EIGHTH ANNUAL REPORT

2020 - 2021

Tamil Nadu Dr. J. Jayalalithaa Fisheries University

Vettar River View Campus

Nagapattinam - 611 002, Tamil Nadu

www.tnjfu.ac.in

EDITORIAL COMMITTEE

CONTENTS

PREFACE

Indian fisheries sector had seen another year of turbulence due to the COVID-19 pandemic. But the growth of this sector was not impacted much due to the microeconomics and participation of the rural population in isolated pockets. Fisheries education at the University saw a few major challenges like contactless classes and the difficulties in the adoption of COVID-19 protocols in hostels. Yet, human efforts in containing the pandemic and meeting the challenges have paid off.

With its mission of "Excelling in teaching, research and extension initiatives in fisheries sciences and to produce professionally acclaimed and socially responsible graduates achieving nutritional security and sustainable development of the fisheries sector" the university has been laying emphasis on relevant research to develop technologies addressing field issues and augmenting the quality of professional fisheries education and serving the community through empowerment.

In 2020-21, the University adopted all possible precautions on all its campuses and averted any infection among the students. The students were facilitated with online classes and evaluations. Staff members of this University also utilized their time in isolation for their self-capacity building through MOOC courses and online workshops. Technologyen abled us to come closer although there were apprehensions about the possible collapse of many systems. Above all, we learnt the way to manage the crisis and progress.

The progress in the University was not halted. As can be seen from the Report, the admission although delayed was a successful one and we could commence classes online. There were enough publications in high-order journals and research output in terms of technologies and products developed. The extension of the technology to the farmers and entrepreneurs was a challenge, which was also handled well by having online webinars and training. Thus the situation pushed us to invent new ways.

Tamil Nadu Dr. J. Jayalalithaa Fisheries University with its constituent units helped the Govt. to study the impact of COVID-19 on different sectors of fisheries. The farmers and entrepreneurs were also helped in possible ways to have their queries answered. The faculty staff strength was increased at the close of the reporting period. Young faculty staff have entered the University service. Many of the meetings were done online and therefore the expenses on the staff travel were minimal. There were more than 250 training and capacity-building (online) events attended by the staff members of this University.

The overall student strength in the University during 2020-21 was 1286. All the campuses of the University had student activities. During this period we had more than 50 good research publications in high-impact research journals. The fund inflow and the management of funds were good with the support of the staff. The infrastructure development was continuous and resulted in new buildings and facilities. By and large, I must congratulate the faculty staff members, students and support staff for their efficient cooperation and tolerance during this hard time. I wish that the future should be with more blessings from the Almighty and that we gain from all these experiences to progress ahead.

Dr. G. Sugumar
Vice-Chancellor

ACKNOWLEDGEMENTS

The Authorities of the University along with the Staff and Students are glad to acknowledge the support that has been extended by the Government of Tamil Nadu for the regular programmes of this University since 2012. The continued assistance from the Government helped the University to scale new heights.

The University is thankful to agencies and departments of the Government of India, such as Indian Council of Agricultural Research, New Delhi; Department of Biotechnology, New Delhi; Department of Science and Technology, New Delhi; National Fisheries Development Board, Hyderabad; and of State Government *viz*., Tamil Nadu State Fisheries Department, Chennai; State Planning Commission, Chennai for their funding support to carry out different research programmes. The University has also been supported by private industries such as Kemin Industries, Chennai, Natural Remedies, Bengaluru and Seq6Energy, Chennai. We are thankful for their trust and confidence on the research framework of the University. The University remembers and appreciates fish and shrimp farmers, seafood processing entrepreneurs, fish feed manufactures, small scale fisheries entrepreneurs and other stakeholders in Tamil Nadu, who have been with us during the pandemic and tough situations. The generous support received from all the connected organizations helped in improving fisheries education, research and development programmes of the University. They are thanked for their helping hand.

The officers, faculty members, researchers, students, technicians, administrative and supporting staff of our University are the personalities, who have contributed for the development of the University. They are remembered gratefully. Besides the above, there were numerous people outside this University have also done their might for the shaping of the University. They are also remembered at this juncture.

In concluding, let me register my thanks to the Respected Vice Chancellor for his encouragement and guidance to compile, collate and complete this Annual Report in its present shape. The editorial board members have spared their time, energy and knowledge in compiling and consolidating this Eighth Annual Report. I thank everyone of them.

Dr. J. Stephen Sampath Kumar
Director of Research i/c

EXECUTIVE SUMMARY

EXECUTIVE SUMMARY

The year 2020-21 witnessed unprecedented events worldwide. Mankind had confronted with a new and challenging situation due to COVID 19 infection, which was the trailing of 2019. Just before the start of the first quarter of 2020-21, the World Health Organization announced the infection due to the new Corona Virus as pandemic. India too started feeling the effect of the infection and therefore the 2020-21 started with the nationwide lockdown. The impact of pandemic spared none in the country and in the globe as a whole. Commerce, manufacturing and distribution, education, health services, livelihood and daily life in the country were impacted heavily. But, as in every distress, the way opened up for the people to face the cramping conditions and the second and third quarters of 2020-21 were productive, although not comparable with the previous years.

Tamil Nadu Dr. J. Jayalalithaa Fisheries University had also felt the heat. However, the University could continue its activities at a subtle level during the lockdown and revive in a moderate level post-lockdown. The faculty staff strength was 137 with about 400 supporting staff in the University. The faculty staff members have made themselves comfortable with the online teaching and field researchers have resumed their data collection and continued their research. All the constituent units of TNJFU have come back on track by July 2020. There were 261 training and capacity building (online) events attended by the staff members of this University. They have also participated in 44 online workshops of different durations ranging from 2 days to 5 days.

The year 2020-21 had seen a delayed admission process of undergraduate students late in Dec. 2020, due to the delay in the declaration of results of Higher Secondary examinations. The admission was quite satisfactory with 366 students admitted for the various degree programmes of the University. The PG admission was also more similar to that of previous years with 66 students admitted for the MFSc, PhD and other PG programmes in the University. The overall students strength in the University during 2020-21 was 1286. The campuses located at Thoothukudi, Ponneri, Thalainaiyeru, Vanniyanchavadi, Nagapattinam, Madhavaram, Muttukadu and Ariyaman Beach, Ramanathapuram were functioning with the regular academic programmes. The self-financing programmes of this University, B.Tech (Biotechnology), BBA & MBA (Fisheries Business Management) and B.Tech (Food Technology) also had seen enough patronage with the students. Although there were uncertain situations due to post-lockdown and with COIVID 19 ruling in certain pockets, there were no hard incidences of infection in the campuses of the University. All COVID 19 restrictions were strictly adhered to and followed in hostels and campuses.

On the research front, this year had seen publication of 59 (International 49; National 10) research papers in the high impact research journals. There were 33 research projects that were in operation, which involved Rs. 5622.45 lakhs of research grant. In this 9 research projects, including 3 industry funded projects are newly started this year and 24 projects were carried forward from the last year. During the year under report, including 4 university funded projects 12 projects were completed. The salient research findings were also documented for dissemination. For disease diagnosis, water quality testing services and quality control and monitoring, 5 state level laboratories were in operation at the University campuses.

During 2020-21, including 6 new machines/ equipment, 5 fisheries products, 2 technologies and two feeds were developed and released by the faculty staff members of this University. Besides the above, one technology was filed for patent.

While there were a few in person workshops and conferences conducted by different constituent units of the University, many events were done online with more participation from the public and researchers. In total, 81 events were done in this University during 2020-21.

On the extension front, there were 4 technical training conducted in person in which 92 persons benefitted. One radio programme was recorded and broadcasted and one exhibition was done in Feb. 2021 when the COVID 19 restrictions were relaxed. The important days earmarked for awareness creation and remembrance (about 15 days) were observed in all the constituent units of the University. Totally 1597 technical queries under 11 major topics received from the farmers and fisheries entrepreneurs have been answered by the faculty staff members of the University. Through the sale of farm produces and laboratory services at various constituent units, Rs. 33,41,818/- have been realized as revenue.

In 2020-21, Rs. 6335 lakhs of fund have been received from various sources like Govt of TN, GoI, NADP, and other funding sources. There were 29 awards and recognitions for the faculty staff members and 31 dignitaries registered their visits at different constituent units of the University.

In abstract, the year 2020-21, although had a shocking start, had a pleasant end with the new Vice-Chancellor appointed for the University. Also the University had undertaken a recruitment drive for strengthening the faculties for efficient delivery of teaching, research and extension. With about 40 constituent units including 8 campuses loaded with students, the University has emerged as one of the leading fisheries educational organizations in the country.

INTRODUCTION

INTRODUCTION 1

The Tamil Nadu Fisheries University (TNFU) was established by the Government of Tamil Nadu (Act 21 of 2012) on 19th June 2012. Then Tamil Nadu Fisheries University has been renamed as Tamil Nadu Dr J Jayalalithaa Fisheries University on 16.02.2018. The University Headquarters is located at Nagapattinam. It has three Fisheries College and Research Institutes functioning at Thoothukudi, Ponneri (near Chennai) and Thalainayeru (near Nagapattinam); one College of Fisheries Engineering at Nagapatinam; Institute of Fisheries Post-Graduate Studies, Institute of Fisheries Biotechnology Fisheries and Business School at Vaniyanchavadi, Chennai; College of Fish Nutrition and Food Technology, Madhavaram, and Paraprofessional Institute for Industrial Fish Processing Technology, Madhavaram, Chennai, Paraprofessional Institute for Industrial Aquaculture, Muttukadu, Chennai, Paraprofessional Institute for Industrial Fishing, Mandapam and Paraprofessional Institute for Aquatic Animal Health, Madhavaram, Chennai.

Apart from the above Institute, the TNJFU has five Technical Directorates:

- Directorate of Research (DR)
- Directorate of Extension Education (DEE)
- Directorate of Sustainable Aquaculture (DSA)
- Directorate of Incubation and Vocational Training in Aquaculture (DIVA)
- Directorate of Incubation andVocational Training in Fisheries (DIVF)

There are 7 centres functioning under Directorate of Sustainable Aquaculture at various places in Tamil Nadu viz., Thanjavur, Parakkai and Ganapathipuram in Kanyakumari, Mandapam, Barur in Krishnagiri, Bhavanisagar in Erode and Trichy.

A Krishi Vigyan Kendra (KVK) at Sikkal in Nagapattinam District is also of unctioning under this university. All these Colleges / Institutes and Directorates together make 40 constituent units for TNJFU at present. TNJFU provides R & D support for fisheries with a national outlook and regional focus. The University works in close liaison with different national and international human resource development and scientific agencies at various levels.

Tamil Nadu Fisheries University has the following objectives:

- To impart quality professional education in different branches of Fisheries Sciences as the University may determine
- To conduct organized research in frontier areas with the objective of developing cutting edge technologies in Fisheries Sciences
- To provide extension services like training, consultancy, project formulation to fish farmers, fisherfolk, unemployed youth and entrepreneurs in Fisheries Sciences
- To facilitate comprehensive development of Fisheries Sciences for increased contribution to State economy and set bench mark standards through appropriate interventions in Fisheries teaching, research and extension
- To generate baseline data on aquatic biodiversity and fisheries resource potential
- To generate high quality professionals in Fisheries Sciences by following Veterinary Council of India regulations as a model
- To create better opportunities for marketing and value addition of fish and fishery products
- To set up an aquatic disease diagnosis and surveillance system in the State

ORGANIZATIONAL SETUP

The organizational structure of TNJFU follows the State Agricultural Universities pattern. The policy making functions of TNJFU are managed through different bodies constituted for the purpose of education, research and extension activities as given below:

- Board of Management
- Planning Board
- Finance Committee
- Academic Council
- Research Council
- Extension Education Council
- Board of Studies

The Board of Management is the apex policy making body. The Academic Council is the academic authority of the University and shall have the control and general regulation of teaching and examination to follow the standards prescribed. The Planning Board of the University shall advice on the planning and development of the University.

The Finance Committee governs the finance and accounts of the University. The Research Councilis the policy making body of the University in research. The Extension Education Council formulates the policies and broad outlines of extension education activities to be carried out by the University in cooperation with the concerned Government Departments. The Board of Studies shall frame curricula for undergraduate and postgraduate programmes; recommend to the Academic Council for the establishment of new departments, abolition / subdivision / or otherwise reconstitution of the existing departments. The research, education and extension activities of the University are monitored and administered by the Vice-Chancellor with the assistance of Registrar, Deans, Director of Research, Director of Extension Education, Controller of Examinations, Finance Officer and Estate Officer.

ORGANOGRAM

Vice-Chancellor

Registrar

- DEAN ACADEMICS
- CE
- DEE
- DR
- DSA
- DIVF
- DIVA
- FO
- EO
- DEAN STUDENT WELFARE
- DEAN FC&RI Thoothukudi
- DEAN Dr.MGR FC&RI Ponneri
- DEAN CoFE Nagapattinam
  - EEE
- DEAN Dr.MGR FC&RI Thalainayeru
- DEAN IFPGS Chennai
- DEAN CFNFT Chennai
- DEAN FC&RI Myladi
- DEAN CFNT Thoothukudi

OFFICERS OF THE UNIVERSITY

Registrar	Dr.A.Srinivasan
Controller of Examinations	Dr. P. Jawahar
Director of Research	Dr.G.Jeyasekaran
Director of Extension Education	Dr.M. Rajakumar
Director of SustainableAquaculture, Thanjavur	Dr.J.Stephen SampthKumar
Director (i/c), TNJFU Academy Madhavaram Milk Colony, Chennai	Dr.R.Senthiladeban
Estate Officer	Er.T.Asokan (Upto 24.03.2021) Dr.M.Rajakumar (From 25.03.2021)
Finance Officer	Th.D.Ganesan (Upto 01.12.2020) Th.V.S.Anbarasu (From 02.12.2022)
Dean (Academics) (i/c)	Dr.M.Rajakumar (Upto 21.10.2020) Dr. B. Ahilan (From 22.10.2020)
Dean, Fisheries College and Research Institute Thoothukudi	Dr.B. Sundaramoorthy
Dean, Dr. MGR Fisheries College and Research Institute, Ponneri	Dr. B. Ahilan
Dean (i/c),College of Fisheries Engineering, Nagapattinam	Dr.R.Rajendran
Dean, Dr. MGR Fisheries College and Research Institute, Thalainayeru	Dr. S. Balasundari
Dean, Institute Fisheries Post Graduate Studies OMR Campus,Vaniyanchavadi, Chennai	Dr.S.A.Shanmugam (From 26.11.2019)
Dean (i/c),College of Fish Nutrition and Food Technology Madhavaram, Chennai	Dr.UshaAntony (Upto 17.01.2021) Dr. R.Senthiladeban (From 18.01.2021)
Director, Directorate of Incubation and Vocational Training in Aquaculture Muttukadu,Chennai	Dr. N. Felix
Director Directorate of Incubation and Vocational Training in Fisheries, Ramanathapuram	Dr.N.Neethiselvan

