS & GIS Coastal and Ocean Sciences"	Indian Institute of Remote Sensing, ISRO Dept. of Space, Govt. of India, Dehradun, Uttarakhand	1 May- 23 June, 2017
Aparna Chaudhari	'Management Development Program of Procurement Policy Division' Ministry of Finance, GoI, on Public Procurement	National Institute of Financial Management, Faridabad	15-20 May, 2017
Sujata Sahoo	One day Training Workshop on PFMS	ICAR-NIRJAFT, Kolkata, West Bengal	18 September, 2017
Rupam Sharma	Priority setting, Monitoring and Evaluation (PME) of Agricultural Research Projects"	NAARM, Hyderabad	6-11 October, 2017
Dhalongsaih Reang	Winter school on "Recent Advances in Aquaculture Biotechnology"	College of Fisheries, Lembuchera, Agartala, Tripura	1-21 November, 2017
Sunil Kumar Nayak	CAFT programme on "Advances in Nano-Biotechnological tools in Fisheries"	ICAR-CIFE, Mumbai, Maharashtra	4-13 December, 2017
K. Pani Prasad	Training on "Emotional Intelligence at Workplace for Scientists / Technologists"	Centre for Organizational Development, Hyderabad, Telangana	11-15 December, 2017
Karankumar Ramteke Shashi Bhushan	Winter School Training Programme on "Structure and Function of the Marine Ecosystem: Fisheries"	ICAR-CMFRI, Kochi Kerala	1- 21 December, 2017

Ashutosh D Deo, Jeena K. Saurav Kumar	Training and Awareness Program on J-Gate@CeRA, in association with ICAR-DKMA	ICAR-CIFE, Mumbai, Maharashtra	23 December, 2017
Satya Prakash	CAFT Programme on "Advance Level Training on Soil, Plant and Water Analysis"	ICAR-IARI, New Delhi	8-28 December, 2017
G. H. Pailan	Training-cum-Workshop on "Social Security of Fisher"	ICAR-CIFE, Kolkata Centre, Kolkata, West Bengal	28 December, 2017
Suryakant L. Koli	Training programme on Koha KOHA for library staff at ICAR	NAARM, Hyderabad	5-9 February 2018
Mr. Dhalongsaih Reang	ICAR sponsored STP on "Development and Characterization of Fish Cell Lines for Biotechnological Applications".	ICAR-CIFE, Mumbai, Maharashtra	1-10 February, 2018
Pankaj Kumar	DBT-HRD sponsored three month National training programme on "Molecular Biology and Biotechnology for Fisheries Professionals"	ICAR-CIFA, Bhubaneswar, Odisha	20 November, 2017 -19 February, 2018
K. A. Martin Xavier	Winter school on "Marine Nutrients for Fighting Malnutrition: Recent Advances in Marine Biomolecules for Human Nutrition and Healthcare"	ICAR-CIFT, Cochin, Kerala	1-21 February, 2018
Gireesh Babu P. A. Pavan Kumar	Genome Sequencing: Methods and Applications	ICAR-NBFGR, Lucknow	12-17 March, 2018
Satya Prakash	Revising course for FOCARS: Reflection and Feedback of Trained Scientists	ICAR-NAARM, Hyderabad, Telangana	15-16 March, 2018

Year 2018-2019

Name of the faculty	Name of the Training/ rogrammes/ Summer School etc.	Place	Date
Shivaji Argade, Shamna N. and Neha W. Qureshi	Impact Evaluation of Agricultural Technologies	Sher-i-Kashmir International Conference Centre (SKICC), Srinagar, J&K State	02-06 April, 2018
Paramita B. Sawant	Recent Advances in Soil and Water Management in Brackish Water Aquaculture	ICAR-Central Institute of Brackishwater Aquaculture Chennai	25-30 June, 2018
K. Pani Prasad and Jeena K	FAO-ICAR Training on "WHONET Software for Data Management of Antimicrobial Resistance (AMR)"	ICAR-National Bureau of Fish Genetic Resources Lucknow	17-18 August, 2018
Aparna Chaudhari	Intellectual Property Valuation and Technology Management	ICAR- National Academy of Agricultural Research Management, Hyderabad	24-29 August, 2018
Shivaji Argade	Climate Change and Abiotic Stress Management Strategies for Doubling Farmer's Income	ICAR-National Institute of Abiotic stress Management Baramati, Pune, Maharashtra	07-27 September 2018

Pankaj Kumar	Algal Culture	ICAR-CIFE, Mumbai	16-22 September, 2018
Saurav Kumar	LC-MS Based Proteomics (PROTEO)	CSIR- The Centre of Cellular & Molecular Biology, Hyderabad	03-12 October, 2018
Dasari Bhoomaiah	Advances in web and mobile app development	ICAR- National Academy of Agricultural Research Management, Hyderabad	05-10 October, 2018
Layana P.	Electrospinning for Nanofibre Production and Its Applications	ICAR- Central Institute for Research on Cotton Technology, Mumbai	29-31 October, 2018
Kundan Kumar	Environmental Impact Assessment	CSIR-National Environmental Engineering Research Institute, Nagpur	29 October - 02 November, 2018
Rathi Bhuvaneswari G.	Spectroscopic & Chromatographic Techniques for Material Characterization	ICAR- Central Institute for Research on Cotton Technology, Mumbai	27-29 November, 2018
Jeena K.	Gene Mining Approaches and In Silico Functional Analyses	ICAR- CIFE, Mumbai	03-23 December, 2018
V. Hari Krishna	Training of Trainers Programmes Agricultural Technology Application	Research Institute, Kanpur, Uttar Pradesh	17-19 December, 2018
Manish Jayant	Training on Experimental Design and Statistical Data Analysis	ICAR-Indian Agricultural Statistics Research Institute, New Delhi	03-16 January, 2019
K. Pani Prasad	Assessment Tool for Laboratory AMR Surveillance System (ATLASS) Assessors Training	ICAR-Central Institute of Fisheries Technology, Kochi, Kerala	21-25 January, 2019
Arun Sharma and T.I. Chanu	Development and Application of Vaccines for Fish Aquaculture	ICAR-CIFE, Mumbai	04-13 February, 2019
Principal Scientists of ICAR-CIFE, Mumbai	Emotional Intelligence for Personal and Work Excellence	ICAR-CIFE, Mumbai	12–13 February, 2019
Madhuri S. Pathak	Digital Teaching Techniques	ICAR-The National Academy of Agricultural Research Management, Hyderabad	14-20 March, 2019

Year (April-December 2019)

