

1. Name and Designation of the Applicant:

Father's Name:

Central Institute of Fisheries Education

(Deemed to-be University)
(Indian Council of Agricultural Research)
Panch Marg, Off Yari Road, Versova, Mumbai – 400 061
Tel: 022 – 26361446 / 447 / 448 Fax: 022 – 26361573
Mobile: 09869120627, E-mail: npsahu@cife.edu.in



Recent

Subject

Duration

Photograph

Application for ICAR - Post Doctoral Fellowship (ICAR-PDF)

(LAST DATE TO RECEIVE THE APPLICATION: July 16, 2021)

1 Graduation 2 Masters 3 Doctoral 4 Any other Degree/Diploma 5 Post-doctoral Employment Status: S. No. Designation Pay scale Nature of work University/Institution Period		t Telephone N	lo. and E-m	ail:				
S.No. Degree/Diploma Year Major field University/ Institution Division/ Distinction	e an	nd Place of Bi	rth:					
Institution Distinction Graduation Masters Doctoral Any other Degree/Diploma Post-doctoral Employment Status: S. No. Designation Pay scale Nature of work University/Institution Period	dem	ic & Professio	onal Qualifi	cations:				
2 Masters 3 Doctoral 4 Any other Degree/Diploma 5 Post-doctoral Employment Status: S. No. Designation Pay scale Nature of work University/Institution Period	lo.	Degree/Dip	oloma Y	/ear	Ma	jor field		Division/ Distinction
3 Doctoral 4 Any other Degree/Diploma 5 Post-doctoral Employment Status: S. No. Designation Pay scale Nature of work University/Institution Period		Graduation						
4 Any other Degree/Diploma 5 Post-doctoral Employment Status: S. No. Designation Pay scale Nature of work University/Institution Period		Masters						
Degree/Diploma 5 Post-doctoral		Doctoral						
Employment Status : S. No. Designation Pay scale Nature of work University/Institution Period			loma					
S. No. Designation Pay scale Nature of work University/Institution Period		Post-doctor	al					
		ment Status :	1	Nature of wo	rk	University	/Institution	Period (From-To)
			-			-		
1		lo.	demic & Profession Degree/Dip Graduation Masters Doctoral Any other Degree/Dip Post-doctor Dloyment Status:	demic & Professional Qualification Graduation Masters Doctoral Any other Degree/Diploma Post-doctoral Post-doctoral Cloyment Status:	demic & Professional Qualifications: Oo. Degree/Diploma Year	demic & Professional Qualifications: Oo. Degree/Diploma Year Ma	demic & Professional Qualifications: Oo. Degree/Diploma Year Major field	demic & Professional Qualifications: Jo. Degree/Diploma Year Major field University/Institution

Sponsored by

Institution/Country

Training

S.No.

1

9.	Details	of t	he R	lesearch	Pro	jects	handle	e d :
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S.No.	Name of the Project	Funding agency	Duration and amount	PI/Co-PI/ Associate
1				
2				

10. Achievements:

(a) Research and Extension

S. No.	Item*	Details in quantifiable terms. (Indicate whether applicant is a Developer, Codeveloper or Associate)
1.	Product/Patent/ Variety/ Software, etc. developed	
2.	New Concept / Methodology/ Process/ Model developed	
3.	Advancement in Science/Technologies generated and its potential value/ Impact in Fisheries Sciences	

^{*}Documentary evidence should be enclosed for the patents/ copyright, adoption of products and technologies and their impact on livelihood of farmers/commercial value and acceptance by clients/stakeholders, etc.

(b) Teaching

S.No.	Item	Detail	Year (s)
1.	Courses taught and number of classes taken in each course		
2.	M.Sc./Ph.D. Students Guided as Chairman		
3.	New Course(s) introduced or course(s) revised /Design of innovative course curriculum		
4.	Success of students (in terms of their recognition for medals/awards)		
5.	Books/Book chapters/Review paper/Manuals/Bulletins/ Quality reference material/Conference papers, etc.		
6.	Organization of Training/Summer or Winter School		

(c)	Please state the most significant achievements in bullet form (Not more than 300 words):

11. (i). h-index and i-10 index:

(ii). List of Publications (having NAAS Score of >6.0):

S. No.	Name of Authors	Year of publication	Title of paper	Journal, Volume, Issue, page nos.	NAAS Journal ID (2019)	NAAS Score (2019)	Number of citations based on ISI Science Citation Index
1.							
2.							
3.							