BOARD OF MANAGEMENT

Class I – Ex-Officio Members	
Dr.G.Sugumar Vice-Chancellor,TNJFU, Nagapattinam (Ex. Officio Chairman)	Ph.04365-256444 Fax.04365-256443 vc@tnfu.ac.in
Dr.K.Gopal, I.A.S. Principal Secretary to Government Animal Husbandry, Dairying, Fisheries and Fishermen Welfare Department Secretariat, Chennai -9	Ph.044-25672937 Fax.044-25677590 ahsec@tn.gov.in
Th.K.Shanmugam, I.A.S. Principal Secretary to the Government,Finance Department Secretariat, Chennai -9	Ph. 044-25671173, Fax.044-25671252 finsec@tn.gov.in
Th.S.S.Poovalingam, I.A.S. Secretary to the Government Law Department Secretariat, Chennai -9	Ph.044-25672920 Fax.044-25679403 lawsec@tn.gov.in
Th.J.Jayakanthan, I.A.S. Commissioner of Fisheries,State Fisheries Department Integrated Office Complex for Animal Husbandry and Fisheries Building,Anna Salai, Nandanam, Chennai -35	Ph.044-29510390 coffisheries@gmail.com
Dr.A.Srinivasan,Ph.D. Registrar & Member Secretary,TNJFU,Nagapattinam	Ph.04365-256432 Fax.04365-256433 registrar@tnfu.ac.in
Class II – Other Members	
Dr. S. Kannappan Principal Scientist ICAR-Central Institute of Brackish Water Aquaculture Chennai -28	Ph: 044-24618817 Fax:044-24610311 kannappan.s@icar.gov.in
Th.A.Velayutham Ayyampettai,Cuddalore	Mobile: 9443182188 velayuthamathi@gmail.com
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Tmt. V.S. Kusalakumari Joint Secretary, Bharathi Seva Sangam, Thiruvarur	Mobile : 9942985621 kulasakumari63@gmail.com
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Thiru S.Pavunraj Member of Legislative Assembly, Poompuhar, Tharangampadi T.K,Nagapattinam	Mobile :9443574056
The Chief Executive Officer, National Fisheries Development Board, Department of Animal Husbandry Dairying and Fisheries Ministry of Agriculture, Government of India Hyderabad – 500052	Ph.040-24015553 Fax.040-24015568/040-24015552 info.nfdb@nic.in /cenfdb@gmail.com

ACADEMIC COUNCIL

Class I–Ex-Officio Members		
Chairman	Dr.G.Sugumar Vice-Chancellor TNJFU, Nagapattinam	Ph:04365-256444 Fax:04365-256443 9486553374 vc@tnfu.ac.in
Member Secretary	Dr.A.Srinivasan Registrar TNJFU, Nagapattinam	Ph.04365-256432 Fax.04365-256433 9443032439 registrar@tnfu.ac.in
Members (Class – I Ex-officio Members)	Dr.K.Gopal, I.A.S. Principal Secretary to Government Animal Husbandry, Dairying and Fisheries Department Secretariat, Chennai – 600 009	Ph.044-25672937 Fax.044-25677590 ahsec@tn.gov.in
	Th. J.Jayakanthan,I.A.S., Commissioner of Fisheries,State Fisheries Department Integrated Office Complex for Animal Husbandry and Fisheries Department Anna Salai,Nandanam, Chennai –600035	Ph.044-29510390 coffisheries@gmail.com
	Dr.B.Sundaramoorthy, Dean Fisheries College and Research Institute Thoothukudi	Ph.:0461-2340554 Fax:0461-2340574 deanfcrituty@tnfu.ac.in
	Dr.B.Ahilan, Dean Dr. MGR Fisheries College and Research Institute Ponneri	Ph.: 044-27971556 Fax:044-27971555 deanfcriponneri@tnfu.ac.in
	Dr.S.Balasundari, Dean Dr. MGR Fisheries College and Research Institute, Thalainayeru	9345718579 deanfcritnayeru@tnfu.ac.in
	Dr.R.Rajendran,Dean College of Fisheries Engineering, Nagapattinam	Ph:04365-256501 Fax:04365-256502 deancofe@tnfu.ac.in
	Dr.S.A.Shanmugam, Dean Institute of Fisheries Post Graduate Studies OMR,Vaniyanchavadi	Ph.: 044-27470696 deanipgs@tnfu.ac.in
	Dr. Usha Antony (Upto 17.01.2021) Dr.R.Senthiladeban (From 18.01.2021) Dean, College of Fish Nutrition and Food Technology Madhavaram, Chennai -51	Ph:044-25550359 deancfnft@tnfu.ac.in
	Capt. S. Viswanathan, Dean, College of Fisheries Nautical Technology, Fishing Horbour Complex,Thoothukudi -01	Ph:044-0461-2337566 deancfnt@tnfu.ac.in
	Dr. G.Jeyasekaran, Director of Research TNJFU, Nagapattinam	Ph.: 04365-256437 Fax:04365-256438 dr@tnfu.ac.in

	Dr.M. Rajakumar,,Director of Extension Education TNJFU, Nagapattinam	Ph.: 04365-256434 Fax:04365-256436 dee@tnfu.ac.in
	Dr.P.Jawahar, Controller of Examinations TNJFU, Nagapattinam	Ph.: 04365-256430 Fax:04365-256431 ce@tnfu.ac.in
	Class-II Other Members	
Professors nominated by the VC on rotational basis	Dr.P.Velayutham, Professor and Dean i/c. FC&RI, Parakkai Dr.C.B.T.Rajagopalasamy, Professor and Head Dept. of Aquaculture, Dr.MGR FCRI, Ponneri Dr.S.David Kingston, Professor and Head Dept. of Fisheries Biology and Resource Management, FCRI, Thoothukudi Dr.P.Padmavathy, Professor and Head Dept.of Aquatic Environment Management, Fisheries Collegeand Research Institute Thoothukudi	
	External Experts	
One person having special knowledge of practical experience in different aspects of fisheries nominated by the VC	Dr.N. Bhaskar, Advisor (Science & Standards) Food Safety & Strandards Authority of India (FSSAI) Ministry of Health & Family Welfare FDA Bhawan, Kotla road, New Delhi -110 002	Ph: 011-23237418 9448672408 bhasnarayan@gmail.com advisor.qa@fssai.gov.in
One Dean from ICAR recognized Fisheries College	Dr.A.Senthilvel Dean (Fisheries) Karnataka VeterinaryAnimal and Fisheries Sciences University, College of Fisheries,Mangalore -575002	Ph: 0824-2248936 Fax: 0824-2248366 deanfisheries@gmail.com

RESEARCH COUNCIL

Chairman	Dr.G.Sugumar Vice-Chancellor,TNJFU, Nagapattinam
Registrar	Dr.A. Srinivasan Registrar, TNJFU, Nagapattinam
Director of Fisheries or his nominee	Th. J.Jayakanthan,I.A.S. Commissioner of Fisheries,State Fisheries Department Integrated Office Complex for Animal Husbandry and Fisheries Department, Anna Salai, Nandanam, Chennai – 600 035
Member Secretary	Dr. G. Jeyasekaran, Director of Research TNJFU, Nagapattinam
Deans and Directors of the University	All Deans and Directors
Chairs of the Schools	--
Heads of all Research Centres or Stations	All the Heads of Research centers and stations
Project Co-ordinators of all State /ICAR /OtherAgencies, research schemes	All the Principal Investigator, or Project Coordinators of the Research Scheme
Two Professors on rotation every year from each of the college campus nominated by the Vice-Chancellor	Dr. N. Neethiselvan, Ph.D., Professor and Head, Dept. of Fishing Technology and Fisheries Engineering, Fisheries College and Research Institute, Thoothkudi Dr. Cheryl Antony, Ph.D., Professor and Head, Dept. of Aquaculture, Dr.M.G.R. Fisheries College and Research Institute, Ponneri
Two specialists or eminent persons in the field of fisheries from outside the University to be nominated by the Vice-Chancellor for their specialized knowledge	Dr. G. Ananda Ramadass, Ph.D., Scientist–G, Head Deep Sea Technology, National Institute of Ocean Technology, Tambaram MainRoad, Narayanapuram, Pallikaranai, Chennai. Dr. V. Arul, Ph.D. Professor and Head Department of Biotechnology School of Life Science, Pondicherry University Pondicherry – 605 014
Three progressive entrepreneurs specialized in fish farming / post-harvest technology to be nominated by the Pro-Chancellor on the recommendations of the Vice-Chancellor	1. Mrs. Emily Surijitha Titus No.50A, Sabapathy Cross Street, Ayanavaram, Chennai – 600023 2. Dr. M. Rajalekshmi, Ph.D. Kemin Industries South Asia Pvt.Ltd Ambattur Industrial Estate, Chennai– 600058 3. Thiru.Srinivasan,M.Sc. (Maricuture) Poseideon Biotech PC1, I&II Floor, Mugappair West Main Road, MugappairWest, Chennai – 600 058
Representatives of the sponsoring agencies by the invitation of the Vice-Chancellor from time to time	Dr. S. Chandra, Exective Director, National Fisheries Development Board, Hyderabad Mr. V. M. Chandrasekaran, Chief Director, National Cooperative Development Corporation, Chennai

EXTENSION EDUCATION COUNCIL

Chairman	Dr.G.Sugumar Vice-Chancellor,TNJFU, Nagapattinam
Registrar	Dr.A. Srinivasan Registrar,TNJFU,Nagapattinam
Member Secretary	Dr.M.Rajakumar Director of Extension Education
Director of Fisheries or his nominee	Th.J. Jayakanthan,I.A.S. Commissioner of Fisheries State Fisheries Department Integrated Office Complex for Animal Husbandry and Fisheries Department AnnaSalai,Nandanam, Chennai–600035
Deans and Directors of theUniversity	All Deans and Directors
Chairs of the Schools	--
Regional Joint Directors of Fisheries of the three regions nearer to the place of the Council meeting. Viz., Chennai, Nagapattinam and Thoothukudi, as the case may be, invited by the Vice-Chancellor	To be nominated at the time of EEC meeting
Two Professors of the University to be nominated by the Vice-Chancellor for particular meeting according to the requirements of the agenda	To be nominated at the time of EEC meeting
Heads of the Department of Fisheries Extension of the Colleges /Institutes	To be nominated at the time of EEC meeting
Two eminent persons in the field of extension education from outside theUniversity nominated by the Vice-Chancellorfor any particular meeting in accordance with the requirements of the agenda	To be nominated at the time of EEC meeting
Three progressive entrepreneurs specialized in fisheries activities to be nominated by the Pro-Chancellor on the recommendations of theVice-Chancellor	Mrs. Madhu Saran Chief Executive Officer STC Group of Companies &ABC Clinic No.3,CMM Street, Nungambakkam, Chennai–600034 Dr.Santhanakrishnan, Ph.D. Chief Executive Marine Technologies 56,MGRoad,Shastri Nagar,Thiruvanmiyur, Chennai – 600 041 Er.R.Kulasekaran, M.Tech. S2, Achuthan Ramanuja Apartment Trustpuram IIICross Street,Kodampakkam Chennai – 600 024

FINANCE COMMITTEE

Chairman	Dr.G.Sugumar Vice-Chancellor TNJFU, Nagapattinam
Member Secretary	The Finance Officer TNJFU,Nagapattinam
Members (Ex-Officio Members)	The Secretary to the Government Dept. of Animal Husbandry, Dairying and Fisheries Secretariat, Chennai
	The Secretary to the Government Finance Department Secretariat, Chennai
Board Member (Non-Official)	Th.S.Dinakaran 3/275, Bajanaikovil Street Kottivakkam Chennai – 600 041

BOARD OF STUDIES (Fisheries Sciences)

Chairman	Dr.B.Ahilan Faculty Dean Fisheries College and Research Institute Thoothukudi – 628 008
External Expert	Prof. K.Riji John Vice-Chancellor Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi, Kerala
External Expert	Dr.N.Madahvan Professor and Head Department of Fisheries Engineering, College of Fisheries Sri Venkateswara Veterinary University (SVVU), Muthukur, Nellore,Andhra Pradesh
Member	Dr.J.Stephen Sampath Kumar Director, Directorate of Sustainable Aquaculture, Nagapattinam – 611 002
Member	Dr.P.Jawahar Controller of Examinations TNJFU, Nagapattinam
Member	Dr.R.Jeyashakila Professor and Head Department of Fish Quality Assurance and Management Fisheries College and Research Institute, Thoothukudi
Member	Dr.S.Balasundari Dean Dr.MGR Fisheries College and Research Institute,Thalainayeru
Member	Dr.S.A.Shanmugam Dean (Basic Sciences) Institute of Fisheries Postgraduate Studies, TNJFU OMR Campus, Chennai
Member	Dr. N. Neethiselvan Director, Directorate of Incubation and Vocational Training in Fisheries, Mandapam, Ramanthapuram
Member	Dr.K.Veerabhadran Professor and Head Ganapathipuram Centre for Sustainable Aquaculture Kanyakumari
(Elected representative)	Dr.K.Ravaneswaran Professor and Head Advanced Research Farm Facility TNJFU Madhavaram Campus, Chennai
Member	Dr.N.Jayakumar Associate Professor and Head Department of Fisheries Biology and Resource Management Fisheries College and Research Institute, Thoothukudi – 628 008
(Elected representative)	Dr.V.Rani Associate Professor Department of Aquatic Environment Management Fisheries College and Research Institute, Thoothukudi – 628 008
Member	Dr.G.Arul Oli Assistant Professor Department of Fisheries Extension, Economics and Statistics, Fisheries College and Research Institute, Thoothukudi – 628 008
(Elected representative)	Dr.N.Muralidharan Assistant Professor Department of Fish Processing Technology Dr.MGR Fisheries College and Research Institute, Ponneri

BOARD OF STUDIES
(Fisheries Engineering)

Chairman	Dean College of Fisheries Engineering Nagapattinam–611002
Members	All Deans, Directors and Controller of Examinations
Members	All the Heads of the Departments
Elected Members among Assistant Professors	Dr.P.Karthickumar Er.S.Monikadon Assistant Professor COFE
B.Tech.(Fisheries Engineering)	
Nominated external experts by the Vice -Chancellor	Dr. S. John Don Bosco Professor & Head Department of Agricultural Process Engineering, Pondicherry University, R.V.Nagar,Kalapet, Puducherry – 605014 Dr. M. Siddarth Professor (Agrl.Engg.) KrishiVigyanKendra, TANUVAS Kattupakkam–603203
B.Tech.(Energy and Environmental Engineering)	
Nominated external experts by the Vice -Chancellor	Dr. P. Subramanian Professor, Department of Bioenergy, TamilNadu Agricultural University, Coimbatore – 641 003 Dr. M. Rajeswari Professor & Head, Soil and Water Conservation Agricultural College and Research Institute (AC &RI) Madurai – 625 104

BOARD OF STUDIES
(Fish Nutrition and Food Technology)

Chairman	Dean, CFNFT, Madhavaram, Chennai
Members	Controller of Examinations, TNJFU Nagapattinam
	Dean, (Academics), TNJFU, Nagapattinam Dean , Dr.MGR FC& RI, Ponneri Dean, IFPGS, Vaniyanchavadi, Chennai Dean, CoFE, Nagapattinam
Elected representative	Dr.R.Brimapureeswaran Assistant Professor,CFNFT Madhavaram, Chennai
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External Experts	Dr.V.Thirupathi, Ph.D., Dean Agricultural Engineering College and Research Institute, TNAU Kumulur – 621 712, Pallapuram (Post), Poovalur (Via), Lalgudi (Taluk), Trichy District

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	Dr.Senthilkumar Professor Vaccine Research Centre–Viral Vaccines Centre for Animal Health Studies Madhavaram Milk Colony, Chennai – 600 051

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RESEARCH

RESEARCH 2

2.1. On-going projects during 2020 - 2021

a. GoI Agencies and State Govt. Funded Projects

1 National surveillance programme for aquatic animal diseases-Funded by ICAR - Rs. 95.312 lakhs- PI - Dr. M. Rosalind George.