Name of the faculty	Name of the Programme	Place	Period
Dr. Aparna Chaudhari	Right to Information for Appellate Authority	Institute of Secretariat Training and Management, New Delhi	10 May, 2019
Dr. Shivaji Argade	Environmental and Social Impact Assessment and Gender Mainstreaming in Developmental Projects	Nashik, Maharashtra	3-5 July, 2019
Dr. Manjusha L	Food and Nutritional Security of the Rural Households	MANAGE, Hyderabad	15-19 July, 2019
Dr. Parimal Sardar	Priority setting, Monitoring and Evaluation of Agricultural Research Projects	ICAR-NAARM, Hyderabad	18-23 July, 2019
Dr. S. Jahageerdar	One Day Regional Training Programme for Admin Users of PDS (Urkund)	Jointly organized by INFLIBNET Centre, and Mahatma Gandhi Mission Institute of Health Sciences, Navi Mumbai	29 August, 2019
Faculty of CIFE	Hindi Unicode Karyashala	ICAR-CIFE, Mumbai	12 September, 2019
Dr. Mukunda Goswami	Proteomics & OMICS Technologies-2019	IIT Bombay, Mumbai	23 September- 4 October, 2019
Dr. Pawan Kumar	New Approaches and Changing Perspectives in Fisheries Biology	ICAR-CIFRI, Barrackpore, Kolkata	04-08 November, 2019
Dr. Sujata Sahoo	General Management Programme for Women Scientists	ASCI, Hyderabad	02-13 December, 2019

Year Jan-Dec 2020

Training Programmes/Winter schools/CAFT programmes etc. including online training programmes attended			
Name of the faculty	**Name of the Training Programmes/ Summer school etc. attended**	**Place**	**Date (Period)**
Dr. Neha Wajahat Qureshi	International Training on Animal Disease Economics	ILRI and ICAR sponsored	8-10 January 2020
Dr. Neha Wajahat Qureshi Dr. Shivaji Argade, Abuthagir Iburahim S, Vidhya V., Dayal Devdas, Shobha Rawat	SciCom for Smart Scientists	ICAR-CIFE (NAHEP)	16-22 January 2020
Gayatri Tripathi	A Webinar on “Metagenomics solutions on PacBio Sequel”	Online meeting platform	22 April, 2020
Dr. Muralidhar P. Ande	National Webinar on Challenges, Opportunities and the Future of Indian Fisheries Post COVID-19 Era	College of Fisheries, Veraval, Gujarat	28-30 May, 2020
Dr. Muralidhar P. Ande	Challenges, Opportunities and Future of Agri and Allied Research and Education: Post Covid Era	AIASA, New Delhi	30-31, May, 2020
Abuthagir Iburahim S, Vidhya V., Dayal Devdas, Shobha Rawat	Online Certificate Course on Remote Sensing & GIS Technology and Applications for University Teachers and Government Officials	IIRS Outreach Programme, Dehradun, ISRO	13 June-July, 2020
Vidhya V.	Techniques in assessment of Aquatic biodiversity and its conservation		15-19 June, 2020
All staffs of ICAR-CIFE, Mumbai	E-office implementation training	ICAR-IASRI, New Delhi Online	22 June, 2020
Dr. Neha Wajahat Qureshi Dr. P.S Ananthan Dr. Vinod Yadav	ICAR-NIAP Webinar series on Quantitative Methods for Social Sciences	ICAR-NIAP	01- 23 June 2020
Dr. Muralidhar P. Ande, Senior Scientist Dr. K. Syamala, Scientist	Digital Conference on: New age technologies for sustainable brackishwater aquaculture	ICAR-CIBA, Chennai	18 July 2020
Dr. Muralidhar P. Ande, Dr. K. Syamala,	Proper Feed Ingredients and Formulation for Aquafeed	Masyarakat Akuakultur, Indonesia	23 July 2020
Dr. Muralidhar P. Ande, Dr. K. Syamala,	Aqua-preneurship development through Seed Production air-breathing fishes	CoF, Tripura	21-25, July 2020

Dr. Muralidhar P. Ande	CSTFA Webinar on Implementing integrated indirect criteria to select for feed efficient rainbow trout families to enhance the plant protein utilization in salmonid aquaculture	James Cook University, Australia	11 August 2020
Dr. Neha Wajahat Qureshi	Faculty Development Program (FDP) in Behavioural Economics	Department of Economics, St Berchmans College, Changanassery, Kerala	22-25 August 2020
Dr. Neha Wajahat Qureshi	21 Day Online Training Programme on “Data Analytics in Fisheries”	Department of Fisheries Extension, Economics and Statistics, Dr. M.G.R. Fisheries College and Research Institute, TNJFU, Thalainayeru.	10 August-3 September 2020
Abuthagir Iburahim S.	Design Thinking in Research Project Formulation and Implementation	ICAR-NAARM Hyderabad	25-29 August, 2020
Gayatri Tripathi	BDFACS Master Multicolor flow cytometry training.	MS Teams	1-3 September, 2020
Dr. Shivaji Argade	21 days Online Training Programme on Innovative Practices in Extension Research and Evaluation	ICAR-NAARM, Hyderabad	08-28 September, 2020
Gayatri Tripathi	Basics of FlowJo	MS Teams	30 September, 2020
Dr. Muralidhar P. Ande, Dr. K. Syamala	Improving Research Integrity: Managing and Sharing Research Data	Wiley Research Webinars APAC	06 October 2020
Dr. Neha Wajahat Qureshi	DST sponsored Training on Climate Change: Challenges and Response (for women scientists)	Centre for Disaster Management (CDM), Lal Bahadur Shastri National Academy of Administration (LBSNAA)	5-9 October 2020
Gayatri Tripathi	National e-training on Research Ethics and Thesis/Research Paper Writing Skills Development	Google meet	24-28 November, 2020
Jeena K.	Introduction Course on Aquatic Epidemiology Concepts	World Fish in collaboration with	9-10 December,

		Norwegian Veterinary Institute	2020
Megha Kadam Bedekar	Online Advanced Bioinformatics tools and its Applications in Agriculture”	Online organized by NAARM, Hyderabad	7-11 December 2020
Sujata Sahoo	WFD Lecture Series No 4 "Biosecurity - The Concept to Guarantee the Sustainable Development of Aquaculture" by Dr Jie HUANG	online	22 December, 2020
All scientist of ICAR-CIFE, Kolkata	Online training programme on Carp culture practices and recent advances	online	28 December, 2020
Sujata Sahoo	Breeding and Seed Production of Rainbow Trout And Its Best Managements Practices	online	29 December, 2020

6.6.6. Student Development

6.6.6.1. Scholarships/Stipend

The students who have cleared the ICAR-National level competitive exam take admission in the CIFE and all are eligible for institutional fellowship. However, few meritorious students who secured top ranks in the entrance test, receive ICAR-PG scholarship / ICAR-JRF fellowship from ICAR. Further to encourage the meritorious students, the institute rewards with endowment awards. The award details are given below.