12. Awards and Honours received:

S. No.	Name of the Awards/ Honours	Year	National/ International	Academy/ Institutional/ Professional Society
1.				
2.				
3.				

- **13. Proposed Research plan** (highlight the objectives, outline of the proposed research work and its utility to the parent Institute):
- **14.** Whether a consent letter of approval of research plan from the mentor from CIFE, Mumbai including a declaration regarding availability of adequate infrastructural facilities and equipment's to execute the work plan is enclosed? : **Yes/No**

15. Any other information:

This is certified that all the information:	furnished by me is	correct to the best o	f my knowledge and
belief.	•		

DI.	D. ((G) 4 CA 19 4)
Place:	Date:	(Signature of Applicant)

Endorsement by the Director of ICAR Institute/Vice-Chancellor of Agricultural University under the ICAR-AU system in support of the proposed research work plan:

"Certified that	the	infor	matio	ı give	n b	y the	candi	date i	n th	iis	application	has	been	veri	fied	and	fully
authenticated a	and	that	there	are r	o a	liscip	linary	actio	ns e	or	proceedings	s pe	nding	or	cont	empl	lated
against the can	ıdida	te".															

Signature & Seal

Enclosures:

- 1. Application in original duly forwarded and complete in all respect
- 2. One set of reprints of 5 most important publications
- 3. Documentary proof for all the claims made in the application

Marking Scheme for evaluation of applications

Allocation of marks for different criteria (Total 100 marks)

S.No.	Criteria	Marks					
1	Significant research achievements in terms of New Concept / Methodology/	30					
	Process/ Model, Products, Technology, patents, variety, Copyrighted						
	software/trademark/IP protection, etc.*						
2	Quality of research proposal	10					
3	Significant teaching achievements	10					
4	Research Publications	30					
5	Books, manuals, bulletins, quality reference material	5					
6	Awards and Honors	5					
7	Overall candidature	10					
Weigh	Weightage: 80% for achievements in research, teaching, academics, etc. & 20% for Interview						

Products, variety, patents and methodology, technology, etc. developed* (30 marks)

- (i) Developer of each commercialized product/technology/ each plant variety Gazette Notified by the CVRC/ animal, fish, bird breed (strain) authenticated by accredited body (national level) (5 marks each).
- (ii) Copyrighted software/trademark/IP protection, etc. (5 marks each)
- (iii) Patents granted with details of Patent Number (5 marks for each patent).
- (iv) New Concept / Methodology/ Process/ Model developed and its impact in agricultural sciences (5 marks each)

Teaching achievements (10 marks)

- (i) Courses taught and number of classes taken in each course (5 marks, if taken at least 50 classes in a year for 5 years).
- (ii) M.Sc. /M.Tech/Ph.D. Students Guided as Chairman (1.0 mark for M.Sc./M.Tech. and 2.0 mark for each Ph.D. student guidance as Chairman).
- (iii) New Course(s) introduced or course(s) revised /Design of innovative course curriculum (0.50 mark each activity).
- (iv) Success of students in terms of their Selection in ARS, Medals, Awards etc. (0.5 mark each).
- (v) Organization of Training/Summer or Winter School (0.5 mark each).

Publications (35 marks)

- (i) Marks will be given according to the NAAS score of Journals (NAAS Score 20 = 10 marks). Each publication will be given a maximum of 10 marks with a cap of maximum 30 marks. *Attach one set of reprints of the 5 most important publications listed in the application.*
- (ii) First author and Corresponding author will get full marks in a publication and rest of the authors 75% marks.
- (iii) Books/book chapters/review paper/Manuals/Bulletins/ Quality reference material/Conference papers, etc. (0.5 mark each).

Awards and Honors (5 marks)

- (i) Awards by ICAR, CSIR, DST, DBT, NRDC, National Science Academies, etc. (2.5 marks each).
- (ii) National and International level Professional Society and Academy (not covered above) Awards/Recognition/Office bearers positions (1 mark each).

^{*}Developer (one) shall be awarded 100% marks, Co-developers (max. two) 75% marks and associates 50% marks.