2 Production of Eicosapentaenoic acid (EPA) from marine diatom *Phaeodactylum tricornutum* isolated from the coastal waters of Gulf of Mannar - Funded by DST – SERB, Govt. of India, New Delhi – Rs. 41.85 lakhs – PI - Dr.V. Rani.

3. Reemergence of *V. vulnificus* risk in seafood safety in response to climatic changes -Funded by DST – SERB New Delhi - Rs. 39.67 lakhs – PI - Dr.V. Alamelu.

4. Establishment of Marine Products Business Incubation Centre-Funded by EDII, Chennai-Rs. 250 lakhs – PI - Dr. P. Ganesan.

5. Evolving artificial fish bait for long line fishing using bio-polymer and bio-attractants derived from marine fish processing wastes - Funded by DBT, New Delhi - Rs.44.56 lakhs-PI - Dr. N. Neethiselvan.

6. Open Sea Cage Culture of Marine Finfishes along the Coast of Ramanathapuram District of Tamil Nadu-Funded by NFDB - Rs. 267.6 lakhs – PI - Dr.C. Anand.

7. Aqua One Centre-funded by NFDB-Rs. 20.00 lakhs – PI - Dr.C. Anand.

8. Development and demonstration of innovative fisheries engineering interventions for the production maximization in fisheries industries in Tamil Nadu. Sub project: 1: Demand based Solar powered auto feeders for hatcheries-Funded by TANII - Rs. 75.2 lakhs – PI - M. Sivakumar.

9. E-fish health surveillance and monitoring network to improve fisheries production in Tamil Nadu - Satellite lab Nagapattinam - Funded by TANII - Rs. 590.40 lakhs – PI - Dr. A. Uma.

10. Artificial Coral Reef / Live Rock (ACR / LR) and Fish Aggregating Artificial Reef (FAAR) to enhance fish diversity and biomass in the sea near Pulicat Lake towards fishing pressure reduction and livelihood improvement of fisherfolk in the lake region-Funded by TANII - Rs. 430.66 lakhs – PI - Dr. D. Manikandavelu.

11. Integrated multi-trophic Aquaculture (IMTA) based culture technology to augment fish production as an alternative livelihood for the fisher folk of Tharuvaikulam, Tamil Nadu-Funded by NADP-Rs.100.00 lakhs – PI - K.S.Vijay Amirtharaj.

12. Establishment of Recirculatory Seabass Aquaculture Technology Park for doubling the income with low water budgeting - Funded by NADP - Rs. 350.00 lakh – PI - Dr.B. Ahilan.

13. Establishment of State Referral Laboratory for fish feed testing and quality certification at Institute of Fisheries Post Graduate Studies, TNJFU - OMR Campus, Vaniyanchavadi, Chennai - Funded by NADP - Rs. 250.00 lakh – PI - Dr. S.A. Shanmugam.

14. Establishment of Aqua-Agriculture Integrated Systems for inland farmers in Erode District -Funded by NADP - Rs. 138.5 lakhs – PI - Dr.S. Aanand.

15. Establishment of Fisheries Training Institute at Mandapam, Ramanathapuram District-Funded by NADP - Rs. 450.00 lakhs – PI - Dr. N. Neethiselvan.

16. Establishment of Loach (AyiraiMeen) Breeding centre at Parakkai, Kanyakumari Dt. -Funded by NADP-Rs.125.00 lakhs – PI - Dr. J. Stephen Sampath Kumar and Mr. P. Velmurugan.
17. Development and Transfer of Seaweed Farming Technology as an alternative employment option for the coastal fisher folk in Mandapam region of Tamil Nadu-Funded by NADP - Rs. 251.1 lakhs - PI-Dr.C. Anand.
18. Additional Academic Infrastructure for Institute for Fisheries Post Graduate Studies - Funded by NABARD - Rs. 635.00 lakhs – PI – Dr. S.A. Shanmugam.
19. Paraprofessional Institute of Aquaculture Technology at Muttukadu, Chennai - Funded by NABARD -Rs. 880.00 lakhs – PI - Dr. N. Felix.
20. Isolation and characterization of environmental friendly antifouling metabolites from marine sponge associated actinobacterial strains - Funded by TNSCST-DST - Rs. 18.87 lakhs – PI - Dr. S. Prakash.
21. Evaluation of Eco-friendly antifouling metabolites from endophytic actinomycetes associated with Seaweed and Seagrass species-Funded by ICSSR-IMPRESS - Rs. 7.35 lakhs – PI - Dr.S. Prakash.
22. Development of new strain for inland fish farm-Funded by World Bank - Rs. 40.33 lakhs - PI - Dr. J. Stephen Sampath Kumar.
23. Development of optimum sustainable production model for irrigation tanks and farm ponds in Tamil Nadu - Funded by TN-IAMP-Rs. 42.20 lakhs-PI-Dr. J. Stephen Sampath Kumar.
24. Development and management of pure line inland fish brooders in the brooder farm and production of good quality seeds -Funded by TN-IAMP-Rs. 38.20 lakhs-PI-Dr. J. Stephen Sampath Kumar.
25. Capacity building and training of trainers, fishers, fish farmers and entrepreneurs in the adoption of advanced farming techniques - Funded by TN-IAMP-Rs.52.47 lakhs-PI-Dr. J. Stephen Sampath Kumar.
26. Aquaponics and Raceway model development and dissemination - Funded by TN-IAMP-Rs. 42 lakhs-PI-Dr. J. Stephen Sampath Kumar.
27. Formulation of species-specific fish feed using locally available low-cost ingredients - Funded by TN-IAMP- Rs. 34.80 out of 250 lakhs – PI - Dr. N. Felix.
28. Livelihood improvement through technology backed backyard Genetically Improved Farmed Tilapia (GIFT) and Carp farming in backward blocks of Krishnagiri district-Funded by SPC-State Balanced Growth - Rs. 30.00 lakhs – PI - Dr. P. Chidambaram and Dr. Somu Sunder Lingam, R.

b. Private Agencies

29. Appraisal of marine fish landings of Tamil Nadu - Funded by Handy – Water base India (P) Ltd, Tuticorin - Rs.8.33 lakhs – PI - Dr. P. Jawahar.
30. Effect of seaweed based product as feed additive on growth performance and feed utilization in pacific white shrimp *Penaeus vannamei* - Funded by Sea6 Energy, Bangalore-Rs. 6.95 lakhs - Mr. K.S. VijayAmirtharaj.

c. University Funded Projects

31. Development and standardization of health drink from biomodulated chitosan - Funded by JTRF, TNJFU - Rs. 2.00 lakhs – PI - Mrs. S. Vimaladevi.
32. Design and implementation of IOT Based Real Time hatchery Monitoring system -funed by JTRF - Rs. 2.0 lakhs – PI - Er.C. Mercy Amrita.
33. Development and evaluation of combined gill net with long line for pelagic fishery for traditional fishermen in Pulicat Region of Coromandel coast - Funded by TNJFU - URP- PI - Mr. R. Velmurugan.
34. Formulation of *Ulva* based jam products - Funded by URP, TNJFU - URP - PI-Mr.V. Vijayarahavan.

2.2. Completed projects during 2020-2021

a. GoI Agencies and State Govt. Funded Projects

1. Bio-prospecting for anti-osteoporotic collagen peptides derived from fish bones - Funded by DBT - Rs.36.07 lakhs – PI -Dr. R. Jeya Shakila.
2. Development, demonstration and dissemination of Solar energy operated aerators in shrimp farms - Funded by ICAR – Extramural -Rs.21.25 lakhs - PI-Er. D. Babiyola
3. Monitoring of heavy metals in fish and shellfish species along the Indian coast and possible mitigation measures - Funded by FSSAI - Rs.9.5 lakhs – PI - Dr. R. Shalini.
4. Creating a platform kayalagam–the future store for amplification of marketing of diversified fish products in Tamil Nadu - Funded by NADP - Rs.250.00 lakhs – PI - Mrs. Nimish Mol Stephen.
5. Establishment of fish and shell fish health certification and disease surveillance laboratories in Tamil Nadu for enhancement of aquaculture production - Funded by NADP - Rs.242.275 lakhs – PI -Dr. A. Uma.
6. Development and demonstration of innovative fisheries engineering inventions for the product maximization in fisheries industries-Funded by State Planning Commission, Tamil Nadu State - Rs.75.2 lakhs – PI - Dr. M. Sivakumar.

b. Private agencies

7. Evaluation of the efficacy of prototypes of M/s Kemin against *Enterocytozoon hepatopenaei (EHP)* infection in white leg shrimp *Litopenaeus vannamei* - Funded by M/s. Kemin Aqua Science - Rs.4.79 lakhs - PI-Dr. A. Uma.
8. Herbal feed additive as choline replacer and its effect on the growth of Pacific white shrimp, *Penaeus vannamei*-Funded by Natural Remedies, Bangalore - Rs.5.42 lakhs - PI-Dr.N.Felix.

c. University Funded Projects

9. Studies on the nutritional factors influencing gamete quality and artificial fertilization in Koi carp-Funded by TNJFU – JTRF - Rs.2.0 lakhs – PI - Dr. C. Judith Betsy.
10. Development of halochromic sensor-based on bionanocomposite for monitoring spoilage of packaged fish-Funded by TNJFU JTRF - Rs.2.0 - PI - Dr. D. Kesavan.
11. University Research Project on Comparative skeletal osteology of anchovies (Genus: *Stolephorus*) off Thoothukudi Coast commenced-Funded by TNJFU Nagapattinam - PI-Mr. R. Durairaja.
12. Assessment of CO_2 emission from motorized fishing vessels of Thoothukudi Coast-Funded by TNJFU (URP) – PI - Mr. T. Ravikumar.

2.3. Newly sanctioned projects during 2020-2021

a. GoI funding agencies

1. Deciphering genomic insights associated with adaptation in *Etroplus suratensis* (Pearl spot) for Climate Resilient Aquaculture-funded by Competitive Grants ICAR-NICRA-Rs.33.5 lakhs (excluding Institutional Charges @ 10%) – PI - Dr. Deepak Agarwal.
2. Hands on Training cum Demonstration on Limited Water Usage Aquaculture Technologies - Funded by NADP - Rs.187.40 lakhs – PI - Dr. B. Ahilan.
3. Upgrading Sustainable Aquaculture Production Centres of TNJFU for operation through Private-Public Partnership for Integrated Agriculture Development-Funded by NADP - Rs.328.409 lakhs – PI - Dr. J. Stephen Sampath Kumar.

4. Training Facility on Safety at sea for fishermen at Directorate of Incubation and Vocational Training in Fisheries, TNJFU, Mandapam - Funded by NADP - Rs.120.0 lakhss – PI - M. Kalaiarasan.
5. Establishment of Fisheries Demonstration Complex at Thalaivasal-Funded by NABARD and Govt of Tamil Nadu - Rs.267.00 lakhs – PI - Dr. P. Chidambaram.

b. Private Funding agencies

6. Evaluation of the efficacy of Prototypes of M/s Kemin on the Survival and Immunological response in White leg shrimp *Penaeus vannamei* experimentally infected with White spot syndrome virus (WSSV) Insitute Industry Project - Funded by M/s.Kemin Industries - Rs.8.92 lakhs – PI - Dr.A.Uma.
7. Evaluation of prototypes of M/s Kemin for their activity against infection caused by *Enterocytozoon hepatopenaei* (EHP) and *Vibrio sp.* in white leg shrimp *Penaeus vannamei* Insitute Industry Project -Funded by M/s. Kemin Industries - Rs.11.31 lakhs – PI -Dr.A.Uma.
8. Effects of String protein on feed intake, growth and physiological responses of Pacific white shrimp, *Penaeus vannamei* - Funded by String Bio, Bangalore (Industry) - Rs.7.56 lakhs – PI - Dr. N. Felix.

c. University Funded Projects

9. Stock Assessment of Siganids in Pazhavaerkadu coast, Thiruvallur District - Funded by TNJFU – URP – PI -Mr. P. Pavinkumar.

2.4. Self-financing schemes

Sl. No.	Title of the Scheme	CentRE	Services	Annual turnover (Rs in lakh)
1	Self-financing scheme on TNJFU Referral Laboratory for Aquatic Animal Health	DFPHM, FC&RI, Thoothukudi	Lab testing charges	--
2	Quality analysis of fish samples	DFQAM	Lab testing charges	2.03
3	Rapid Diagnosis of shrimp, viral and bacterial Diseases by molecular methods in hatchery and Farm Sample	Department of Aquatic animal health management Dr. M.G.R Fisheries College and Research Institute , Ponneri	• Bacteriology – Vibrio analysis in shrimp farm and hatchery water samples • PCR diagnosis of viral pathogens	0.054
4	Revolving fund - water quality testing lab for the hatchery and farm sampleS	Department of Aquatic Environment Management Dr. M.G.R Fisheries College and Research Institute, Ponneri	Water and soil analysis	0.317
5	Establishment of Shrimp Disease Diagnosis Laboratory	State Referral Laboratory for Aquatic Animal Health Madhavaram, Chennai	a. Disease diagnosis b. Water quality analysis c. Seed quality analysis d. Training to the farmers e. Students training and project	13.78

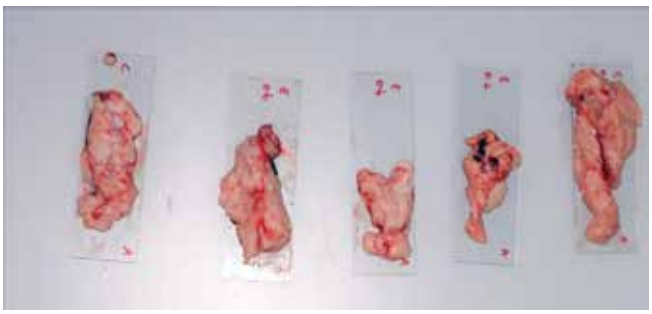
RESEARCH HIGHLIGHTS 2.5

Fisheries College and Research Institute, Thoothukudi

1. Department of Aquaculture

Junior Teachers Research Fellowship project - Studies on the nutritional factors influencing gamete quality and artificial fertilization in Koi carp

- Male and female koi carp exhibited higher growth performance indices when fed with feed containing Vitamin E at 200 mg/kg feed.
- The male fish fed with a diet containg higher rate of Vitamin (C & E) were able to produce higher GSI. In female fish, the higher GSI was recorded when fed with diet containing Vitamin E (400 g/kg feed)
- Freezing protocol I gave best result when compared to freezing protocol II. The fishes fed with Vitamin E at 200 and 600 mg/kg diet (freezing protocol I) exhibited higher motility values during cryopreservation.
- Vitamin E (200 mg/kg feed) and Vitamin C (600 mg/kg feed) can be supplemented in the diet of *C. carpio* to have better growth and reproductive performance.
- Freezing protocol I can be followed for cryopreservation of *C. carpio* spermatozoa in order to have minimum post-thaw cryoinjuries and to yield maximum fertilization rate.