S. No.	Endowment Name	Name of Award	Prize
1	Dr. Hiralal Chaudhari	Gold Medal for toppers (11 Disciplines)	Certificate and Gold Medal
2		Dr. Hiralal Chaudhuri Award for Best Young Scientist	Certificate and Cash Award of Rs. 5,000/-
3		Dr. Hiralal Chaudhuri Award for Best Fish Farmers	Certificate and Cash Award of Rs. 5,000/-
4	Sir Dorabji Tata Trust	Overseas training of outstanding student (2 Nos.)	
5	Dr. Jalihal	Dr. D.R. Jalihal Award for overall Best M.F. Sc. Student Gold Medal (National Level)	Certificate and Gold Medal
6	Dr. M.A. Upare	Gold Medal for Economics Topper	Certificate and Gold Medal
7	Dr. B.N. Sharma	Gold Medal for Extension Topper	Certificate and Gold Medal
8	Dr. C.V. Kulkarni	Dr. C.V. Kulkarni Best M.F.Sc. Student Research Award	Certificate and Gold Medal for CIFE student
9		Dr. C.V. Kulkarni Best Ph.D. Student Research Award	Certificate and Gold Medal for CIFE student
10		Dr. C.V. Kulkarni Best Young Scientist Award (at National Level)	Certificate and Gold Medal
11		Smt. Nirmala C. Kulkarni Best M.F. Sc. Girls Student Research Award	Certificate and Gold Medal for CIFE student
12		International Travel Award	Student (M.F.Sc./Ph.D.) from CIFE to participate in International Conference/ Symposia in the field of any aspects of Aquaculture, Fisheries etc. towards registration fee, partial travel supports etc., with a maximum limit of Rs. 20,000=00.
13	Dr. K. Ravindranath	Gold Medal for AEHM M.F.Sc. Topper	Certificate and Gold Medal
14		Prof. Ravindranath Krothapalli best Ph.D. Thesis Award (for AEHM Division)	Certificate and Gold Medal

15		International Travel Award	Student (M.F.Sc./Ph.D.) from CIFE to participate in International Conference/ Symposia in the field of Aquaculture and Fisheries towards registration fee, partial travel support etc., with a maximum limit of Rs. 20,000=00.
16	Dr. Alikunhi	"Professor K.H. Alikunhi Gold Medal" for overall Best Ph.D. Student	Certificate and Gold Medal
17	Madhavprasad S. Jahageerdar	Gold Medal for FGB Topper	Under implementation process

Apart from these, passed-out students selected ICAR-Netaji Subhas-International fellowship for pursuing PhD in abroad. The details are given below.

Year	List of Students
2015-16	1. Ms. Suvra Roy 2. Mr. Damodharan 3. Mr. Vikash Kumar
2016-17	1. Mr. Arun V.V. 2. Mr. Arun Sudagar 3. Mr. Feroz Khan S
2017-18	1. Mr. Shyam K U 2. Aparajita Singh
2018-19	1. Ms. Saloni Shivam 2. Mr. Rakesh Das
2019-20	1. Mr. Satya Prakash 2. Mr. Shubham Varshney 3. Ms. Gopika Radhakrishnan 4. Mr. Krishna Pada Singh 5. Mr. Dar Jafar Usuf

6.6.6.2. Extra and Co-Curricular Activities

ICAR-CIFE encourage students to participate in sports, cultural and art competitions on national platforms. ICAR-CIFE also organizes various extracurricular activities and competitions where students can showcase their talent. Institute has a well-constituted postgraduate students' union (PGSSU) consist of a president, vice president, cultural secretary, sports secretary and hostel representatives. Every year, PGSSU organizes a celebration of various festivals (Navratri, Ganpati, Pongal, Christmas, New year, Holi etc.). The institute provides funding support for organizing all celebrations, annual days, welcome parties, farewell party etc. Students are given various platforms to express their thoughts and innovative ideas.

In 2019, the 3rd Student Convention on “Next-generation aquaculture: Panacea to employment challenges” was held at ICAR- CIFE and allowed all students to share their innovative ideas and research papers.

Sports activities:

ICAR-CIFE has a well-equipped sports and gymnasium facility at Yari road campus and Seven Bungalow campus.

Yari Road campus

1. Two Badminton courts with international standards
2. Two Table tennis courts
3. Carrom boards and chess board playing facilities
4. Well-equipped gymnasium

Facility 2-Outdoor sports facility

1. Basket ball court
2. Volley ball court
3. Lawn Tennis court
4. Foot Ball ground
5. Cricket ground
6. Kabbaddi ground
7. Long Jump facilities

Seven Bungalow Campus

1. Gymnasium
2. Outdoor badminton court
3. Volley ball court

The sports facility is maintained by the OIC (sports facility) and a sports committee.The committee arranges all accessories such as badminton rackets, football, cricket kit, basketball, shuttlecocks, and tennis balls etc to the students. To create a healthy and harmonious environment, CIFE organizes indoor and outdoor sports for faculty and staff. The experienced staff members coach students and prepare them for competitions.

A gym instructor is available to train and guide the students on using the gym equipment and for proper exercise. Students are enthusiastic and utilize sports and gym facilities for recreation and health purpose. They also participate in intercollege sports. ICAR-CIFE also regularly organizes annual sports meet for students. The details of student participation in different sports event are given below.

Details of students’ participation in of Agri-unifest and Agri-unisports

Year	Details of Activities	Institute/National level
2017	**XVII All India Inter Agricultural Universities Sports and Games Meet- 2016-17,** held at CCS Haryana Agricultural University, Hisar from 25- 29th March, 2017.	National
2017	**XVII All India Agricultural Universities Youth Festival-2017,** held at Rajasthan University of Vetenary and Animal Sciences (RAJUVAS), Bikaner from 22-25th	National

	February, 2017.	
2018	Sports event conducted at Bangaluru during 30 Jan to 03 Feb-2018 Volleyball, Badminton, Table Tennis, Football Basketball, Kabaddi, Kho- Kho, **Athletics:** 100m, 200m, 400m, 800m, 1500m, High jump, Long jump, Triple Jump, Discus Throw, Javelin Throw, Shot put throw	National
2018	**Intercollegiate Sports and Cultural Feast** "**SHOAL-2018"** organized by College of Fisheries, Mangalore. Several events like Light Vocal, Mime, Group Dance, Badminton (Singles & Doubles), Chess, Swimming, Table Tennis, Quiz, Clay Modelling, Rangoli, Collage, Cartooning, Debate, Group Dance were held. **Medal won**: 1st in debate, quiz, and chess.	Inter-collegiate
2018	Ms. Jerusha S, PhD student represented ICAR CIFE in Japan-East Asia Network of Exchange for Students and Youths (JENESYS) 2018 for SAARC countries Japan during 10-18 December, 2018	International
2019	Ms Bharathi Rathinam PhD student represented ICAR CIFE in Japan-East Asia Network of Exchange for Students and Youths (JENESYS) 2018 for SAARC countries Japan during 10-18 December, 2018	International

Programmes organized by ICAR CIFE

2017	**ICAR-CIFE Annual sports meet** from 6-12 March, 2017.	Institute
2017	**ICAR-CIFE Annual cultural event "CIFEST 2K17"** from 10-12 November, 2017 in the University Campus.	Institute
2017	**CIFE- WAVE 2017** were organized during 3-6 March 2017. These included the Brainstorming session on Blue Revolution: Way Forward; The highlight of the mega event was the Second Students' Convention on Innovative Approaches for Academic Excellence in Higher Fisheries and Education that was attended by around 250 students from fisheries universities all over India.	
2018	**ICAR-CIFE Annual Sports Meet** from 22-25 December 2018. Various tournaments were held including both indoors and outdoors sports such as javelin, shot-put, long jump, discus throw, walking race, slow cycling, Kho-Kho, kabaddi, basketball, volley-ball, cricket and football were held for girls and boys separately. Indoors game like badminton, table tennis, chess, and carom board were conducted in different categories.	Institute