Eligibility Criteria:

- 1. The applicant should be an Indian citizen.
- 2. The candidate must have obtained Ph.D. degree (with course work) from a recognized University and should be working (in service) in an institution under ICAR-AU System.
- 3. He/she should have completed minimum three years of service (including clearance of probation) in regular capacity as a Scientist or equivalent in ICAR-AUs system working in any area of Teaching/Research/Extension.
- 4. The upper age limit for the fellowship is 40 years on the last date of submission of application. Age relaxation of five years will be given to candidates belonging to SC/ST/OBC/Physically Challenged and Women candidates.
- 5. ICAR-PDF can be availed only once by a candidate in his/her career.
- 6. The selected fellows are not allowed to work with their Ph.D. Guides/Coguides.
- 7. Mentor must hold a regular academic/research position in concerned ICAR-DU having a Ph.D. degree and should be a faculty member.
- 8. The mentor must have a minimum of 10 years of service experience in the relevant area of work with the experience of guiding minimum of 2 Ph. D. students.
- 9. A Mentor shall not have more than two ICAR-PDF fellows at any given time.
- 10. The candidates of ICAR-DUs are not eligible to apply for Post-Doctoral Fellowship in the same ICAR-DU.

GuidelinesFor ICAR Post- Doctoral Fellowship (ICAR-PDF)



(2020-21)

INDIAN COUNCIL OF AGRICULTURAL RESEARCH EDUCATION DIVISION KRISHI ANUSANDHAN BHAVAN II NEW DELHI 110 012

Guidelines for ICAR Post- Doctoral Fellowship (ICAR-PDF)

The ICAR Post- Doctoral Fellowship (ICAR-PDF) is a new programme approved under the ongoing 'Strengthening and Development of Higher Agricultural Education in India' Scheme of Agricultural Education Division (ICAR) to support the bright and talented researchers to pursue Post- Doctoral programme to build capacity in frontier areas of national interest in Agriculture and Allied Sciences.

1. Objectives

- 1.1 Identify and support motivated young researchers for conducting research in frontier areas of agriculture and allied sciences to build the national capacity.
- 1.2 Provide them a platform to develop as an independent researcher capable of initiating a new programme in nationally important priority areas under the supervision of a mentor.

2. Number of Fellowships

Ten per year for ICAR-IARI Pusa, New Delhi and five each per year for ICAR-IVRI Izatnagar, ICAR-NDRI Karnal & ICAR-CIFE, Mumbai respectively.

3. Eligibility Criteria

- 3.1 The applicant should be an Indian Citizen.
- 3.2 The candidate must have obtained Ph.D. degree (with course work) from a recognized University and should be working (in service) in an institution under ICAR-AU System.
- 3.3 He/she should have completed minimum three years of service (including clearance of probation) in regular capacity as a Scientist or equivalent in ICAR-AUs system working in any area of Teaching/Research/Extension.
- 3.4 The upper age limit for the fellowship is 40 years on the last date of submission of application. Age relaxation of five years will be given to candidates belonging to SC/ST/OBC/Physically Challenged and Women candidates.
- 3.5 ICAR-PDF can be availed only once by a candidate in his/her career.
- 3.6 The selected fellows are not allowed to work with their Ph.D. guides/Co-guides.
- 3.7 Mentor must hold a regular academic/research position in concerned ICAR-DU having a Ph.D. degree and should be a faculty member.
- 3.8 The mentor must have a minimum of 10 years of service experience in the relevant area of work with the experience of guiding minimum of 2 Ph. D. students.
- 3.9 A Mentor shall not have more than two ICAR-PDF fellows at any given time.
- 3.10 The candidates of ICAR-DUs are not eligible to apply for Post-Doctoral Fellowship in the same ICAR-DU.

4. Mode of Application & Selection

- 4.1 The application shall be invited by the concerned ICAR-DU once in a calendar year.
- 4.2 The host institutes shall identify the research areas, mentors and laboratories where the PDF will work. The thrust areas for research are required to be notified at the time of advertising the PDF slots.
- 4.3 The applicant shall highlight the objectives, outline of the proposed research work and its utility to the parent Institute.
- 4.4 Along with application, the applicants must furnish a letter of approval of research plan from the mentor including a declaration regarding availability of adequate infrastructural facilities and equipments to execute the work plan. The work plan should be endorsed by the respective Director of ICAR Institute/Vice-Chancellor of Agricultural University under the ICAR-AU system.
- 4.5 Each Mentor will give maximum of two consent letters for each cycle/calendar year.
- 4.6 The selection will be based on screening and recommendations by a Selection Committee comprising of the following:
- *i.* Director of the concerned ICAR-DU