Ovary of females fed with feed containing Vitamin C and E at 3 different concentrations

Postgraduate Research - Studies on the spermatological properties and standardization of cryopreservation protocol for Cobia, *Rachycentron canadum*

- Raw milt of *R. canadum* exhibited the highest post-thaw motility duration and motility score with forward and circular movement of spermatozoa. The sperm density in the milt of *R. canadum* spermatozoa was higher with 3.04×10^9 cells/ml. However, the sperm density in the milt was decreased, when the milt was diluted to 1:40, 1:80 and 1:120 dilution ratios.
- *R. canadum* milt diluted with 0.85% physiological saline showed the highest post thaw motility duration and motility score. Milt cryopreserved with 10% DMSO exhibited the highest post-thaw motility duration, whereas the sperm motility duration was low in milt cryopreserved with 5% DMSO.
- *R. canadum* milt diluted at 1:40 showed the highest post-thaw motility duration of 55±1 s when compared to 1:80 (53.66 s) and 1:120 (50.33 s) dilution ratios.

Cannulation of Cobia

Observation of cobia spermatozoa under microscope (20 X)

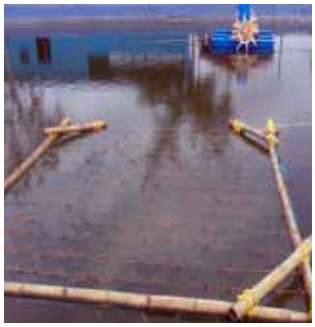
Postgraduate Research - Effect of stocking parameters on growth, survival and production of *Pangasius hypophthalmus* (Sauvage, 1878) in intensive cage culture system

- In the first set of experiment, the highest final mean body weight (110.03 ± 0.11 g), Weight Gain (107.19 ± 0.54 g), Daily Weight Gain (1.08 ± 0.00 g) and Specific Growth Rate (4.07±0.17) was observed in lowest stocking density (20 nos/m^3).
- The FCR and FCE were best in lesser stocking density (20 nos/m^3). The net biomass production (21.42 ± 0.02 kg) was directly proportional to the stocking density and the maximum value was recorded in highest stocking density (60 nos/m^3).

- The survival (97.50 ± 0.00%) was highest in cages having least stocking density (20 nos/m^3).
- In the second set of experiment, the maximum weight gain (58.19 ± 0.18 g), Daily Weight Gain (0.97 ± 0.00 g) and Specific Growth Rate (5.42 ± 0.04) was observed in smaller stocking size (2″). Similarly, the highest survival (98.75 ± 0.00 %) was observed in smaller stocking size (2″).
- *P. hypophthalmus* showed better growth, survival and body composition in cages under the stocking density of 20 nos/m^3 with stocking size of 2″.

Postgraduate Research - Integrating *Penaeus vannamei* (Boone, 1931) with red seaweed *Gracilaria edulis* (S.G.Gmelin) P.C.Silva, 1952: A Sustainable Alternative in Aquaculture

- Seaweed (*G. edulis*) has no negative impact on shrimp production, which allows optimal utilization of space, contributing to improving water quality thereby resulting in establishing GMPs. This study also confirms that the biofilter efficiency of *G. edulis* ensured better water quality management in *vannamei* culture.
- At the end of trial, harvested mean value of seaweed was obtained (12.51 ± 0.39 kg/raft). The mean values of ADG for raft 1 and raft 2 was 0.156 and 0.165, respectively. The mean DGR % values were also recorded for raft 1 (1.77) and raft 2 (1.82)
- C:N:P ratio of initially seeded seaweed and seaweed harvested from treatment culture system were 29.99 :1.94 : 0.37 and 27.26 :1.26 : 0.27, respectively.
- The study revealed that white leg shrimp *P. vannamei* integrated with red seaweed (*G. edulis*) showed significantly higher growth, production, survival, feed efficiency and improved water quality when compared to control culture system / monoculture.



Postgraduate Research - Role of system design and stocking density on growth, survival and meat quality of silver pompano, *Trachinotus blochii*, (Lacepede, 1801) in indoor nursery rearing

- A cost effective biofilter was fabricated within a non-corrosive bin using non corrosive solid media such as coral rubble, ceramic rings, quartz sand, activated carbon granules and clam shells.
- Maximum mean weight (5.90 ± 0.10 g), weight gain (5.47 ± 0.07 g), weight gain % (1298.76 ± 91.56g), Daily weight gain (0.12 ± 0.001g) and Specific growth rate (5.886 ± 0.15g) were indirectly proportional to stocking density.
- The maximum values were recorded in the system equipped with designed biofilter and lesser stocking density (20 no.s fish/200 l).
- The FCR and FCE were best in lesser (20 no.s fish/200 l) and moderate stocking density (40 no.s fish/200 l)
- Second experiment was carried out in indoor grow out tanks to observe the effect of stocking density on meat quality of silver pompano.
- Maximum protein absorption was observed in moderate stocking density (16 nos. /m^3). However, increased stocking density affects the body composition, which in turn resulted in decreased ash and lipid content.
- Texture Profile Analysis (TPA) parameters viz; hardness (2.24 kgf), cohesiveness (0.41), springiness (1.83 mm), chewiness (1.58 kgf.mm) and stiffness (2.1 kgf) was found to be highest in lesser stocking density (8 nos. fish/m^3).
- Stress parameters enzyme activity recorded as CAT and LDH. This was lower in lesser stocking density levels and it was higher in the silver pompano reared at higher stocking density (24 nos. fish/m^3).

2. Department of fish Pathology and Health Management

NFDB –ICAR project - National Surveillance programme for Aquatic Animal Diseases

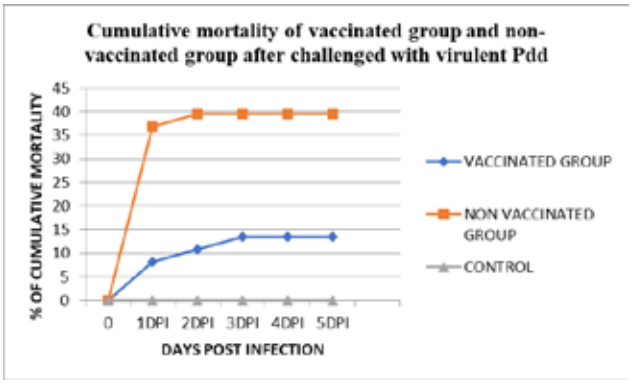
During 2020-2021, we covered the districts committed for active surveillance for marine and brackish water shrimp farming in Nagapattinam (South of Karaikkal), Pudukkottai and Thanjavur and two districts of passive surveillance in Thoothukudi and Ramnad. Samples were collected from 30 farms and 01 hatchery. Total 89 samples (*P.vannamei)* were collected. Totally 461 specimens were collected and 261 specimens were screened. Samples were analysed for the presence WSSV, IHHNV, MBV, BP, TSV, YHV, IMNV, EHP and AHPND.

- Out of 89 samples analysed, 03 samples gave positive result for WSSV. All 89 samples were analysed for the presence of *Enterocytozoon hepatopenaei* by nested PCR. Thirty eight samples were identified as EHP infected. All the samples were analysed for IHHNV, MBV and BP and the analysis gave negative result.
- All the samples were analysed for the presence of TSV, IMNV and YHV and the samples were negative for these viruses.
- One hundred and eighteen bacterial isolates isolated from shrimp samples were analysed for AHPND by PCR and it was confirmed as negative.
- Fish analysis: The snake head fish samples collected from Tenkasi district were analyzed for *Rhabdo virus* by PCR. The analysis gave negative result.
- Catla, rohu, mrigal, common carp and grass crap samples received from Tirunelveli district fish farms were analyzed for the presence of Koi Herpus Virus and *Aphanomyces invadans* by PCR. The analysis showed negative result.
- *Catla catla* collected from Tirunelveli district was analyzed and the sample was infected with gill fluke.
- Tilapia fish samples collected from Theni, Tirunelveli and Thoothukudi districts were analyzed for the presence of Tilapia Lake Virus. The analysis gave negative result.
- Mortality was noticed in seabass cage culture in Tirupulani, Ramanathapuram districts. The samples were analyzed for the presence of Irido virus and Noda virus. The analysis gave negative result.
- *Photobacterium damselae* was isolated from the infected seabass presence of *Photobacterium damselae* by using multiplex PCR. However the seabass juvenile collected from Rameshwaram, Ramanathapuram districts were negative for *Photobacterium damselae* by using multiplex PCR.
- The seabass juvenile collected from Rameshwaram, Ramanathapuram districts were analyzed for the presence of Nodavirus and irido virus. The analysis gave negative result.
- Infected snake head fish samples collected from Mayiladuthurai district were analyzed for the presence of Rhabdo virus and *Aphanomyces invadans*. The analysis showed positive result for *Aphanomyces invadans.*
- National Surveillance Programme for Aquatic Animal Diseases scheme Compilation Report for the period of 2013-2020 was prepared and sent to the agency.

Postgraduate Research - Immunization of marine finfish with pathogenic *Photobacterium damselae* subsp. *damselae.*

- The *Photobacterium damselae subsp. damselae* isolate obtained from cobia was used for this study. Multiplex PCR targeting 16srRNA and Urec gene confirms the isolate as *Photobacterium dasmselaesubsp. damselae.*
- Large scale hemorrhages were observed at caudal peduncle region and petechial hemorrhages were observed on pectoral fin region and base of pelvic fin. Cumulative mortality rate was found as 100%, 100% and 20% when challenged with 10^4 cells, 10^2 cells, 10 cells per fish, respectively. The mortality starts at 2nd day of post infection and continued upto 5th day. The isolate was found to be virulent and LD_{50} was found to be 1.45 X $10^{3.5}$ cfu/fish.

- From experimentally infected fishes, samples were collected for bacterial reisolation which confirmed the presence of virulent Pdd and this caused the mortality during pathogenicity study. Multiplex PCR analysis confirmed that the isolates were Pdd.
- Vaccination study was carried out in the experimental damsel fish. At 45th day of experiment, the vaccinated group and non-vaccinated group were challenged with virulent Pdd at 1.3 X 10^3 cfu/ fish. Bacterial re-isolation from gill, liver, spleen and kidney of dead and moribund fishes showed the presence of Pdd which were further confirmed by the multiplex PCR analysis.
- Average percentage of mortality in vaccinated group was 13.40% and in non-vaccinated group, it was 39.42%. The relative percentage survival rate reflects the vaccine efficiency. From vaccination study, the RPS of formalin killed whole cell vaccine was found to be 67%.

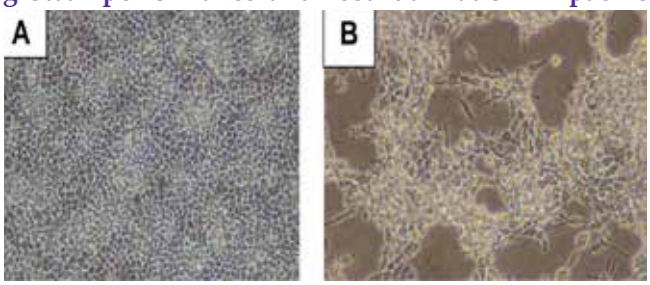


Postgraduate Research - Immune Gene Expression Studies in *Oreochromis niloticus* (Linnaeus, 1758) experimentally infected with Tilapia Lake Virus (TiLV)

- The Tilapia Lake Virus (TiLV) grew well in both EPC and SSN1 cells at 27°C. Upon viral infection, the monolayer of both EPC and SSN1 cell lines exhibited typical cytopathic effect (CPE) within 3-6 days of post-inoculation.
- In the immune gene expression study, an expression profile was obtained for both IPS-1 and TLR-7 in brain, kidney, liver and spleen. The expression pattern concludes the activation of both TLR and RLR pathway in virus recognition.
- A new primer for TLR-7 in tilapia has been designed for this study. The generated amplicon size was 111 nucleotides.
- The upregulation of IPS-1 and TLR-7 in brain and liver gives the idea that these tissues form the main target organs for TiLV infection, followed by kidney and spleen.
- The higher expression patterns of IPS-1 and TLR-7 at 12h post-infection in the tissues coincides with the virus entry and the initiation of signal transduction at the early stages of infection.
- As in the case of other members of Orthomyxoviridae family, the virus would have evolved several immune evasion strategies to escape from the immune system of fish.
- TLR-7 and IPS-1 being expressed in the tissues following virus infection indicates its central role in innate immune responses. Hence, these can be used as attractive target for virus control using specific ligands for eliciting strong immune response.

Cytopathic effect induced by TiLV in SSN1 cell line used in the study.

(A) Control SSN1 cell line (B) TiLV infected SSN1 cell line (Multiplication x 100)



Mariculture Research Farm Facilities, Tharuvaikulam - Effect of seaweed based product as feed additive on growth performance and feed utilization in pacific white shrimp *Penaeus vannamei*

- Seaweed based product as feed additive has shown an average better food conversion ratio in treatment ponds [2.06 (I Trial) and 2.03 (II Trial)] then control ponds [2.12 (I Trial) and 2.77 (II Trial)].
- The average survival obtained from the two treatments and control tanks has proven to have better average survival in treatment tanks (68%) compared to the control tanks.
- Though the average body weight from the control ponds was found to be better compared to treatment ponds in both the trial study, there was no significant difference observed between

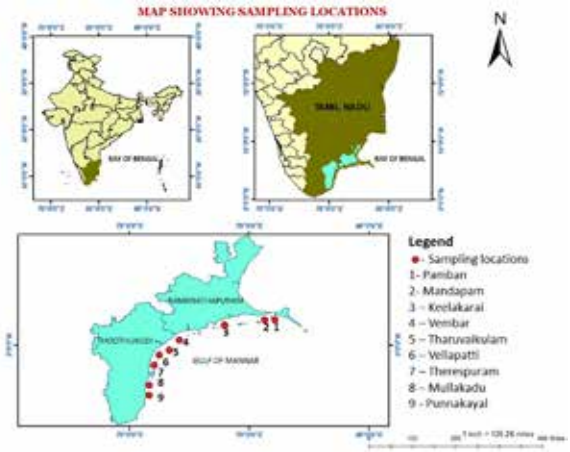
treatment and control in terms of average daily weight gain (I Trial: Treatment tanks – 0.17gm/day and Control – 0.18gm/day; II Trial: Treatment tanks – 0.085gm/day and Control – 0.07gm/day).

Vannamei Shrimp Harvesting

3. Department of Aquatic Environment Management

DST-SERB Project - Production of Eicosapentaenoic acid (EPA) from marine diatom *Phaeodactylum tricornutum* isolated from the coastal waters of Gulf of Mannar

- The live microalgal samples were collected from Gulf of Mannar coastal waters covering 9 locations from 8^{O} 35′ N – 9^{O} 25′ N latitude and 78^{O} 08′ E – 79^{O} 30′ E longitude at regular intervals with 2 to 4 samples per month.
- The targeted species *Phaeodactylum tricornutum* was collected using specially designed mid water plankton net at a depth ranges from 10-20m and identified. The identified species is under subculture for isolation and molecular confirmation.
- A total of 16 species have been identified using light microscope with image capture system and isolated.
- The isolated five indigenous marine microalgal species such as *Cylindrotheca fusiformis*, *Amphora* sp., *Nannochloropsis salina, Navicula clavat*a and a green alga *Chlorella* sp were confirmed morphologically through FESEM and genetically by PCR amplification and sequence analysis of 18s RNA.
- Genbank accession number was obtained for the following species
  1. *Cylindrotheca* sp. NCBI: MW 828324
  2. *Amphora* sp. NCBI: MW 888414
  3. *Navicula clavata* NCBI: MW 888464 and
  4. *Nannochloropsis salina* NCBI: MW 888454
- An experiment was conducted for the newly isolated strains which were cultivated using different medium with various environmental parameters to optimize the culture conditions and to assess its best growth for commercial applications.
- The result of the experiment indicated that suitable salinity range for isolated microalgal strains were between 30 to 35 ppt, whereas the suitable media varies according to the species.