2019	**ICAR-CIFE Annual Sports Meet** from 9-12 November, 2019.	Institute
2019	**CIFE LITERATI** (Literary Contest) was organized by PGSSU from 20-21 November, 2019. The events include Quiz, Debate, Self-Written Poem, Photography Contest (Self Captured), Innovative and Informative Posters.	Institute
2019	**CIFE Premier league 2019** was organized by CIFE Cricket Team from 22-25 November. The event was sponsored by Alumni members of CIFE who are presently working in ICAR/State departments and Industry.	Institute
2019	III Student Convention on "Next generation aquaculture: Panacea to employment challenges" held at ICAR- CIFE during 26 March, 2019.	Institute
2019	"Communicating Science" programme for students organized by ICAR- CIFE on 20 March 2019.	Institute
	3rd Student Convention on Next Generation Aquaculture: Panacea to Employment Challenges Institute	National level
2019	Mr. Tapas Paul, member of Gender Champion Club, ICAR-CIFE participated in **State Level Inter College Elocution Competition** on anti-dowry being organized by Sathey College, Vile parle Mumbai, on 8 December 2019 at 9:30 am. The topic of elocution competition was "**Dowry custom: A burning problem**".	State level
2019	**Self-defence training** for girl students of ICAR-CIFE was arranged at "Women's self-defence Centre-WSDC" in Andheri Sports Complex during 8-29 September 2019.	District level
2020	**CIFE Premier league 2020** was organized jointly by CIFE Cricket Team and PGSSU from 13-15th March, 2020. Thunnus Warriers was the winner of the tournament.	Institute
2020	ICAR-CIFE observed the **International Day of Yoga – 2020** on 21st June with full enthusiasm. This year, to maintain the social distancing, yoga day was celebrated through video conferencing**.** Total 179 participants including Head of Departments, Officer in charge of centers, Scientists, Technical officers, Administrative staff and students of ICAR-CIFE participated in the program. Theme of the programme was **"Yoga for Health - Yoga at Home"**	Institute
2020	**Online "Women Self Defence Training"** was Jointly organized by Gender Champions Club, ICAR-CIFE and NAHEP project from 4-26 July 2020, via Zoom app. From ICAR CIFE twelve students and ten family members participated in the training. Complete practical training on self-defence using various techniques was imparted	District level

Awards Received by students in All India Fisheries College Cultural and Sports Meet, Mangalore December 2018

S.No.	Name of the student	Event	Position
1.	Mr. Jeevan T. M.	Badminton singles	Gold Medal
2.	Mr. Prathik & Mr. Jeevan	Badminton doubles	Gold Medal
3.	Mr. Shiva Kumar	Table tennis	Gold Medal
4.	Ms. Gopika Radhakrishnan	English debate	Gold Medal
5.	Mr. Avinash Gaikwad & Mr. Chanikya Naidu	Quiz	Gold Medal
6.	Ms. Sona B. R.	Chess	Gold Medal
7.	Mr. Jeevan T. M.	Swimming	Bronze Medal

Awards received by students in literary contest conducted at ICAR CIFE on 20 Nov, 2019.

1.	Manmohan kumar, Mukesh Pandey	Quiz	First
2.	Tapas Paul, Saurav Debnath	Quiz	Second
3.	Jane Jacob	Debate	first
4.	Chanikya Naidu	Debate	Second
5.	Saumya Pandey	Self-written poem	First
6.	Mukesh Pandey	Self-written poem	second
7.	Kranthi Rekha	Photography contest (self-captured	First
8.	Sudarshan	Photography contest (self-captured	Second
9.	Chanikya Naidu	Innovative and informative posters-	First

Awards received by students in ICAR CIFE Annual Sports meet 2019

Rank	Boys	Girls
100m Race		
1	Mr. Suman Nama	Ms. Martina Meinam
2	Mr. Tanmoy Kr Manna	Ms. Tenji Pem Bhutia
3	Mr. Somnath Saha	Ms. Susmita Rani
Javelin throw		
1	Mr. Suman Nama	Ms. Shivangi Bhatt
2	Mr. Ramakrishna Reddy Parige	Ms. Darivemula Asha
3	Mr. Rajeshwaran N.	Ms. Mathumitha S. P.
Shotput		
1	Mr. Rinkesh Nemichand Wanjari	Ms. Shivangi Bhatt
2	Mr. Abhijit Mallik	Ms. Jane Jacob
3	Mr. Ubaid Qayoom	Ms. Sonam Angmo
Discus		
1	Mr. Suman Nama	Ms. Shivangi Bhatt
2	Mr. Bandela Dayakar	Ms. Jane Jacob
3	Mr. Ubaid Qayoom	Ms. Darivemula Asha
Slow Cycling Race		
1	Mr. Mohammed Ihzan	Ms. Martina Meinam
2	Mr. Utsa Roy	Ms. Banani Mohanta
3	Mr. Ramakrishna Reddy Parige	Ms. Susmita Rani
Walking competition		
1	Mr. M Ajithkumar	Ms. Shivangi Bhatt
2	Mr. Lokesh S.	Ms. Dhivyakumari S.
3	Mr. Krishna Pada Singha	Ms. Anjali Kumari
Long Jump		
1	Mr. Suman Nama	Ms. Martina Meinam
2	Mr. Tanmoy Kr Manna	Ms. Shivangi Bhatt
3	Mr. Alok Kumar Sethy	Ms. Banani Mohanta

Overall Champion Atheletics : Boys- Mr. Suman Nama
Girls- Ms. Shivangi Bhat

Player of the series : Mr. Somnath Saha

Player of the match : Mr. Lalramnunsanga

6.6.6.3. Health Facilities

ICAR-CIFE has two in-house doctors Dr. Arun Kumar and Dr. Babita Goyal for regular health care and medical check-up of staff and students. A primary medical room is established in Boys' hostel with basic medical facilities. The lady doctor regularly visits the primary medical centre for regular check-up and follow-ups.

- Basic emergency facilities Viz wheel chair, stature, first aid box, oximeter, sphygmomanometer, glucometer etc are available in academic building, hostel and administration office for any emergencies. All emergency phone numbers are displayed at suitable locations.
- CIFE also providing group health insurance scheme to all the students.

6.6.6.4. Sports and Cultural Facilities

ICAR-CIFE has good indoor and outdoor sports facilities and cultural facilities within the campus.

Sports and cultural facilities

S.No.	Name of facility	Details of facility/Sports
1.	Indoor Sports Complex	Badminton court (Synthetic Surface)-One
		Badminton court (Wooden Surface) – One
		Table tennis-Two
		Carrom-Two
		Chess-Two
		Gymnasium with latest equipment-Two
2.	Out Door Sports	Football (soil base with grass)-One
		Volleyball (soil base with grass)-Two
		Basketball (hard court)-One
		Lawn Tennis (hard Court)-One
		Badminton (hard court)-Two
		Kabaddi (soil base)-One
3.	Cultural Facility	Auditorium -Two

6.6.6.5. Student Counselling and Placement Cell

The institute has a Placement Cell and acts as an interface between students and faculty. Regularly, the Cell provides information on Job vacancies to the students. The details of students' placement are given below.