Chairman

- ii. Joint Director Research or equivalent of the concerned DU Member
- iii. DDG (Agril. Edn.) or his representative

Member

iv. Two Subject Matter Specialists (not below the rank of Prof./ Prin. Sci.) from outside the host institute. Member

v. Joint Director (Academic) or equivalent

Member Secretary

- 4.7 The candidates will be evaluated based on parameters/weighted scale by taking into account the relevance of the area of study, the proposed research plan, academic records, achievements and their past work experience. The applicants will be called for personal interview/presentation of research plan by the Selection Committee.
- 4.8 Once selected, the candidate must register for the programme as per the schedule, date and time intimated by the respective ICAR- DU. In case of delay, the offer will get terminated automatically and no separate communication towards cancellation will be issued. At time of joining he/she has to give an undertaking as per the format at **Appendix-1**.
- 4.9 During the programme, the awardees shall not hold any other responsibility/ post/position/work and need to devote his/her full time for the proposed research work.

5. Nature & Duration of Support

- 5.1 The fellowship is purely a temporary assignment and is tenable for a period of one year.
- 5.2 The host institution should provide necessary administrative, infrastructural and laboratory facility support to the awardees. In case, suitable accommodation is not available at the host institution, awardees shall have to make their own arrangements in this regard.

6. Amount and Terms of Fellowship

6.1 The fellows will be entitled to receive the grants through concerned ICAR-DUs as under:

Budget Head	Amount
Fellowship	Rs. 75,000/- per month (consolidated)
Research Grant	Rs. 2,00,000/-

- 6.2 The fellowship amount (Rs.75,000/- p.m. consolidated) would be over and above the salary amount received by the awardees and the amount would be taxable as per the Govt. of India rules.
- 6.3 The research grant can be used for the purchase of minor equipments, consumables, contingencies and domestic travel. There is no provision for providing contractual manpower (RA/SRF/YP) support under this scheme. The expenditure on purchases of minor equipments, consumables, contingencies and domestic travel, shall be incurred after following codal formalities and within the ambit of relevant rules.
- 6.4 The fellowship along with research grant will be released in two instalments.
- 6.5 The fellows are not eligible to receive any other fellowship from any Government or Non-Governmental source during the tenure of the fellowship.
- 6.6 The fellow has to serve the sponsoring institution at least for one year after completion of PDF and to this effect he/she has to execute a bond (specimen of bond at **Appendix-2**) compulsorily at the time of joining in the DU.

7. Leave Rules

- 7.1 ICAR-PDFs will be entitled to avail leave as per GOI rules of the host institution. Participation in Scientific Conferences/ Seminars/Symposia/Workshops will be treated as on duty.
- 7.2 Maternity leave as per the Govt. of India instructions issued from time to time would be available to female candidates of all categories. Fellowship would not be admissible during the leave period, if the duration of leave exceeds three months.
- 7.3 The fellow must seek the consent of host ICAR-DU and may avail leave of the kind due if

he/she intends to be away from the institute/University (except for field work related to the project and Scientific Conferences/ Seminars/Symposia/Workshops).

8. Termination of Fellowship

- 8.1 If any fellow wishes to terminate the fellowship, he/she shall inform the ICAR through the mentor and host institute immediately. The implementing institute should not incur any expenditure from the date of termination of the project or the date of resignation of the Post Doctoral Fellow.
- 8.2 ICAR reserves the right to terminate the Fellowship at any stage if it is convinced that satisfactory progress is not being made by the awardees or the grant has not been utilized properly.
- 8.3 If the fellow leaves within one month of joining, the position can be filled from the panel of waitlisted candidates.

9. Project Monitoring

- 9.1 The progress of the ICAR PDF vis-à-vis projections made and targets set in the work plan of the approved projects shall be quarterly reviewed by an Institute level Committee comprising Director of the ICAR-DU, concerned Head of the Department and Mentor of the ICAR-PDF.
- 9.2 Half-yearly progress of the project will be reviewed by the same Selection Committee for ICAR-PDF. In case of satisfactory report, Council shall release the 2nd instalment of grant.
- 9.3 The Annual Performance Appraisal Report (APAR) of the ICAR-PDF shall be made by the Mentor as Reporting Officer and be reviewed by Director of the concerned Institute/concerned authority of the University.
- 9.4 The observations/comments of the Institute Committee of the ICAR-DU where the progress of the work was presented may be invariably attached with the APAR.
- 9.5 The ICAR-PDF will be expected to publish/communicate his/her research findings in a peer reviewed journal having NAAS rating not less than 7.0. The proof of this should be submitted along with the final project report.
- 9.6 The progress of the ICAR-PDF project should invariably form a part of Annual Report of the Host Institute and final report of the project shall be uploaded on the Agricultural Education Portal.