Postgraduate research- Histological and enzymatic effect of cypermethrin and monocrotophos in common carp, *Cyprinus carpio*

- The acute and chronic toxicity experiment of common carp, *Cyprinus carpio.* were conducted on pesticides namely monocrotophos and cypermethrin.
- The LC_{50} of 48 hrs exposed to monocrotophos was 0.382 ppm and it was 2.0 ppb to cypermethrin. For acute toxicity, concentrations chosen for monocrotophos were 0.095, 0.191, 0.382, 0.768 and 1.528 ppm and for cypermethrin, the concentrations were 0.5, 1.0, 2.0, 4.0 and 8.0 ppb.
- The effect of monocrotophos and cypermethrin on protein level of exposed fish was observed in muscle tissues of *Cyprinus carpio* and the protein level in the control fishes was 37.21 ± 0.08 mg/g.

In the 96 hr LC_{50} test, the protein content in the muscle decreased with increase in concentrations. In monocrotophos, the protein levels were 25.20 ± 0.05, 25.18 ± 0.12, 23.97 ± 0.11 and 20.81 0.03 mg/g at the concentrations of 0.095, 0.191, 0.382 and 0.768, respectively. Protein content of fish exposed to cypermethrin were 26.17 ± 0.02, 25.07 ± 0.01, 22.48 ± 0.06 and 20. 33 ± 0.23 mg/g at concentrations of 0.5, 1.0, 2.0 and 4.0 ppb, respectively.

- During chronic toxicity, the mean protein content in control group of *Cyprinus carpio* during 14th and 28th day of exposure was 37.17 ± 0.04 and 36.72 ± 0.06 $mg.g^{-1}$, respectively. The protein content of fish exposed to monocrotophos (At 14th day) at concentrations of 0.115, 0.057 and 0.029 ppm were 25.66 ± 0.07, 26.25 ± 0.02 and 26.15 ± 0.03 mg/g, respectively. The protein content of fish exposed to cypermethrin (At 14th day) at concentrations of 0.44, 0.25 and 0.11 ppb were 24.06 ± 0.08, 26.02 ± 0.02 and 27.37 ± 0.06 mg/g respectively.
- On 28th day of exposure, the protein content of the fish exposed to monocrotophos concentrations of 0.115, 0.057 and 0.029 ppm were 25.01 ± 0.23, 25.15 ± 0.03 and 26.04 ± 0.06 mg/g, respectively. At 28th day, protein content of fish exposed to cypermethrin at concentrations of 0.44, 0.25 and 0.11 ppb were 22.09 ± 0.04, 25.34 ± 0.12 and 27.05 ± 0.07 mg/g, respectively.

Cypermethrin

Monocrotophos


Dissection of fish


Brain of fish


Liver of fish


Gill of fish


Muscle of fish

Postgraduate research - Spatio-temporal variations in the occurrence of microplastics in saltpans and estuaries of coastal region of Gulf of Mannar

- A preliminary survey was conducted in Thoothukudi saltpan regions to identify the sampling sites (Pazhayakayal, Tharuvaikulam and Thoothukudi) by using GPS.
- Temperature (28-32° C), salinity (31-37 ppt) and pH (7 - 7.5) of water were observed in salt pans.
- Microplastics were extracted from the water, sediment and salt samples of salt pan areas as per the standard procedure of Tsang et al. (2017), Masura et al. (2015) and Yang et al. (2015), respectively.
- Shape (fiber, filament, pellets, film, rope and irregular shape), size (1-5 mm) and colour (blue, green, yellow, red and transparent color) of microplastics were also recorded.
- Microplastics were identified through the Nile Red staining method of Tamminga et al. (2017). The microplastics were counted and identified through the fluorescent microscope and FTIR, respectively.






Postgraduate Research - Trophic level transfer of polyethylene and polypropylene microplastics in coastal waters of Thoothukudi

- The present study was conducted to investigate the trophic level transfer of polyethylene and polypropylene microplastics in coastal waters of Thoothukudi. The monthly sampling of water,

beach sediments and fishes were collected from Vembar, Vellaptti, Threspuram, SPIC Nagar, Punnakayal and Thrichendur coastal areas.

- The mean concentration of microplastics recorded in coastal waters of Vembar, Vellaptti, Threspuram, SPIC Nagar, Punnakayal and Thrichendur were 0.05±0.02, 0.08 ± 0.02, 0.21 ± 0.05, 0.14 ± 0.04, 0.33 ± 0.25, 0.08 ± 0.04 particles/m^3, respectively.
- The mean concentration of microplastics recorded in the sediment samples in Vembar, Vellaptti, Threspuram, SPIC Nagar, Punnakayal and Thrichendur were 0.01± 0.01, 0.04 ±0.02, 0.17 ± 0.03, 0.05 ± 0.02, 0.04 ± 0.02, 0.03 ± 0.01 g/kg of dry sediments, respectively.
- Fragment shaped microplastics were dominant in coastal waters and beach sediments of Threspuram and SPIC Nagar.
- The mean abundance of microplastics was higher in *Sardinella* sp (2.33 ± 2.51 items/g) collected from Punnakayal landing centres.
- The mean abundance of microplastics was lower in *Sardinella* sp (0.01 ± 0.001 items/g) collected from Vembar landing centres.

Postgraduate Research - Effect of culture media and environmental factors on growth and lipid accumulation of selected marine microalgal species

- Liquid fertilizer was prepared from fermented fish (*Sardine* sp.) offal following the standard procedure (Vincent et al. 2014).
- Tree seed extract was prepared using the seeds of trees viz., Asoka, Casurina, Mango and Neem collected near by the college campus.
- Seaweed liquid fertilizer prepared from each species of red seaweeds (*Gracilaria edulis, Kappaphycu salvarezii, Gelidiella acerosa* and *Gelidiella sp.)* and brown seaweed species (*Turbinaria ornata, Sargassum wightii, Steochospermum marginatum)* by fermentation method.
- Growth performance of microalgae was observed under different organic media.
- A significant microalgal growth was observed for the seaweed liquid fertilizer prepared from *Kappaphycus alvarezii* (10.8 million cells/ml) in comparison with control i.e., commercial media (5.4 million cells/ml)

3. Department of Fisheries Biology and Resource Management

Postgraduate Research- Study on fishery status and population biology of sting rays (Family: Dasyatidae) of Thoothukudi coast

- Fourteen fish species of sting rays were recorded during the study period.
- The CPUE for sting ray was estimated.
- During the study period, growth parameter, mortality parameter, sex ratio, gut content analysis, fecundity was determined.

Field observation in the landing centre

Biology work at the PG laboratory

Postgraduate Research - Biology and life history characteristics of selected deep sea fishes including Otolith

- Samples to be analyzed were collected from the Western Bay of Bengal by using High speed Demersal Trawl - Crustacean Version (HSDT II CV). Totally 10 trawlings were done in Bay of Bengal, 2 from Arabian Sea in the depth range of (200-1000 m).
- Selected four species was: *Parascombrops pellucidus* caught from the depth range of 200-300 m, *Alepocephalus blanfordii* from 500-1000 m, *Pterygotrigla hemisticta* from 200-250 m and *Lamprogrammus niger* from 1000 m.
- The four species were identified and classified taxonomically using standard identification keys. The catch composition *Parascombrops pellucidus, Alepocephalus blanfordii, Pterygotrigla hemisticta* and *Lamprogrammus niger* were 115 kg (CPUE-19 kg/hr), 18 kg (CPUE-3 kg/hr), 13 kg (CPUE-2 kg/hr) and 310 kg (CPUE-52 kg/hr), respectively.
- Length-Weight relationship was established for four species for the first time except for *Pterygotrigla hemisticta.* Three of the four species showed positive allometric growth and *P. hemisticta* showed negative allometric growth.
- The Index of Relative Importance (IRI) revealed that these fishes feed mostly of the deep-sea shrimps, non- penaeids and fishes. *P. pellucidus* feeds on squids (IRI value 309), *Bregmaceros* sp. (IRI value 371), *Vincigueria nimbaria* (IRI value 1449) and non- penaeids (4316). *A. blanfordii* feeds on shrimp (IRI value 2274), fish (IRI value 1858), cephalopods (IRI value 118), jelly substances (IRI value 248), and sediments (IRI value 2023). *P. hemisticta* feed on digested matter (IRI value 11909) and shrimp (IRI value 1042).
- Gastro Somatic Index (GaSI) of four species showed descending pattern. The higher GaSI value was seen in the *P. pellucidus* (4.97) and lower was observed in L. *niger* (1.96). Specimens of *L. niger* are highly sensitive to bar static pressure changes. Hence, it showed low GaSI value.
- Hepatosomatic index with higher value indicated the conditions of gonadal development and growth. Maximum value was noticed in *P. hemisticta* (4.28) *P. pellucidus* (3.005). The minimum value was recorded in *L. niger* (0.998) and *A. blanfordii* (0.888).
- Through the present study, maturity stages and fecundity of these species were studied for the first time in the globally. Female of all the four species were in matured conditions (> 60 %). The estimated fecundity of *P. pellucidus, A. blanfordii, P. hemisticta* and *L. niger* ranged from 1362 – 15880, 325 – 1656, 21733 - 83757 and 87261-175896 eggs, respectively.
- Egg diameter *P. pellucidus A. blanfordii P. hemisticta* and *L. niger* were counted and their diameters were estimated from immature to fully mature range. The values ranged from 0.158 - 0.834, 0.993 - 4.727, 0.221 - 1.523 0.190 - 0.920, respectively.
- Standard classification shows that the otolith of *L. niger* was bigger is size and elliptic to trapezoidal in shape. Pentagonal, Ovate and Discoid shapd otolith were observed in *P. pellucidus*, *A. blanfordii* and *P. hemisticta*, respectively.
- Our studies indicated that equations derived by using all otolith morphometric variables and otolith weight can give accurate estimations for reconstructing the prey size (r^2 ranges from 0.93 to 0.73).

FORV *SagarSampada*

Onboard fishing facilities

Fish catch

Specimen collected from Fish landing centre

Postgraduate Research - Diversity, Fishery and Population biology of selected barracudas (Family: Sphyraenidae) off Gulf of Mannar Coast

- The study revealed new prey and it was identified as *Pterocaesio tile.*

- The length at first maturity for *S. forsteri* (36.3 cm) was recorded for the first time.
- The fecundity for *S. forsteri* (97,920 - 2, 52,000) was recorded for the first time.
- The study revealed *S. forsteri* as emerging barracuda fish for exploitation in Gulf of Mannar coast.
- The barracudas stock assessment study was assessed using Rapfish analysis.


Fish gonads collection Linear measurement

Speciemen from Fish landing centre, Thoothukudi

Postgraduate Research - Bio diversity of Molluscan community (Class: Gastropoda and Bivalvia associated with mangroves along Thoothukudi coast

- Ten species of the family cerithridae and eight species of potamididae were recorded during the study period.
- The lowest pH (5.94) was recorded in Punnakayal sampling station.
- The total organic content of the soil was lowest in the Karapad bay sampling station (1.19%).
- The highest carbon content (4.00588) and nitrogen content (1801 mg/kg) were recorded in Palayakayal sampling station.
- The study revealed that the mangrove region of machooda bridge had highest diversity of molluscs.



Postgraduate Research - Comparative study of biology and life history of *Tor malabaricus* in kuttiyadyriver and peruvannamozhi reservoir in Kerala

- Specimens of *Tor malabaricus* were collected using gill net and pole & line from the sampling stations.
- The fin clip samples were used for DNA isolation.
- Primer standardization was carried out for the DNA isolation.
- MEGA 7 software was used for the analysis of phylogenetic tree.


Tor malabaricus Sampling location

Postgraduate Research - Assessment of fish bycatch from trawl fishery of Thoothukudi and Nagapattinam

- The present study analyzed the finfish bycatch of trawl net fishery along the Thoothukudi and Nagapattinam from January 2017 to August 2019.
- The study reported the finfish bycatch diversity, the quantity of finfish bycatch and the economic value of the commercially important juveniles landed from the trawlers of Thoothukudi and Nagapattinam.
- The total of 188 and 210 finfish species were recorded from Thoothukudi and Nagapattinam, respectively.


Trawler bycatch at Thoothukudi Trawler finfish bycatch at Nagapattinam

Postgraduate Research - Distribution, diversity and stock assessment of fishes in potamon zone of Thamirabarani River, Tamil Nadu, South India

- The study was conducted at six sampling sites along the Thamirabarani river of Tirunelveli and Thoothukudi districts.
- Sixty fish species were recorded during the study period which indicated a rich biodiversity.
- The study revealed that no significant changes in water quality parameters such as dissolved oxygen, pH, river flow rate, water and atmospheric temperature between the selected sampling sites.
- The collection of rare fish specimen was carried out for DNA barcoding.

Fish specimens collected for identification and biology works to be carried out

Fish catch using cast net

Fish catch using dragnet

Fish catch

Water quality parameters recorded

Labeo spp

Postgraduate Research - Studies on molecular taxonomy, population dynamics, fishery and biology of selected species of Nemipteridae family along the Gulf of Mannar and Wedge Bank, Tamil Nadu coast

- The study was conducted along the Gulf of Mannar of Thoothukudi district and wedge bank from Kanyakumari district.
- The biology data, population parameters and fishery data of *Scolopsis bimaculatus* and *Nemipterus randalli* were collected during the study period.
- Fifteen species of Nemipteridae family were recorded during the study period.
- A research paper entitled "Range extension of *Parascolopsis baranesi* along the Gulf of Mannar was communicated.

Thoothukudi Fishing Harbour

Chinnamuttom Fishing Harbour

Samples of *Nemipterus randalli*

Weight of fish

Maturing male

Matured female

Biology data of *Nemipterus randalli*

Postgraduate Research - Species diversity, reproductive biology and population characteristics of bivalves from the coastal waters of southern Tamil Nadu

- The study was conducted in Ramnathapuram, Thoothukudi, and Kanyakumari coastal districts to study the bivalve diversity.
- The bivalve species from Ramnathapuram, Thoothukudi, and Kanyakumari coastal districts were recorded as 45, 25 and 25 species respectively.
- Sixty bivalve species were recorded during the study period which indicated the rich biodiversity along southern coast of Tamil Nadu.

Athankarai estuary

Meretrix casta

Gafrarium tumidu

Donax cuneatus

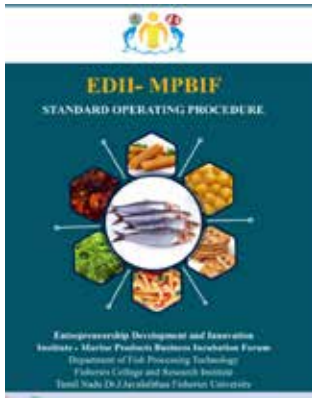
Three bivalves for biology and population charachteristics as *Meretrix casta, Gafrarium tumidum and Donax cuneatus*

4. DEPARTMENT OF FISH PROCESSING TECHNOLOGY

EDII project - Establishment of Marine Products Business Incubation Centre

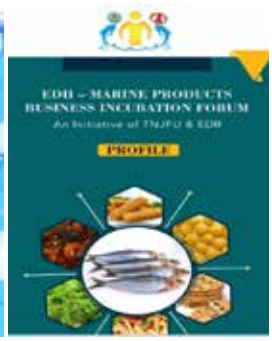
- EDII - Marine products business incubation forum, FCRI, Thoothukudi, registered as section 8 company.
- Acquired FSSAI registration certificate.
- Co-working space inauguration.
- Developed a profile for EDII- MPBIF, FC&RI and Thoothukudi.
- Developed SOP (Standard Operating Procedure) booklet for the operation of EDII- MPBIF, FC&RI and Thoothukudi.
- Total no. of registered incubates: 13.
- Total no. of IVPs submitted to EDII, Chennai: 21.
- Total no. of MoUs signed with other colleges/ industries: 04.
- No. of Training/ Awareness programs conducted: 08.
- Total no. of beneficiaries made out of scheme: 700.