Job	2020	2019	2018	2017	2016	2015
ARS		4	0	10	7	8
Assistant Professor	3	16	20	11	6	3
Department of Fisheries, GoI	1	1	4	2	2	3
State Fisheries Department	15	20	27	20	12	8
RA/SRF	7	8	9	7	6	8
Private Sector	5	3	4	5	7	6
Higher studies (abroad)	4	5	6	5	4	5
Banking sector	2		2	5	2	2
Total	37	57	72	65	46	43

Personality development and Career counselling cell:

Personality development programmes are conducted for students by PDCCC cell. Brief report is as follows.

Activities of Personality Development and Career Counselling Cell (PDCCC):

Activity	Number of students attended	Brief Particulars
Personality development program	26	A personality development program was conducted by Mr. Animesh Gupta on "Limitless, Mumbai" during 16 May, 18 August, 2015. The program consisted of various activities intended to boost the confidence, composed thought process, improvement of body language, positive thinking, emotional intelligence, stress management etc. The activities included group discussions, presentations, team work and neuro-linguistic programing.
English language training	30	The English language program was organized from 22 August-28 November, 2015 every Saturday from 3 pm to 6 pm. The program was conducted by BM English training institute, Mumbai. The goal of the program was to impart professional English language skills to first year Master's students who had newly joined ICAR-CIFE. The program consisted of intense training in general speaking skills, sentence formation, grammar improvement, presentation skills, assertive attitude, etiquettes and manners and vocabulary.

The two-day personality development programme	30	PDCCC organized 'Personality Development Programme for ICAR-CIFE students on April 21 and 28, 2018. The program consisted of confidence building, motivation, self-assessment, facing interview, conflict management, stress management and team works.
English language training program	30	Organized for the students of CIFE from 03 May-26 June, 2018. Thirty students participated in the program. The English language training program consisted of 40 hours of training on vocabulary, introduction, conversation skills, negotiating, objection handling, issue handling, telephonic etiquette, e-mail etiquette, interview skills, resume writing etc. Both the programs were supported by ICAR SDAE

6.6.6.6. Disabled Friendly Facilities

ICAR-CIFE follows the compliance with the provision of *section 32 of the Rights of person with Disabilities Act*. 2016, while dealing with the reservation of seats in admission of each degree programme. In accordance with UGC guidelines DO no. F-6-1/2018 (SCT), ICAR-CIFE has a committee to take necessary steps for disabled persons.

The institute has developed few barrier free entry and exit points (ramps) for the convenience of the specially-abled students. Further, the institute has installed elevators, toilets with special facility, wheel chairs, ramp etc. for the comfort of the specially-abled persons. Each specially- abled student is given personal attention. Also, Gender champion club of university encourages and provide opportunities to the specially-abled students to participate in different activities.

6.6.7. Infrastructure

6.6.7.1. Physical facilities including administrative building and lands

The Institute has two campuses viz., Seven Bungalows campus and Yari Road campus.

Old Campus

The Seven Bungalows campus of CIFE is located in a lush green set-up, encompassing about 5.5 acres' area, about half a kilometre away from the Versova sea beach. The division of Fisheries, Economics, Extension and Statistics, Post-Harvest Technology and Aquatic Environment sections of the institute are housed in the campus with the infrastructural facilities such as classrooms, laboratories, committee room, museum, backyard wet-lab and an auditorium. Apart from the main building, the campus has three-storied hostel, staff residential quarters, gymnasium, canteen and Guest House.

Facility	Area in SQM
Soil and Water Chemistry Lab	209.25
Wet Laboratory	45.00
Aquaculture lab	34.65
Aquatic Environment lab	32.00
Fish Biochemistry lab	24.00
Fish processing lab	122.00
Quality Control lab	71.00
Product Development lab	43.00
Computer lab	65.00
Digital Imaging lab	24.00
Photography lab	23.00
Giant Freshwater Prawn Hatchery	84.33
Carp Hatchery	84.33
Museum	69.00
Auditorium	115.00
Workshop	534.75
Gymnasium	209.00
Guest House	102.30

Yari Road Campus (New Campus)

Infrastructural development is a continuous process at the Institute and the new campus has been developed in a phased manner. During Phase-I, the main academic building (Basement + Ground and I and II floors) was constructed. During Phase-II, library, Girls' hostel (G+I), and Type-IV residential quarters (Stilt+I with 6 flats) were constructed.

During phase-III, construction of Main Academic Building (III and IV Floor), Boys' Hostel (Stilt + 4 Floors), Faculty Hostel/Scientist Home (Stilt + 4 Floors), Type-V residential quarters (Stilt + 4 Floors) and Directors' Residence have been completed and Construction of Gymnasium-sports complex is completed.

Facility	Area in SQM
Main Academic Building (G+4 with basement)	13742.50
Library (G+1)	2659.13
Girls Hostel (G+5)	1007.84
Gymnasium (indoor sports hall)	1138.00

6.6.7.2. IT Infrastructure

LAN Connectivity: Institute main academic building is connected through UTP and fibre base connection. Both the campuses have LAN connectivity in the main academic building including LAB's and also in the Boy's hostel, Director's Bungalow and staff residences.

Wi-Fi/Internet facilities in the campus & Hostels: Wi-Fi is provided in the Girl's Hostel with Brovis AP in each and every floor (total 5 floors). In campus Wi-Fi is provided by JIO Reliance. In boy's hostel in both campuses internet facilities is provided via LAN connectivity (two LAN connection) in each room.

Computer based Library management: KOHA portal is being used as Library management for the circulation and entry of the new books in the Library.

Video Conferencing facility: CIFE has video conferencing facility room with CISCO products being used for the VC apart from that for virtual meetings/classes/Training Program/ Webinars zoom platform is used.

Smart Class rooms: CIFE has 4 nos. of smart class rooms. Out of which two rooms have facility of recording lectures. Smart TV has been installed in all 4 rooms which act as smart board and virtual classes can be conducted through them.

6.6.7.3. Students and Staff Amenities

- **Sporting and recreational activities at campus**: ICAR-CIFE has excellent indoor and outdoor facility for staff and students. The institute also have two full-equipped gymnasia for student's health and fitness. A gymnasium instructor and an attendant is also available for training and support. Every year, ICAR-CIFE organize sports events for maintaining a healthy competitive spirit among the students.
- Each hostel (3 no.) is having a recreation hall equipped with wall-mount television. Students are provided with 24 hours' internet through Wi-Fi or LAN connection. Elected members of student's union especially, sports secretary and cultural secretary coordinate various cultural and sports events viz., annual day, fresher's day, farewell function, celebration of festivals like Ganpati sthapana, Navratri, Pongal, Christmas, New year eve celebration, hostel day and annual sports day etc.
- **Child care:** A Women Cell is created with a dedicated room for women staff, students and research scholars to take rest, to feed baby or other emergencies. Few rooms in the hostel /International guest house have amenities such as kitchen facility, TV and Wi-Fi for international students.