10. General

10.1 The ICAR-PDF is expected to protect the Intellectual Property Rights generated or likely to be generated during his/her tenure. The Council will have the appropriate share on the patents/protections/knowledge generated as per the "ICAR Guidelines for Intellectual Property Management and Technology Transfer/Commercialization" as amended from time

- to time. If the fellow enters into any other IP agreement, the same will be appropriately communicated to and shared with the Council. In all publications arising out of the ICAR-PDF project, the support from the Council should be duly acknowledged.
- 10.2 For any clarification regarding the ICAR-Post Doctoral Fellowship, the Deputy Director General, Agricultural Education, ICAR, New Delhi may be contacted.
- 10.3 The Director General ICAR & Secretary DARE will be the final authority in resolving and taking decision on any situation/conflict and his decision shall be binding on all parties concerned.
- 10.4 For any dispute, the applicable law will be the Indian law under the jurisdiction of Courts in Delhi only

Undertaking by the ICAR -PD Fellow

I,,	Son/Daughter/Wife of Shri
resident of	agree to undertake the following, if I am offered the
ICAR –PDF:	
1. I shall abide by the rules and	d regulations of ICAR -PDF during the entire tenure of the
fellowship.	
2. I shall also abide by the rules,	discipline of the institution where I will be implementing my
fellowship.	
3. I shall devote full time to rese	arch work during the tenure of the fellowship.
4. I shall prepare the progres	s report for six months period and the final report after
completion of programme a	nd submit it to ICAR through the mentor/Director of the
institute for the release of fell	owship.
5. I shall submit two copies of	the consolidated progress report at the end of the fellowship
period to the University and	one soft copy to the ICAR for uploading on Agricultural
Education Portal.	
6. I further state that I shall have	ve no claim whatsoever for regular/permanent absorption on
expiry of the fellowship at the	e host institution.
Date:	Signature

SPECIMEN OF BOND FOR CANDIDATES SEEKING AWARD OF ICAR -PDF

KNOW ALL MEN BY THESE PRESENTS THAT I, resident of in the District of..... at present employed as......in the Ministry/Office of do hereby bind myself and my heirs, executors and administrators to pay to the President of ICAR Society (thereinafter called "the Council") on demand the sum of Rs.... (Rs...... only) together with interest thereon from the date of demand at Government rates for the time being in force on Government loans AND TOGETHER with all costs between attorney and client and all charges and expenses that shall or may have been incurred by the Council.

Whereas I am granted study leave by Council.

AND WHEREAS for the better protection of the Council/Government I have agreed to execute this Bond with such condition as hereunder is written:

NOW THE CONDITION OF THE ABOVE WRITTEN OBLIGATION IS THAT in the event of my failing to resume duty, or resigning or otherwise quitting service without returning to duty after the expiry or termination of the period of study leave or failing to complete the course of study or at any time within a period of **one year** after my return to duty, I shall forthwith pay to the Council/Government or as may be directed by the Council/ Government, on demand the said sum of Rs. (Rupees only) together with interest thereon from the date of demand at Government rates for the time being in force on Government loans.

NOW FURTHER THE CONDITION OF THE ABOVE WRITTEN OBLIGATION IS THAT the period of my bond mandating putting in service for the period as specified above after expiry of the study leave availed by me shall be extended by a comparable period equivalent to the aggregate period of leave of any kind availed by me during the currency of the bond period.

AND upon my making such payment, the above written obligations shall be void and of no effect, otherwise it shall be and remain in full force and virtue.

The bo	ond sl	hall in all r	espects be g	governe	ed by the	e laws of I	ndia	for the time	being in force	and	the
rights	and	liabilities	hereunder	shall,	where	necessary	, be	accordingly	determined	by	the
approp	riate	Courts of 1	India.								

Signed and d	ated this day of two thousand and
Signed and d	elivered by
In the presen	ce of
Witnesses	1 2

ACCEPTED

For and on behalf of the President of ICAR Society

Explanation: The term 'currency of bond' means the period during which the liability of the Government servant is activated and the right of the Government is alive to claim the predetermined and stipulated amounts from the Government servant who fails to discharge his obligation.