FSSAI Registration



Development of SOP booklet

Co-Working Space Inauguration



Development of Profile

Postgraduate Research- Detection and Characterization of Shiga – toxigenic *Escherichia coli* (STEC) in fresh seafood landed and marketed in Thoothukudi

- The Total Heterotrophic Bacterial Load, Total Coliform, Faecal Coliform and *E.coli* was

enumaerated by using standard methods for the samples received from two landing centres (Fishing harbor and Therespuram) and two fish markets (VOC and Boobalarayapuram).

- 305 isolates were confirmed for *E. coli* by biochemical characterization. 279 isolates are tested presumptive ESBL positive and 140 isolates were carried forward for antibiotic sensitivity test.
- 140 isolates were tested against 11 antibiotics for sensitivity and the results were recorded.
- The seafood samples were examined for Shiga toxin producing *E. coli* by adopting standard methodology. Among them, 22 isolates, were confirmed with MUG and sorbitol negative and it showed presumptive Shiga toxin producing *E. coli*.

Postgraduate research - Antioxidant, antibacterial and functional characteristics of melanin and melanin free ink from selected cephalopod species.

- Melanin and melanin free ink (MFI) were separated using Ultracentrifuge.
- Protein estimation was done for MFI.
- Invitro antioxidant assays such as DPPH free radical scavenging assay and metal chelating assay were performed for all the MFI samples.
- FTIR analysis was done for Melanin and MFI samples and their functional groups were identified.
- Invivo antioxidant study was completed using fish mince model system. TBARS estimation was done using distillation method.

In-vitro antibacterial properties of both Melanin free ink and Melanin (1%, 5%, 10% and 20%) were determined by Kirby-Bauer method.

Melanin Free Ink extracted from Cephalopods

Postgraduate research - Physicochemical characterization of marine-based biopolymers and bio-attractants for the development of artificial fish baits

- The study revealed that the gelatin derived from fish wastes can be very well utilized for the production of biodegradable artificial fish bait matrix.
- RSM was adopted to optimize the levels of gelling agent, cross linker and solvent for the preparation of bait matrix. Gel strength and insolubility ratio were analyzed to know the suitability of the bait.
- Biochemical composition of fish wastes (heads, skins, fins and scales) and the gelatin derived from the wastes of corresponding body parts and physicochemical properties of fish gelatin were analyzed.
- Considering high yield (19.8-22.4%), good gel strength (1.99-2.3N), high melting point (27^0C) and simple extraction process, the scale gelatin was selected for the development of artificial fish bait matrix.
- The gel strength, insolubility ratio and melting point of artificial fish habit matrix was ranged from 1.3-23.5N, 55-83%, 34.3°C-41.1°C, respectively. The optimum levels of ingredients for the preparation of ideal bait matrix were standardized as: gelatin-25.5%, sucrose-22.5%, and water-52%.
- The curing temperature and curing duration were optimized based on the optimum gel strength (20.84N) and insolubility ratio. The study revealed that a developed fish bait matrixs suitable for fishing and can be made from gelatin derived from fish wastes.

Postgraduate research - Application of advanced processing technologies for the development of seaweed based products

- The study revealed that seaweeds are promising source for the development of seaweed based products.
- A total of 14 seaweed species were used for the study purpose. Seaweeds extraction using various solvents and enzyme (enzymatic extraction) was carried out indicating that 80% solvent extraction was more efficient compared to other concentrations.
- Antioxidant assays revealed that Total Phenolic Content varied from 223.39 to 1158.06 mg GAE/ sample. The radical scavenging activity for DPPH and ABTS expressed as RSA% and it ranged from 14.13-51.94% and 20.27–93.08%, respectively. The results of FRAP for different seaweeds extracts showed the Abs range of 0.14-0.40 @ 700nm.
- Nutritional profiling of various seaweed species collected from Mandapam and Tuticorin was done. Colour evaluation of seaweed samples using

Hunter Colorimeter and elemental analysis using ICP-OES was carried out.

- Antimicrobial assay revealed the development of prominent zone of inhibition against *E. faecalis, P. aerugenosa* and *S. aureus* in deep eutectic solvent.

Postgraduate research - Microwave processing for drying, blanching and thawing of shrimp (*Metapenaeus dobsonii*): Evaluation and quality characterization

- The shelf-life of shrimps stored under air, vacuum, MAP packaging and sous vide technology was assessed.
- The biochemical, microbiological, sensory and textural quality for fresh and freeze dried shrimps were assessed.
- The different thawing condition such as air, water, refrigerated & microwave thawing process was optimized for shrimps
- The zeta potential and particle size of different thawed conditions for shrimp were analyzed.

Microwave dried Shrimp

Sun dried Shrimp

Post graduate research - Development of Improved biodegradable packaging film from chitosan and seaweed polysaccharides as an alternative to plastic packaging

- Box–Behnken Model was applied to the concentration of three independent variables viz. agar (1.0–2.0% w/v), alginate (1.0–2.0% w/v) and carrageenan (1.0–2.0 % w/v). The glycerol was used as a plasticizer and kept constant (25%w/w) for total solid mass. The overall desirability function fits with the quadratic model at 99.78% level of significance. The absolute residual error (1.04 to 3.37 %) of experimental and predicted response was also validated. Attenuated Total Reflection – Fourier Transform Infrared spectroscopy confirmed the interactions. The shift in crystalline nature of composite film was confirmed by XRD. The 3D image of Atomic Force Microscopy showed layer by layer assembly of inter molecules at 310 nm resolution.
- The Box– Behnken Model Design was applied to optimize the concentration of chitosan (1.0 – 2.0% w/v), agar (1.0 – 2.0% (w/v) and glycerol (0.1 – 0.5% w/v) as independent variables to achieve the goal. The overall desirability function fits with quadratic model (0.862043) at significant ($p < 0.05$) level for the optimum concentration to obtain the minimum water vapor permeability (7.25 10-10g m m^{-2} Pa^{-1} s^{-1}) and maximum tensile strength (12.21 Ma P), elongation at break (7.32%) and puncture resistance (16.18 N) in the optimized composite film. The absolute residual errors of experimental and predicted responses were between 1.24 and 3.56 % acceptable levels.
- Attenuated Total Reflection – Fourier Transform Infrared spectroscopy confirmed the intermolecular non-covalent hydrogen bond between hydroxyl group of agar and glycerol with amino group of chitosan. 3D Atomic Force Microscope image revealed that the chitosan, agar and glycerol film have layer by layer smooth surface properties due to homogenous interaction among the polysaccharides.

Comparison of 8th day stored seer fish streaks in commercially plastic and agar alginate carrageenan (biodegradable) film

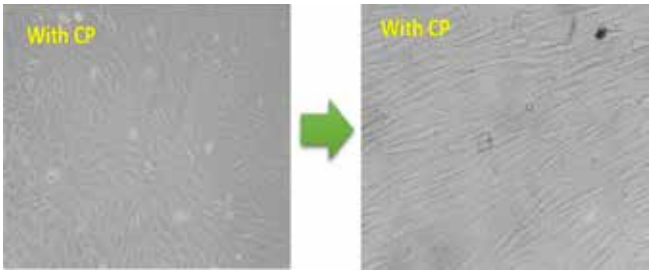
5. Department of Fish Quality Assurance and Management

DBT Project - Bio-prospecting for anti-osteoporotic collagen peptides derived from fish bones

- MC3T3-E1 osteoblast cell proliferation was maximum in collagen peptide (CP) treated cells with 100 ppm on 7th day and further increase in concentration caused cell death. Cells exhibited differentiation on 7th day. CP treated cells showed 1.5 folds more differentiation than control. CP treated cells are more elongated than control cells.

Cellular level of alkaline phosphatase (ALP) was two folds higher in CP treated osteoblastic cells. It shows alkaline phosphatase was significantly up-regulated in CP treated osteoblast cells, substantiating osteogenic differentiation ability. High level of nodular red precipitate seen in extracellular matrix of 100 ppm CP treated cells after 14 days in bone mineralization assay.

- MC3T3-E1 cell proliferation was maximum at 200 ppm concentration on 7th day in sodium alginate (SA) encapsulated CP. In other ECPs, it was high at 100 ppm concentration. In gum arabic (GA)-ECP, cell proliferation was poor compared with control and CP. Cell proliferation was maximum in soy protein isolate (SPI)-ECP followed by mannitol (MAN)-ECP. It was 2 times higher in SPI-ECP and 1.5 times higher in MAC-ECP. Cell differentiation was maximum in **SPI-ECP** followed by **MAN-ECP**. It was 2 times higher in SPI-ECP and 1.5 times higher in MAC-ECP. Bone mineralization was high in **SPI-ECP** and **MAN-ECP** on 7th day, 14th day and 21st day **and very high in SPI-ECP** on 21st day than MAN-ECP. Alkaline phosphatase activity was maximum in **SPI-ECP** followed by **MAN-ECP. It was** 2 times higher in SPI-ECP and 1.5 times higher in MAC-ECP than control.
- FBCP has been proven to have food osteogenic properties by proliferation and differentiation assays, bone mineralization and alkaline phosphatase activity. Encapsulation of CP with soy protein isolate and mannitol has proven much more efficient than other encapsulated CPs. Soy-protein isolate CPs exhibited more osteogenic property than MAN-ECP, while mannitol encapsulated CPs are less hygroscopic than SPI-ECP.



Cell differentiation of CP treated osteoblast cells

Bone mineralization of encapsulated CP treated osteoblast cells

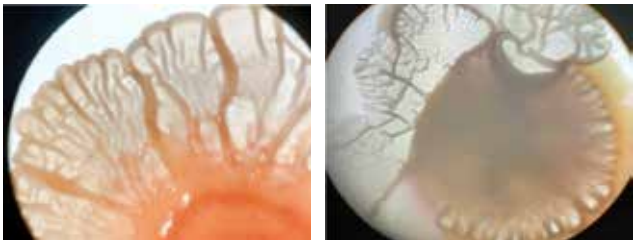
FSSAI Project - Monitoring of heavy metals in fish and shellfish species along the Indian coast and possible mitigation measures

- Risk assessment due to consumption of heavy metal contaminated fish and shellfish was assessed among the fish consumers of the Thoothukudi region.
- Target Hazard Quotient (THQ) above 1 was recorded in rock crab, *Charybdis natator*. THQ above 1 indicates non carcinogenic risk upon prolonged consumption.
- Carcinogenic risk (limit E-04 to E-06) was observed due to prolonged consumption of grey bamboo shark, *Chiloscyllium griseum* due to Cd contamination.

Postgraduate Research - Investigation on the factors affecting the biofilm forming *Salmonella* associated with seafood contact surfaces and their control

- Swab samples and source samples were collected from seafood contact surfaces of different seafood handling places.
- *Salmonella. sp* were isolated from collected swab (92) and source (26) samples.
- Out of 34 suspected isolates, only 15 were confirmed as *Salmonella.*
- Biofilm forming ability of isolates were tested by Congo red agar. Biofilm forming ability of isolates were checked with Muller Hinton agar supplemented with 0.08 % Congo red. Out of 12 Swab samples, 3 were confirmed as biofilm forming *Salmonella* by congo red agar.

Collection of Swab Samples



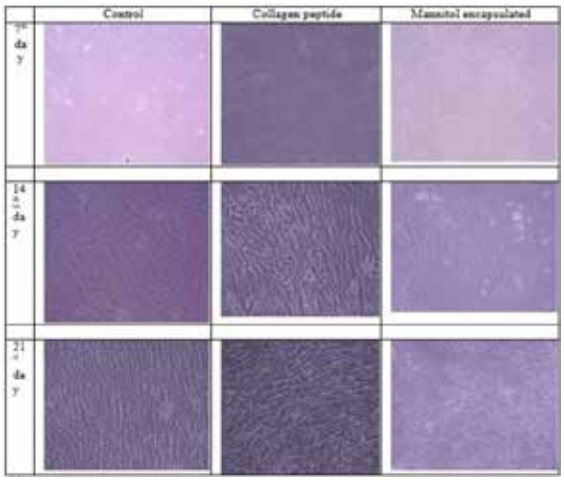
Morphotype of biofilm forming *Salmonella* on Congo Red Agar

Postgraduate Research - Safety assessment of chemical contaminants in farmed shrimp, *Penaeus vannamei* along the Southeast coast of Peninsular India

- Water, sediment, shrimp, and feed were collected from different shrimp farms located at Thoothukudi, Ramanathapuram, Pudukottai, and Nagapattinam regions from November to February (winter season crop).
- The samples were collected from post-larval size (PL-11) to harvestable size.
- The water quality parameters such as pH, temperature, salinity, hardness, alkalinity, ammonia were analyzed.
- The shrimp samples were subjected to different heat processing methods such as boiling, frying, grilling, and microwave oven cooking to study pollutants fate during cooking.
- For heavy metals, antibiotics, and pesticides analysis, all the samples were digested/extracted and stored at -20° C for further analysis.

Post graduate Research - Physico chemical and functional characteristics of micro encapsulated anti-osteoporetic fish bone collagen peptides

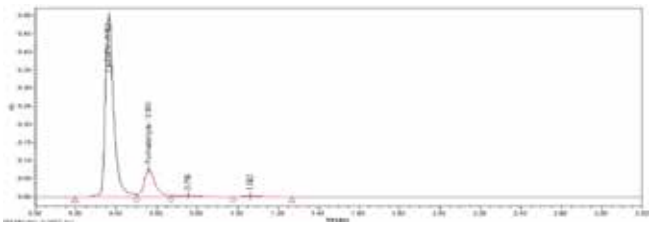
- Fish bone collagen hydrolysate (FBCH) prepared by hydrolysis of fish bone using 1% alcalase at 55°C for 3 h gives the maximum degree of hydrolysis of 8.66 ± 0.47%.
- Lyophilized FBCP was light yellow in colour with bitterness and it contained 74.31 ± 2.1% protein and 19.66 ± 2.4% minerals. Molecular mass of FBCP by tricine-SDS-PAGE was below 1 kDa.
- Amino acid profile analysis showed that FBCP contains a total of eight essential amino acids (EAA). Hyp (4.80g/100g) and Gly (3.72g/ 100g) are the major amino acids. Mineral compositional analysis revealed that FBCP contained Ca, Mg and Fe at 13.9, 25.0 and 0.7 mg/100g, respectively.
- FTIR spectrum analysis showed FBCP possesses amide A peak at 3398 cm^{-1}, amide B peak at 2925 cm^{-1}, amide I peak at 1656 cm^{-1}, and amide II peak at 1564 cm^{-1}. The absence of amide III peak distinguishes FBCP from that of fish bone collagen.
- Encapsulation helps to produce FBCP with no bitter taste and less hygroscopic in nature. Spray drying is best for encapsulation of FBCP with carriers viz. soy protein isolate (SPI), and mannitol (MAN).
- Anti-osteoporotic properties studied in mouse pre-osteoblast cell line MC3T3-E1 proves that SPI-ECP and MAN-ECP microcapsules has enhanced cell proliferation at 100 µg/ml concentration and it showed osteogenic differentiation on 7th day and bone mineralization on 14th day along with expression of high alkaline phosphatase activity, a molecular marker to prove osteogenesis.