- **Food services**: ICAR-CIFE has well-established hygienic and modern kitchen and dining facility in all hostels and guest house. The students mess is run by the students in cooperative manner and the quality of the food is monitored by the warden regularly. The Institute also has two canteens (one in the old and another in the new campus) to provide breakfast, lunch and evening snacks to students and staff.

- **Gender champion club:** Gender Champions are envisaged as responsible leaders who will facilitate an enabling environment within their colleges/academic institutions where students are treated with dignity and respect. Gender champions was constituted in ICAR CIFE during 2016-17 since then the club pays active role in ensuring discipline and safety of students during various programmes and activities at campus. Gender champions are representatives to talk to authorities on behalf of students for any difficulties, and to organize various activities for making students confident.

Activities of Gender champion club

Self- Defence Training to Girls' Students	**14**	As a joint initiative taken up by the Gender Champion club of ICAR-CIFE and National Agriculture Higher Education Project, "Self-defence training" for girl students of ICAR-CIFE was arranged at "Women's self-defence Centre-WSDC" in Andheri Sports Complex. This is an initiative of Shri Aaditya Thackeray & Shihan Akshay Kumar. The centre imparts self-defence training to women free of cost. Graduation Day Ceremony of "Women's self-defence centre-WSDC" organized on 29th February 2020
Online "Women Self Defence Training"	**08**	The training was of 8 sessions from 4-26 July 2020, via Zoom app. Over 500 participants attended the training. From ICAR CIFE twelve students and ten family members participated in the training. Complete practical training on self-defence using various techniques was imparted.
"Women Self Defence Training"	**30**	The training was conducted from 7 December, 2017- 5 January, 2018 which included a total of 7 sessions. A total of 30 girls had registered for the training. Training consisted of practical sessions of Judo Karate steps which can be specially used as a self- defence technique by a woman when she is in dangerous situation or when attacked by someone. The training was the mixture of "Traditional Karate and Multiple Martial Arts" steps which the women can use for their self-defence.

Entertainment avenues available at campus: Postgraduates student's association organise screening of selected movies in one of the auditoriums at Seven bungalow campus.

Placement Cell and Agri-business incubation centres are in place for giving students carrier advice and also setting up the start-up business.

6.6.8. Financial Resource Management:

6.6.8.1. Budget allocation:

Financial Year 2015-16

Head	Non Plan		Plan		NEH		TSP	
	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure
Capital	35.00	30.43	110.00	94.09	5.00	3.87	2.00	1.99
Salary	2,450.60	2,450.15	-	-	-	-	-	-
General								
Pension	253.00	233.90	-	-	-	-	-	-
Other than Pension	1,492.40	1,479.35	771.00	764.12	10.00	9.97	10.00	10.00
TOTAL :	**4,231.00**	**4,193.83**	**881.00**	**858.21**	**15.00**	**13.84**	**12.00**	**11.99**
Loans & Advances	12.00	6.00	-	-	-	-	-	-
Revenue Generated	**93.86**	**-**	**-**	**-**	**-**	**-**	**-**	**-**

Financial Year 2016-17

Head	Non Plan		Plan		NEH		TSP	
	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure
Capital	31.00	25.70	125.00	122.43	10.00	9.77	-	-
Salary	2,604.24	2,602.29	-	-	-	-	-	-
General								
Pension	419.35	419.16	-	-	-	-	-	-
Other than Pension	1,303.41	1,278.93	680.00	673.77	11.00	10.99	7.50	7.50
TOTAL :	**4,358.00**	**4,326.08**	**805.00**	**796.20**	**21.00**	**20.76**	**7.50**	**7.50**
Loans & Advances	10.74	9.18	-	-	-	-	-	-
Revenue Generated	**70.58**							

Financial Year 2017-18

Head	Other than NEH / TSP / SCSP		NEH		TSP		SCSP	
	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure
Capital	171.25	141.94	-	-	-	-	-	-
Salary	3,020.60	2,985.79	-	-	-	-	-	-
General								
Pension	550.00	474.88	-	-	-	-	-	-
Other than Pension	2,225.00	2,217.96	6.00	5.93	11.00	9.52	-	-
TOTAL :	**5,966.85**	**5,820.57**	**6.00**	**5.93**	**11.00**	**9.52**	**-**	**-**
Loans & Advances	4.00	2.50	-	-	-	-	-	-
Revenue Generated	**75.62**							

Financial Year 2018-19

Head	Other than NEH / TSP / SCSP		NEH		TSP		SCSP	
	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure
Capital	277.00	274.79	-	-	-	-	52.93	25.54
Salary	3,220.60	3,219.94	-	-	-	-	-	-
General								
Pension	2,720.00	2,684.11	-	-	-	-	-	-
Other than Pension	2,288.00	2,285.14	5.00	4.65	27.00	26.26	184.00	184.00
TOTAL :	**8,505.60**	**8,463.98**	**5.00**	**4.65**	**27.00**	**26.26**	**236.93**	**209.54**
Loans & Advances	28.00	0.50	-	-	-	-	-	-
Revenue Generated	**105.34**							

Financial Year 2019-20

Head	Other than NEH / TSP / SCSP		NEH		TSP		SCSP	
	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure	R.E.	Expenditure
Capital	216.44	215.83	-	-	-	-	54.50	54.47
Salary	3,333.11	3,317.85	-	-	-	-	-	-
General								
Pension	2,679.62	2,664.10	-	-	-	-	-	-
Other than Pension	2,510.89	2,510.65	6.35	6.35	29.00	27.33	190.01	190.00
TOTAL :	**8,740.06**	**8,708.44**	**6.35**	**6.35**	**29.00**	**27.33**	**244.51**	**244.47**
Loans & Advances	-	-	-	-	-	-	-	-
Revenue Generated	**94.10**							

6.6.8.2. Finance Committee

CIFE does not have in-house finance committee. ICAR finance committee will allocate the budget and monitor the expenditure and other finance related activities.

6.6.8.3. Internal Resources Generation

Years	Revenue Generation	Amount in Rupees
1	2016-17	70,58,438.00
2	2017-18	75,61,982.80
3	2018-19	1,05,34,182.00
4	2019-20	94,10,370.00
5	2020-21	53,94,880.00
	TOTAL :	**3,99,59,852.80**

6.6.8.4. External Funding

The institute has generated an amount of Rs. 50.92 crores during the last five years through external funding projects. The details of the externally-funded projects for the last five years are given below.