ICAR-CENTRAL INSTITUTE OF FISHERIES EDUCATION MENTORS FOR ICAR-POST-DOC FELLOWSHIP (ICAR-PDF)

S.No.	Name of the Mentors and email ID	Areas of Research
1.	Dr. Gopal Krishna,	Molecular breeding
	Director & Vice-Chancellor,	
	ICAR-CIFE, Mumbai	
	Email: gopalkrishna@cife.edu.in	
2.	Dr. K.V. Rajendran,	 Pathobiome approach for better
	Principal Scientist & HoD	understanding of disease process in shrimp
	Email: kvrajendran@cife.edu.in	aquaculture
3.	Dr. K. Paniprasad,	 Fish Immunology & Diagnostics
	Principal Scientist	 Microbiology including AMR &
	Email: kpaniprasad@cife.edu.in	Surveillance
4.	Dr. S.P. Shukla,	 Water quality management and
	Principal Scientist	wastewater utilization
	Email: spshukla@cife.edu.in	 Algae based water treatment and carbon
		sequestration technologies
5.	Dr. Gayatri Tripathi	• Fish disease diagnostic research
	Principal Scientist	encompassing embryonic stem cell
	Email: gayatrit@cife.edu.in	biology
		 Nanotoxicology and immunotoxicology
6.	Dr. N. P. Sahu,	• Nutrigenomic approach to evaluate protein
	Principal Scientist & HoD	isolates from non-edible seed
	Email: npsahu@cife.edu.in	supplemented with nutraceuticals in
		aquafeed
7.	Dr. Subodh Gupta,	 Nanotechnology
	Principal Scientist	 Pharmacology & Toxicology
	Email: sgupta@cife.edu.in	
8.	Dr. B. B. Nayak,	 Fish processing microbiology and waste
	Principal Scientist & HoD	management
	Email: nayakbb@cife.edu.in	
9.	Dr. Geetanjali Deshmukhe,	 Algal taxonomy and life history
	Principal Scientist	 Coastal ecosystems – Mangrove & Coral
	Email: dgeetanjali@cife.edu.in	reef
10.	Dr. A. K. Jaiswar,	• Taxonomic evaluation of shellfish
	Principal Scientist	resources
	Email: akjaiswar@cife.edu.in	
11.	Dr. Sanath Kumar H.,	 Seafood food safety, quality and risk
	Sr. Scientist	assessment
	Email: sanathkumar@cife.edu.in	 Antimicrobial resistance to physiology &
		molecular biology of food pathogens
12.	Dr. A. K. Balange,	• Fish Processing Technology
12.	Sr. Scientist	Value Added Product
	Email: amjadbalange@cife.edu.in	value Added Hoddet
	uniquadumge & one.oud.m	

13.	Dr. Aparna Chaudhari, Principal Scientist & HoD	Designing CRISPR edited zebrafish models for drug discovery
	Email: aparnac@cife.edu.in	
14.	Dr. N. S. Nagpure, Principal Scientist Email: nsnagpure@cife.edu.in	 Ecotoxicology and genotoxiticity Population genetics
15.	Dr. Shrinivas Jahageerdar, Principal Scientist Email: jahageerdar@cife.edu.in	 Genomic management of hatchery population Evaluation of levels of inbreeding in Indian hatchery population
16.	Dr. Rupam Sharma, Principal Scientist Email: rupams@cife.edu.in	 Nanotechnology for breeding, biomolecule delivery Toxicity studies of carbon nanotubes
17.	Dr. K. K. Krishnani, Principal Scientist & HoD Email: krishnani@cife.edu.in	 Environmental and nano- biotechnology Improved technology interventions in aquaculture and culture based fisheries for livelihood improvement of farmers
18.	Dr. A. K. Verma, Sr. Scientist Email: akverma@cife.edu.in	Recirculating aquaponics systemConjunctive use of water for aquaculture
19.	Dr. Paramita Banerjee Sawant, Sr. Scientist Email: paromita@cife.edu.in	Aquaculture of ornamental fishesFreshwater biodiversity
	Dr. Arpita Sharma, Principal Scientist Email: arpitasharma@cife.edu.in	Gender, livelihood and developmentIPR
21.	Dr. P.S. Ananthan, Sr. Scientist Email: ananthan@cife.edu.in	 Fisheries Policy & Development Planning Socio-economic / Fisheries vulnerability assessment & adaptation in climate change scenario