Postgraduate Research - Investigation on free and bound formalin contamination in commercially important fishes of Tamil Nadu

- A chromatographic method for detection of formaldehyde using UPLC was developed. The modified rapid extraction procedure involving derivatization with 2-4 dinitrophenyl hydrazine at 60^{0}C was developed and standardized. The developed UPLC method has a run time of only 3 min. A separate DNPH peak was observed at 0.355 min. This was followed by formaldehyde peak at 0.561 min.
- The method was validated and the recovery of free and bound formaldehyde was 90.83 to 116.14% and 87.76 to 132.96%, respectively. The correlation coefficient (R^2) of the linear curve obtained for free

and bound FA was 0.989 and 0.997, respectively. The method has good repeatability with CV (%) of 5.95.



Chromatograph of Reference Formaldehyde Standard at 10 ppm

- Among the commercially important fishes, the highest formaldehyde concentration was recorded in barracuda collected from selected fish markets of Tamil Nadu. Fishes from interior markets recorded higher concentration of formaline when compared to those from coastal region.
- The formaldehyde concentration was increased during iced and frozen storage.
- Fishes treated with different concentrations of formaldehyde solution indicated that they absorbed only 8 to 10 % of treated formaldehyde.
- It was observed that the slime layer of fish was completely removed after treatment with formaldehyde solution.
- Cooking of the formaldehyde treated fish samples showed negligible decrease in formaldehyde concentration.
- Washing of formaldehyde treated fish after soaking in water for different time intervals indicated a reduction of formaldehyde concentration by 41 to 60%.

Postgraduate Research - Investigation of trans fat accumulation in farmed and wild shrimps

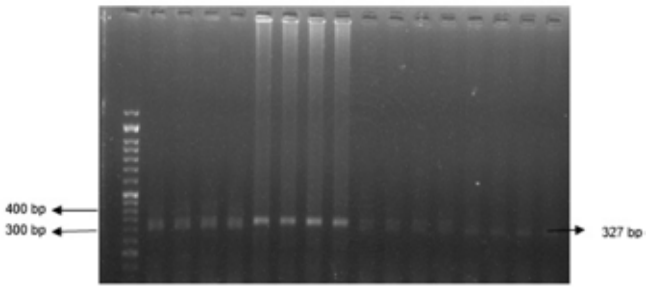
- The fat content in wild shrimps and farmed shrimp varied between 0.48 and 0.80% 0.29 to 1.17%, respectively.

Farmed shrimp, ***Penaeus vannamei***

- The fatty acid profile of wild shrimps showed that the polyunsaturated fatty acids (PUFA), Saturated fatty acids (SFA) and MUFA ranged from 38.74 to 43.15%; 30.62 to 33.31%, 21.19 to 26.83%, respectively. Two trans fatty acids such as elaidic acid and pentadecenoate acid (C15:1) were detected at a concentration ranging from 7.96 to 9.11%.
- The fatty acid profile of farmed shrimps showed that PUFAs, SFA and MUFA were ranged from 38.66 to 49.37% , 28.04 to 33.12% and 16.30 to 22.56%, respectively. Elaidic acid (C18:1t) and pentadecenoate acid (C15:1t) were the two TFAs detected at concentration ranging from 9.74 to 15.46%,
- The fatty acid profile of the shrimp feeds showed that PUFAs, SFA, MUFA were ranged from 37.81 to 43.04%, 27.99 to 34.32%, 22.93 to 27.01%, respectively. The trans fat content of the feeds varied between 17.38 and 26.18% and the two TFAs are elaidic acid (MUFA) and palmitelaidate acid (PUFA).
- The average trans fat content of wild shrimps was 8.53 ± 0.50% and in farmed shrimps was 12.30 ± 1.70%.
- The bioaccumulation factor (BAF) of trans fats was calculated and it showed that 37-79% of the trans fat gets incorporated in shrimp muscle tissues from the feed.
- Characterization of shrimp lipid using TLC plates revealed that shrimp lipid is composed of phospholipids (PL), cholesterol (C), free fatty acids (FFA), triacylglycerides (TAG) and cholesteryl esters (CE).
- Column chromatography is used to quantify each lipid classes and shrimp lipids are consisted of PL fraction (55.96%), CE (29.69%), C+TAG fractions (11.82%) and FFA (2.53%).
- The different lipid fractions analyzed by GC-FID to find out the fatty acid profiles, indicated that trans fat (59.80%) was mainly accumulated in the PL fraction, and slightly less in other fractions viz., 19.52% in the CE fraction, 17.95% in C+TGA and 8.75% in the FFA fraction.

Postgraduate Research - Development of PCR-based assay for detection of shrimp allergen tropomyosin cross-contamination with processed squid and fish

- Total DNA was extracted from shrimp, fish and squid samples as per the Phenol-chloroform method. The method resulted in high yield of nucleic acids from raw fresh tissue ranging from 520-853 ng/µl. The DNA yield was 410-727 ng/µl, 379-688 ng/µl, 328-629 ng/µl in frozon, cooked and fried seafood, respectively. The DNA yield from processed samples was slightly lower than in raw samples.
- Among eight sets of primers designed, only one set of primer (Tmp N2 F:5′-GCGAGGAAGCCTACAAGGAG-3′; Tmp N2 R: 5′-CCAGACAGTTCGCTGAAAG-3′) detected shrimp allergen tropomyosin from the four shrimp species (*Penaeus vannamei, Penaeus monodon, Fenneropenaeus indicus,* and *Fenneropenaeus merguiensis*).
- The optimised PCR condition was initial denaturation at 94^{0}C for 1 min followed by 35 cycles for denaturation at 94^{0}C for 25s, annealing at 53.3^{0}C for 25s, polymerisation at 72^{0}C for 30s, and extension at 72^{0}C for 2 min.
- The successful primer (Tmp N2) set targeted the shrimp allergen tropomyosin, which yielded a product size of 327 bp, and it was successfully amplified in raw as well as in processed shrimps.
- The developed PCR assay was specific for shrimp allergen tropomyosin in all four selected shrimp species and it did not amplify any non-targeted shrimps, including squids and fishes, both in raw and processed forms.
- On validation of the developed PCR assay, six fish product samples viz., Tuna chunks in brine, Garlic fish, Fish pepper fry, Fish 65, Fish manchurian dry, and Fish fingers, showed possible cross-contamination with shrimp allergen tropomyosin.



PCR amplification of shrimp tropomyosin gene in shrimp products. Lane 1 - 50 bp DNA marker; Lanes 2 to 5 – *Penaeus monodon*(2 Raw, 3 Frozen, 4 Fried, 5 Cooked); Lanes 6 to 9 – *Penaeus vannamei* (6 Raw, 7 Frozen, 8 Fried, 9 Cooked); Lanes 10 to 13-*Fenneropenaeus indicus*(10 Raw, 11 Frozen, 12 Fried, 13 Cooked); Lanes 14 to 17 – *Fenneropenaeus merguiensis*(14 Raw, 15 Frozen, 16 Fried, 17 Cooked)

6. Department of Fishing Technology and Fisheries Engineering

TNJFU University Research project - Assessment of CO_2 emission from motorized fishing vessels of Thoothukudi Coast

- Small sized motorized vessels of the Mottakopuram fishing village release CO_2 to the tune of 97473 kg.
- Medium sized motorized vessels of the Mottakopuram fishing village release CO_2 to the tune of 156621kg.
- Large sized motorized vessels of the Mottakopuram fishing village release CO_2 to the tune of 374785 kg.
- Small and medium sized motorized vessels of the Inigo nagar fishing village release CO_2 to the tune of 34548 kg and 707314 kg, respectively.
- Large sized motorized vessels of the Inigo nagar fishing village release CO_2 to the tune of 294541 kg.

Postgraduate Research - Study on crab fishing along Ramanathapuram

- Fishing crafts involved in crab fishing along Ramanathapuram coast were motorized wooden vallam (13.41 to 18.28 m OAL), non – motorized vathai, trawlers (12.19 to 27.43 m OAL) and FRP boats (8.22 to 10.05 m OAL).
- Gears employed for crab fishing along Ramanathapuram coast included large bottom set gillnet (mesh size: 80 to 110 mm), trammel net (inner mesh size: 35 – 70 mm and outer mesh size: 180 to 350 mm), country trawl net (cod end mesh size: 18 – 20 mm) and trawl nets (codend mesh size: 20 mm).

- Bottom set gillnet is being operated to target the crab fishery resources and other gears catches crab as by-catch.
- Crab fishery of Palk Bay was supported only by *P. pelagicus*, while in Gulf of Mannar crab fishery was supported by three species namely *P. pelagicus, P. sanguinolentus* and *C. natator*.
- Total crab landings along Ramanathapuram coast were estimated as 1083.11 tonnes from November 2019 to October 2020, in which Palk bay shared 551.078 tonnes (50.88%) and Gulf of Mannar shared 532.032 tonnes (49.12%).
- Total crab landings along Gulf of Mannar coast were estimated as 532.032 tonnes in which *P. pelagicus, P. sanguinolentus, C. natator* shared 81.37%, 7.96% and 10.67% of the total crab landings.

7. Department of Fisheries Extension, Economics and Statistics

Post graduate research - Extension Services for augmenting the adoption of aquaculture technologies: A study on the livelihood opportunities of the fish farmers in the Northern Region of West Bengal

- The socioeconomic profile of fish farmers in the study showed that majority of the fish farmers had medium level of age, education, experience, scientific orientation, innovativeness etc.
- The study on knowledge and adoption level of aquaculture technologies by the fish farmers revealed that majority of the fish farmers had medium level of knowledge (70%) as well as medium level of adoption (48.13%).
- As for the present aquaculture and livelihood activities of the fish farmers concerned, more than four-fifths of the respondents were engaged in composite fish farming, while 43.75 % were involved in duck-cum-fish farming. Around 50 % of fish farmers were engaged in Jhora fishery.
- The majority of the fish farmers reported that the selected extension services were suitable for aquaculture and livelihood improvement. This include providing information on feed and seed availability, offering timely training programmes, information on sources of credit availability etc. Overall, 24.94, 35.11 and 39.95 % of fish farmers found that the selected extension methods, such as individual, group and mass was found to be highly suitable, suitable and unsuitable, respectively.
- The constraints faced by the fish farmers include, non-availability of the quality feed, high price of the fish feed, less availability of quality seed etc. The major suggestion given by the fish farmers are construction of feed mills, construction of private hatcheries, better marketing facilities etc.

Postgraduate research - A critical analysis of factors influencing the managerial efficiency of shrimp farmers of Nagapattinam district

- The socio-economic profile of shrimp farmers in this study denoted that majority of the shrimp farmers had medium level of their age group, annual income, experience in shrimp farming, farm size etc.
- The managerial efficiency of shrimp farmers in this study revealed that majority of the shrimp farmers had medium level (72.67%) knowledge in their farm best management practices like ability in planning, ability to make rational decision, timely adoption, ability to mobilize resource, ability to coordinate activities, efficient use of resource, ability in rational marketing, competence in evaluation and budgeting skill.

- This study found out the managerial gap of the shrimp farmers in their best farm management practices. Nearly 27.33 % of the farmers were found gap in the farm best management practices like ability in rational marketing, ability to coordinate activities, ability to make rational decision and budgeting skills.
- The farmers offered the constraints and suggestion for this study includes disease incidence, price fluctuation, poor seed quality and seed certifying agencies by Govt and establishing disease diagnostic centres.


Post graduate Research - A critical analysis of economic and marketing efficiency of freshwater fish culture in Manipur

- Freshwater fish culture activity was highly dominated by males (96.7%) with an average farming experience of 12 years. The present contribution of fish farmers belong SC and ST, Meitei and Tangkhulcaste were 70%, 66.7% and 33.3%, respectively.
- About 88.9% of the reported fish farmers has fishery as their primary occupation, followed by other occupations (8.9%) and agriculture (2.2%). Membership in farmer's association was found to be lower (33.3 %).
- All the fish farmers (100%) were undertaking freshwater culture following semi-intensive farming practice and single ownership lies with 98.9% of the reported farmers. It was also noted that 77.8 % of the fish farmers were taking up only one crop per year.
- The average total cost, total returns and net returns for fish culture in farms accounted to Rs. 1.33 lakhs, Rs. 3.13 lakhs and Rs. 1.81 lakhs, respectively and for Phumdi farming, the respective estimated costs were Rs. 1.17 lakhs, Rs. 3.69 lakhs and Rs. 2.52 lakhs, respectively. The benefit cost ratio was calculated on total cost basis and the estimated ratio for fish culture in farms and Phumdi farming were 2.37 and 3.16, respectively. This indicates the profitability of the freshwater fish culture activity in Manipur.
- Four types of channels were observed in which Channel I (43.3%) and Channel IV (23.3%) were predominant. The estimated marketing efficiency was estimated using Calkin's Index approach (3.27). This value indicates the greater marketing efficiency for the freshwater fishes farmed in Manipur.
- The price spread was found higher for silver carp common carp and grass carp. The marketing cost was found higher for wholesalers than the retailers. Similarly, the calculated marketing margin was higher for wholesalers than the retailers amounting to Rs. 17.54/kg and Rs. 13.94/kg, respectively.
- Absence of technically skilled person, lack of government support, low farm gate price, inappropriate use of available resources, lack of knowledge in fish culture were identified as the most significant constraints by the Manipur farmers.


Primary data collection from a fish farmer in Ukhrul district


Phumdi farming in Loktak lake of Bishnupur district

Dr. M.G.R. Fisheries College and Research Institute, Ponneri

1. Department of Aquaculture

NADP Project - Establishment of Recirculatory Seabass Aquaculture Technology Park for doubling the income with low water budgeting

- Three numbers of RAS Units were established at ARFF, Madhavaram.
- The protein and lipid requirement for seabass rearing in freshwater was standardized.
- The stocking of Asian seabass in RAS system at 4 kg/m^3 was standardized.
- Nursery rearing of asian seabass was standardized in freshwater.


Postgraduate Research - Effect of dietary supplementation of biofloc powder on growth, digestive enzyme activity and disease resistance of *Penaeus vannamei* in Recirculatory Aquaculture System (RAS)

- The biofloc was produced using jaggery as carbon source at 20:1 C/N ratio in outdoor biofloc production tanks. This is used for the preparation of experimental diets at different inclusion levels such as 5 % (T1), 10% (T2) 15% (T3) 20 % (T4) with 0 % control.
- The study with dietary supplementation of biofloc powder at 15 % level had beneficial effects on bio growth performance of *Penaeus vannmei* in RAS based system.
- Moreover, 15% (T3) showed higher disease resistance against V.*parahaemolyticus* with high survival rate and it significantly differed from other treatments and control.
- Dietary supplementation of biofloc powder enhanced the digestive enzymes.
- Biofloc powder diet improved the disease resistance against bacterial infections.


Biofloc production


collection of biofloc


RAS experimental setup


sampling

2. Department of: Fish Processing Technology

NADP Project - Creating a Platform "Kayalagam" – The Future Store for Amplification of Marketing of Diversified Fish Products in Tamil Nadu

- Construction of retail outlet Kayalagam at Madhavaram campus was completed and inaugurated by Prof. G. Sugumar, Honorable Vice Chancellor, Tamil Nadu Dr J Jayalalithaa Fisheries University, Nagapattinam on 21.01.2021.