Year	Externally-funded research Projects	Total Budget	Funding agency
2015-16	Fisheries Enhancement in Maharashtra (District: Thane) through seed production and pen culture in rivers Vaitarana and Bhatsa for livelihood and nutritional security among the tribal community	130.19 lakhs	National Fisheries Developmental Board (NFDB)
2015-16	National surveillance programme for aquatic animal diseases	149.70 lakhs	NFDB
2015-16	Studies on present status of marine radioecology and biodiversity at Tarapur coastal sites	170 lakhs	Board of Research Nuclear Sciences, New Delhi
2015-16	Studies on marine radioecology and biodiversity arounf nuclear power plot sites of Jaitapur	77.35 lakhs	Board of Research Nuclear Sciences, New Delhi
2015-16	Studies on present studies of marine radioecology and biodiversity at Kalpakkam coastal sites	208.35 lakhs	Board of Research Nuclear Sciences, New Delhi
2015-16	Baseline riverine radioecology and biodiversity studies around the	202 lakhs	Board of Research Nuclear Sciences, New

	proposed NPP site at Jabalpur, Madhya Pradesh		Delhi
2015-16	Optimum utilization of locally available plant-sized ingredients for aqua feed through electron beam irradiation	18.035 lakhs	Board of Research Nuclear Sciences, New Delhi
2015-16	Stock Characterization, captive breeding, seed production and culture of Hilsa, *Tenualosa illisha*	139.83 lakhs	NASF, New Delhi
2015-16	Defence genes of tiger shrimp *(Penaeus monodon)* with respect to bacteria (*Vibrio harveyi*) and white spot (WSSV) infection	71.45 lakhs	NASF, New Delhi
2015-16	Capture and removal of ammonia from fish processing waste water by using archaea	238.4 lakhs	National Agricultural Science Fund (NASF), New Delhi
2015-16	All India Network Project on Fish Health	40.0 lakhs	ICAR-Network Project
2015-16	Improvement of safety and quality of transglutaminase mediated restructured fish products by radioactive phenolics and terpenoids	58.47 lakhs	Department of Biotechnology (DBT), New Delhi
2015-16	Utilization of detoxified rubber seed cake in aqua feed	19.92 lakhs	DBT, new Delhi
2015-16	Three months national training in molecular biology and biotechnology for fisheries professionals	66.29 lakhs	DBT, New Delhi
2015-16	Development of nanodelivery system of DNA based RNAi vaccine against WSSV in tiger shrimp *Penaeus monodon*	67.11 lakhs	DBT, New Delhi
2015-16	Development of optical fibre based bacterial biosensors for heavy metal production	44.08 lakhs	DBT, New Delhi
2015-16	Development of bivalent vaccine for protection of *Labeo rohita* to bacterial pathogens *Flavobacterium columnare* and *Edwardsiella tarda*	32.50 lakhs	ICAR-CRP on Vaccines, New Delhi
2015-16	Development of nano sized delivery systems for nutraceuticals in aqu-feed	45.00 lakhs	ICAR-CRP on Nanotechnology
2015-16	Fish Gelatin based nano-composite film for food packaging	15.00 lakhs	ICAR-CRP on Nanotechnology
2015-16	Development of functional fish sausage for promoting entrepreneurship	43.30 lakhs	Department of Science and technology (DST), New Delhi
2015-16	Conservation of Indian Mega fish: Molecular taxonomy and phylogeography of mahseer fishes of	25.86 lakhs	DST, New Delhi

	India		
2015-16	Developing an aquaponics and spirulina eco-park to demonstrate sustainable models of urban aquaculture and agriculture	25.00 lakhs	Mumbai Metropolitan Region: Environment improvement Society, Mumbai
2015-16	Biochemical composition of Bombay duck and the functional properties of its proteins	21.60 lakhs	Ministry of Food Processing Industries, New Delhi
2015-16	Pilot Scale demonstration of value added products from surimi	44.74 lakhs	RGSTC, Mumbai
2015-16	Accelerated salt fermentation of Indian Mackerel using fermentation microflora	37.00 lakhs	RGSTC, Mumbai
2015-16	Supply demand analysis of professional fisheries human capital in India	21.50 lakhs	Extramural Research, ICAR
2015-16	Assessment of extent of community dependence on coastal ecologically sensitive areas (ESAs) in Achra-Ratnagiri, Maharashtra	13.15 lakhs	National Centre for Sustainable Coastal Management, Chennai
2016-17	Development of DNA barcodes for Indian marine crustaceans with commercial and conservation significance	9.5 lakhs	National Centre for Sustainable Coastal Management, Chennai
2016-17	Novel molecular approaches for advancing prediction and mitigation of disease outbreaks in aquaculture for small scale farmers	113.456 Lakhs	DBT, New Delhi
2016-17	Development of pelleted diet for *Labeo rohita* and *Clarias batrachus* using *Acranthes aspera* and evaluation of its immunostimulatory properties in pond culture system	17.21 lakhs	DBT, New Delhi
2016-17	Feasibility study of using solar powered cool boxes to improve shelf life and hygiene of fish sold in retail markets in Mumbai	15.34 lakhs	Rajiv Gandhi Science and Technology Commission, Mumbai
2016-17	DNA barcoding and domestication of ornamental fishes of the Chindwin and Barak-Surma, Meghana river basins of Northeast India	24.648 Lakhs	DBT, New Delhi
2016-17	Captive maturation, breeding and culture of some indigenous ornamental fishes of Assam	65.90 lakhs	DBT, New Delhi
2017-18	Development of energy efficient and environmental protective aquaculture technologies for degraded soils	1994.80 lakhs	World Bank, NAHEP
2017-18	Molecular screening, cell culture based isolation and characterization of finfish	98.683 lakhs	DBT, New Delhi

	and shellfish viruses and establishment of National Repository		
2017-18	Biomass production and downstream processing of Spirulina (*Arthrospira*) platensis for high-purity colorant grade phycocyanin extraction	38.92 lakhs	DBT, New Delhi
2017-18	Identification of most suitable population of pearl producing freshwater bivalves of North East India through a molecular approach	22.00 lakhs	DBT, New Delhi
	Protein expression profiling of *Labeo rohita* using quantitative proteomics	57.128 lakhs	DBT, New Delhi
2017-18	Molecular and genetic characterization of selected important ornamental fishes of North East India	23.45 lakhs	DBT, New Delhi
2018-19	Network project on assessment of AMR in micro-organisms associated with fisheries and aquaculture in India	30.00 lakhs	ICAR- Network
2018-19	Network project on ornamental fish breeding and culture	160.23 lakhs	ICAR- Network
2018-19	Development of dual combination vaccine for protection of *Labeo rohita* to bacterial pathogens *Flavobacterium columnare* and *Edwardsiella tarda*	145.00 lakhs	ICAR- Network
2018-19	Agri-Business Incubation (ABIs) Component II on Incubation Fund under NAIF	10.00 lakhs	ICAR- Network
2018-19	Dissemination of pilot scale results of inland saline aquaculture in different locations of Haryana and Maharashtra	35.00 lakhs	ICAR- Network
2018-19	Establishment of Amur common carp /Jayanti rohu hatchery and seed production unit for quality fish seed dissemination.	25.00 lakhs	NFDB
2018-19	Development of nursery-based system for Pacific white shrimp, *Litopenaeus vannamei*, using ground inland saline water and assessment of physiological and immunological parameters in single phase and two phase farming system	57.00 lakhs	DBT, New Delhi
2019-20	Understanding molecular basis of host-pathogen environment interaction of Tilapia lake virus disease	86.33 Lakhs	NASF
2019-20	Characterization of mucosal immunoglobins in tilapia and development of ELISAfor diagnosis of Tilapia Lake Virus (TiLV) Infection	37 lakhs	DBT, New Delhi

6.6.8.5. Financial Powers Delegation to Deans/Heads

The list of financial powers delegation is attached as annexure 27.

6.6.9. Accomplishments

6.6.9.1. Awards for the University

Year	2016-2017	2017-2018	2018-2019	2019 (Apr-Dec)	2020 (Jan-Dec)
Regional	01				
National	05	01	05	01	-
International	-	--	-	-	-

Details of State/National/International Award /Best Teacher/Thesis/ any National Award

National

S.No.	Name	Name of award	Awardee	Year
1.	ICAR-CIFE, Mumbai	Rajshri Tandon Rajbhasha Award	ICAR	2016-17
2.	ICAR-CIFE, Mumbai	Award for Cashless ICAR Institute	ICAR	2016-17
3.	ICAR-CIFE, Mumbai	Lifetime Achievement Award" for the Best Green Campus	NICER-National Institute of Cleanliness Education and Research	2016-17
4.	ICAR-CIFE, Mumbai	Letter of appreciation from the Hon'ble Chief Minister of Punjab, Shri Parkash Singh Badal for research, demonstration and extension activities carried out on the "Technology for the commercial marine shrimp culture in inland saline waters"	Hon'ble Chief Minister of Punjab	2016-17
5.	Dr. Gopal Krishna, Director, ICAR-CIFE	100 Most Influential Directors of India (Education) Award	World Education Congress	2016-2017
6.	ICAR-CIFE Mumbai	Appreciation Letter for the Great Services towards developing self-help group and women Entrepreneurs	Shri. Devendra Fadnavis Honorable Chief Minister of Maharashtra	19 January, 2018
7.	Director CIFE, Mumbai	'Appreciation Letter' for commendable work carried out in Punjab	Dr. Madan Mohan, Director & Warden of Fisheries, Government of Punjab	2018-2019
8.	Director CIFE, Mumbai	'Award of Appreciation'	Agri-Tech Summit 2018	2018-2019

9.	ICAR-CIFE, Mumbai	Appreciation letter for conducting training programme for tribal fisher folk of Khunti district, Jharkhand	Directorate of Fisheries, Jharkhand	2018-2019
10.	ICAR-CIFE Regional Centre, Kolkata	Letter of Appreciation for training programme on Integrated Aquaculture in Dhurva, Ranchi	Directorate of Fisheries, Jharkhand	2018-2019
11.	ICAR-CIFE Regional Centre, Rohtak	Letter of Appreciation for enhancement of shrimp (*Litopenaeus vannamei)* production and its technology in Punjab	Dr. Madan Mohan, Director and Warden of Fisheries, Punjab	2018-2019
12.	Director CIFE, Mumbai	'Certificate of Appreciation'	International Conference organized by the College of Fisheries, Dr. Balasaheb Sawant Konkan Krishi Vidyapeeth, Dapoli and Interdisciplinary Society for Advancement of Agricultural Sciences and Technology	17-20 January 2019

Regional

S.No.	Name	Award	Awarded by	Date
1.	ICAR-CIFE, Mumbai	Special Award, 2015-16, for best work done in Hindi.	'Ashirwad' a Socio-cultural organization of Mumbai	2016-17

6.6.9.2. Accreditation Report from ICAR/Other Agencies

Yes, the institute and its degree programmes were accredited by ICAR and it was valid from 2016- March 2021. Recommendation: accreditation was granted.

6.6.9.3. Inter Institutional Standings

During 2017-18, CIFE bagged 35th rank among all the Agricultural Universities of India. In the year 2018-19, CIFE stands 7th rank and 2019-20, CIFE bagged 16th rank among all the Agricultural Universities of India. ICAR-CIFE has been filling the university data under overall category and during 2020, the university stands 96th rank among top 150 Government Universities during 2019-20.

6.6.9.4. Socio-economic Impact

ICAR-CIFE is playing a pivotal role in upliftment of social status of the farmers. The details of technologies are given below.

Penaeus vannamei culture in Inland saline water: Around 245 farmers and 3450 labourers have been benefitted by this technology. The technology of Inland saline aquaculture (ISA) has benefitted farmers tremendously in the states of Haryana, Punjab, Rajasthan, UP and Delhi. The technology on value added fish products has given rise to several women SHGs and young entrepreneurs.

Mobile app m-Jhinga developed by ICAR-CIFE has been uploaded by more than 1000 shrimp farmers who are using the app for consultancies. Farmers adopted technology demonstrated by RRTC Motipur (biofloc technology and pond based aquaculture) and they are constantly practicing the same. Three and five-time increase in productivity and income achieved in pond culture through technical intervention at Motipur centre.

6.6.9.5. International Collaboration

International research project

ICAR CIFE is a partner in one International Consortium Project titled '**Novel molecular approaches for advancing prediction and mitigation of disease outbreaks in aquaculture for small scale farmers'.** This Consortium funded by DBT, GoI and BBSRC, U.K. (Biotechnology and Biological Sciences Research Council, U.K.) includes other institutions like Centre for Environment, Fisheries and Aquaculture Science, U.K.; University of Exeter, U.K.; University of St Andrews, U.K.; World Fish Malavi, Bangladesh; Tamil Nadu Dr. J. Jayalalithaa Fisheries University; Bangladesh University, etc.

List of Collaborating Institutions

International Institutions	
Department of Agriculture and Livestock of the State of Rio Grande do Sul-Seapi, Brazil	Centre for Environment, Fisheries and Aquaculture Science, UK
Michigan State University, USA	University of Stirling, UK

6.6.9.6. Fund Raising through CSR

ICAR-CIFE has developed the package of practices to culture the fish in unused water tanks with the collaboration of Bosch Pvt Ltd under CSR.

6.6.9.7. Alumni Support

- The University has an active alumni association comprising of alumni from amongst overseas laboratories, corporate sector, Central and State Departments, Research Institutes/Colleges/ Universities/ NGOs, entrepreneurs and students, all of whom have been listed as an alumni directory on the website https://www.cife.edu.in/cife-alumni-association.html (updated during the Alumni meet during 2017).

- The association has raised Rupees 5,61,252.00/- till date through contribution of students towards Alumni Association till date.
- The Alumni Association has associated in conducting several programs as listed below :
    1. CIFE Industry day 28th Feb 2015
    2. CIFE Wave: Alumni meet 4th March 2017
    3. Third Students Convention on Next Generation Aquaculture: Panacea to Employment Challenges on 25th March 2019

6.6.10. Certificate (Application when SSR in submitted for Programmes, Colleges and Agricultural University).

I, the Registrar of the Agricultural University, **Dr. A. Pavan Kumar** hereby certify that the information contained in the sections 6.4, 6.5 and 6.6.1 to 6.6.9.7 are furnished as per the records available in the University.

A. Pavan Kumar

Signature of the Registrar

ICAR-Central Institute of Fisheries Education

(University under Sec.3 of UGC Act 1956)
Indian Council of Agricultural Research
Panch Marg, Off Yari Road, Andheri (West), Mumbai - 400061, India