- Construction of retail outlet Kayalagam at TNJFU-DSA, Thanjavur was completed and inaugurated by Prof. G. Sugumar, Honorable Vice Chancellor, Tamil Nadu Dr J Jayalalithaa Fisheries University, Nagapattinam on 24.02.2021.


- Construction of Fish processing business incubation centre at FCRI, Thoothukudi was completed and put into use.


- Construction of fish quality testing laboratory at Dr. M.G.R. FCRI, Ponneri was completed.

Postgraduate Research - Study on the Potential of Ohmic Heating in Preservation of Green Mussel Meat

- A lab scale Ohmic heater was designed and fabricated using stainless steel cylindroconical process chamber with one litre holding capacity fixed with a pair of titanium electrodes in the process chamber.
- The Ohmic heater was validated by processing green mussel meat at varying voltage and duration of heating process.
- Different voltages viz. 100V and 120V were attempted for process duration of 5 and 10 minutes.
- The processed mussel meat was tested for physical, biochemical, microbial and organoleptic quality to understand the effectiveness of Ohmic heating to make the product safe for consumption.
- Based on the trials undertaken with mussel meat, Ohmic heating at 120 voltage for 5 minutes was found to be suitable to meet out all the quality prerequisites and retention of nutrients.

Installed ohmic heater

Ohmic heated mussel meat preserved in 3 & 5% brine, stored at refrigerated temperature

Postgraduate Research- Process optimization and production of squid based extruded millet snack using Response surface Methodology

- The optimal processing parameter was determined as 64^{0}C of heater 1 temperature, 130°C of heater 2 temperature, 317 rpm of screw speed and 6.5% inclusion of squid powder.
- The essential amino acid was found 141.30% higher in squid and millet based extrudate compared to control extrudate. The crude protein was found 117.36% higher in squid and millet extrudate than control extrudate.
- The essential fatty acids were found 34.73% higher in squid and millet extrudate comparing to control extrudate.
- The protein, iron, fat, magnesium and zinc contents of squid and millet based extrudate was higher than control extrudate.
- As the biochemical quality changes, TBA and FFA value and microbial count was showing lower value than the safety limit during storage of 90 days. Thus, the product can be used for more than 90 days than estimated storage period.
- The nitrogen packaging of extrudates can be used for minimal loss of nutrients than air packaging technology.

Squid and millet extrudate

3. Department of Aquatic Environment Management

TANII Project - Artificial Coral Reef / Live Rock (ACR / LR) and Fish Aggregating Artificial Reef (FAAR) to Enhance Fish Diversity and Biomass in the Sea Near PulicatLake Towards Fishing Pressure Reduction and Livelihood Improvement of Fisherfolk in the Lake Region

- The initial survey was conducted in order to get the baseline information of fish catches and the availability of variety of organisms in this region. The survey was taken through direct questionnaire method from the fisherman of Pazhaverkadu.
- Preliminary sampling was conducted in order to get better understanding of bottom characteristics and species assemblage in the area where artificial coral reefs are supposed to be deployed. The sampling was conducted on 09.02.2021 and 19.03.2021 on the near shore area of Pazhaverkadu.
- The preliminary assessment on benthic profiling and bottom sediment characteristics were checked to analyze whether the site is suitable for AR deployment.
- During sampling, water samples and bottom sediment samples were collected for further

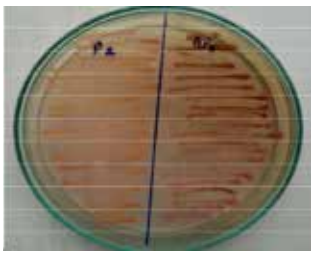
analysis. Underwater videos and photographs were taken using SCUBA. Both visual and laboratory studies revealed the presence of Molluscan diversity in all the four sites, especially clam species *Phaphia* was most commonly available species.

Collection of sediment samples

Postgraduate Research - Screening of Nitrogen and Phosphorus Mobilizing Bacteria in Mangroves of Ennore Region and their role in Nutrient Cycling

- 16 isolates of PPB, 6 isolates of PSB, 19 isolates of AOB and 14 isolates of NOB were maintained.
- The Alkaline phosphatase activity of PPB isolates was assessed and optimized under different environmental conditions
- The efficiency of bacterial isolates in N and P mobilization was studied.

PSB Isolates



PPB Isolates

Ammonia removal efficiency

Nitrite removal efficiency

Postgraduate Research - An evaluation of fish waste and seaweed liquid as an organic combo for micro algal cultivation and carbon sequestration

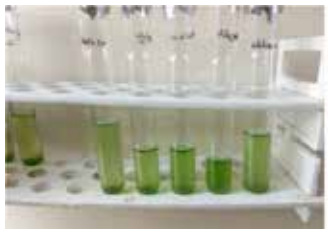
- Pure culture of *Chlorella sp*. and *Spirulina sp*. were maintained in the laboratory.
- Fish waste was collected and prepared 4 types of fish liquid fertilizer using 4 different procedures.
- Seaweed was collected, dried and crushed into powder form and prepared 2 types of seaweed liquid fertilizer.
- Biochemical composition was analyzed.

Fish liquid fertilizer

Seaweed Hydrolysate

Postgraduate Research - Comparison of carbon dioxide scrubbing potential of microalgae (*Scenedesmus sp.* and *Chlorella sp.)* with special orientation of edible oil extraction

- The pure algal strain of *Chlorella* was cultured in small scale level like test-tube , 50 ml, 250ml conical flask and 2l flasks.
- The carbon dioxide scrubbing potential level in mass culture of *Chlorella* sp. was estimated using the light and dark bottle method.
- FRP tank was provided with PVC pipe and inserted with air tube for water circulation.
- On 20th day, gross primary production of 82.45 mg/C/m^3/hr with the algal density of about 23×10^{4}cells/ml was achived.



Chlorella pure culture

4. Department of Fisheries Resource Management

Postgraduate Research - Biodiversity, biology and fishery of elasmobranchs along the Coromandel coast of Tamil Nadu, Southeast India

- The various elasmobranch species were collected and recoreded fortnightly from Royapuram

(Chennai), Cuddalore and Nagapattinam landing centres (June, 2019 to May, 2020). The data were pooled season-wise and analysed using PRIMER v7software. A total of 67 species of elasmobranchs under 7 orders, 21 families, and 46 genera were recorded with the genus *Carcharhinus* having the largest representation (14 species).

- The total number of species (S) recorded was highest at Royapuram (67), followed by Nagapattinam (44) and Cuddalore (43). Shannon-Wiener diversity index (H') and Margalef species richness (d) were 4.16 and 8.08 at Royapuram; 4.10 and 5.91 at Cuddalore; 3.73 and 5.47 at Nagapattinam, respectively.
- The highest 'd' value was observed during monsoon (7.96) and the lowest was observed during summer (5.38).
- Higher values of taxonomic diversity index were observed at Nagapattinam (63.62) and Royapuram (62.56).
- The seasonal variability in BC (Bray-Curtis) similarity index was highest between summer and post-monsoon in Cuddalore; monsoon and post-monsoon in Nagapattinam and pre-monsoon and post-monsoon in Royapuram.

Biodiversity, biology and fishery of elasmobranchs Study area along the Coromandel coast

Research scholar carrying the *Carcharhinus altimus* shark

Postgraduate Research - Assessment of shellfish bycatch of trawl net fishery of Chennai coast

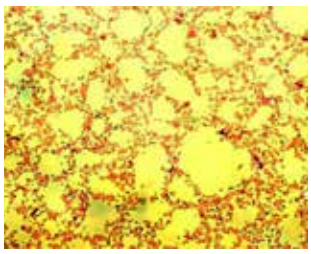
- Shellfish specimens were collected from Royapuram Fishing Harbour (Kasimedu Fish Market) fortnightly.
- A total of 133 species of shellfishes belonging to four classes, 16 orders, 61 families and 100 genera were recorded from the shellfish bycatch of trawl net fishing of Chennai coast.
- Among these orders, Decapoda contributed about 35% (47 species), followed by Neogastropoda (18.10%, 24 species), Littorinimorpha (14.30%, 20 species), Venerida (8%, 11 species), Arcida (5%, 6 species), Cardiida (5%, 7 species) and Stomatopoda (4.5%, 6 species).
- The maximum number of species was recorded in September (82), followed by November and December (each 77). The minimum number was recorded in April (44), followed by March (46).
- A scheduled species, *Placuna placenta* (Windowpane oyster) was recorded in the bycatch landing of Kasimedu Fish Market.

Shellfish specimens were collected from oyapuram Fishing Harbour

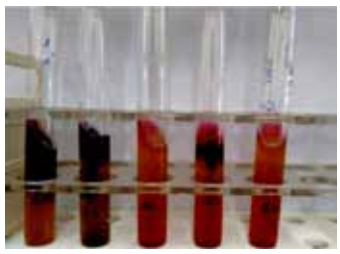
5. Department of Aquatic Animal Health Management

Postgraduate Research - Pathogenicity and immune response in *Oreochromis niloticus* experimetally infected with *Shewanella putrefaciens*

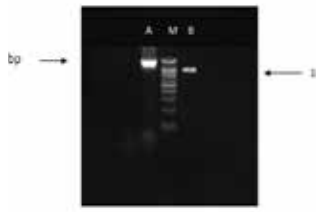
- *Shewanella putrefaciens* infection in Nile tilapia causes histopathological, hematological and immunological change in *O.niloticus*.
- Histopathological changes were observed in brain, gills, kidney, liver, intestine and muscle. However, no changes was observed in eye.
- The hematological and immunological changes caused by Shewenellosis infection has been documented in Nile Tilapia for the first time.



Bacterial Isolates



H_2S Production



PCR Confirmation

Experimental Infection

Postgraduate Research - Diagnosis, Treatment and Immune response in *Penaeus vannamei* infected with *Enterocytozoon hepatopenaei* causing hepato pancreatic microsporidiasis

- *P. vannamei* experimentally infected with EHP spores were showed positive for EHP after 24 h Post Infection.
- The immune parameters were significantly decreased during EHP infection.
- The trial 2 with prolonged bath of Albendazole (1, 5, 10, 25, 50, 75 and 100mg/l) showed a maximum reduction in EHP. Since, abnormal behaviours were observed in 100 mg/l of albendazole treatment, it is suitable to follow the bath with 75 mg/l of albendazole for treatment of EHP.

Penaeus vannamei

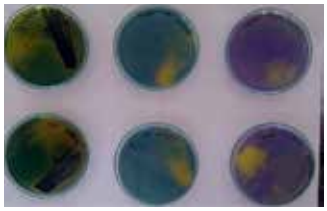
Experimental infection

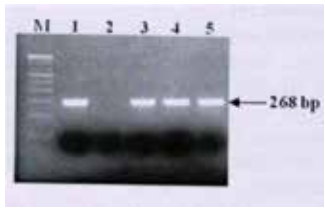
Dr. M.G.R. Fisheries College and Research Institute, Thalainayeru

Fish Processing Technology

DST – SERB Project - Re-emergence of *V.vulnificus* risk in seafood safety in response to climatic changes

- A total of 636 seafood samples were analyzed for the presence of pathogen *V. vulnificus.*
- *V. vulnificus* isolates were found to be harboring pathogenic virulence genes like vvhA, rtx and C and P genotypes.
- The virulence of *V. vulnificus* isolates was tested in which 421 isolates were found to possess cytolysin, vvhA and repeat in toxin, rtx gene, while 385 isolates were found to contain c genotypes.
- *V. vulnificus* was found to be abundant during September to December and less during post monsoon months. High prevalence of *V. vulnificus* was obtained in station I (Nagapattinam) followed by station III (Thoothukudi).
- The results of this study showed higher presence of pathogenic *V. vulnificus* in seafood.



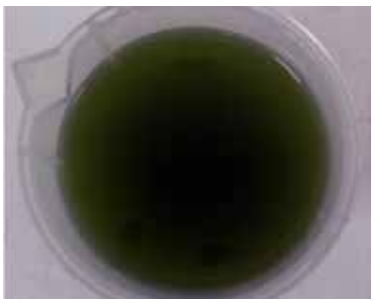


JTRF Project - Development and Standardization of health drink from biomodulated chitosan

- The chitosan based health drink was developed and standardized.
- The water soluble chitosan (WSC) using shrimp shell waste was developed.
- Extracted WSC was incorporated in the different products at the rate of 1% in Orange syrup, Grape syrup and Veg soup.
- WSC was also incorporated in the Health Mix at the rate of 8%. The proximate composition of developed Health mix from biomodulated Chitosan was analyzed.
- Approached SASTRA University regarding the update of the Ethical committee for animal trial.

TNJFU University Research project - Formulation of Ulva based jam products

- The proximate composition of fresh *Ulva* seaweed was analyzed.
- The nutritional composition such as energy, carbohydrate, protein, sugar, pH, vitamin C and mineral composition such as calcium, magnesium, iron, sodium and phosphorous was analyzed.
- Sensory evaluation was done for the prepared *Ulva* jam vs commercial jam.
- Shelf life study of the prepared *Ulva* jam at refrigerated and room temperature is in progress.



COLLEGE OF FISHERIES ENGINEERING, NAGAPATTINAM

1. Department of Basic Sciences

JTRF Project - Development of halochromic sensor-based on bionanocomposite for monitoring spoilage of packaged fish

- Halochromic biosensors from natural polymers, natural dye, and silver nanoparticle were successfully prepared from materials of natural origin.
- The biosensors were characterized by SEM, SEM-EDS, EDS mapping, XRD, and color measurements.
- The biodegradability of the sensor was tested and the results indicated that the approximately 60% of degradability in soil was achieved in two weeks.
- Similarly, halochromic sensors were prepared using pH sensitive dyes.

JTRF Project - Development of bio-piezoelectric nano-generator from crustacean shell waste

- The maximum absorption peak was observed at a wavelength of 276 nm for shrimp and crab shell.
- The developed bio-piezoelectric materials were characterized by UV absorption, FTIR, Raman spectroscopy and electrical measurement.
- The flexibility and transparency of the processed shells is more. So, it can be used in industries for energy production, where the pressure generation is high.

Shrimp Shell

Crab shell

2. Department of Aquacultural Engineering

B.Tech Research Project - A Study on Economically Feasible Aquaponics System for Common Carp and Foxtail Amaranthus

- The increase or decrease in sales price by 20% showed more changes in profitability.
- It is depicted that initial investment cost influenced the net present value and it was more than the variable cost.
- Media cost dominated the initial fixed investment.

B.Tech Research Project - Study on Environmental Impact Assessment of Aqua Feed Extrusion Mill, Recirculating Aquaculture System and Raceway System

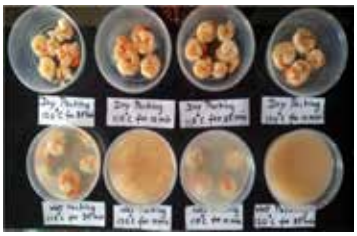
- Eco-toxicity in fresh water and ionizing radiation were more in Aqua Feed Extrusion Mill.
- Aquatic eco-toxicity and Water scarcity were more in Recirculating Aquaculture System (RAS).
- Carcinogen and ionizing radiation were more in Indoor Raceway system.

- Ionizing radiation in Aqua Feed Extrusion Mill was more when compared to all other impacts in RAS and Raceway unit.

3. Department of Fish Process Engineering

B.Tech Research Project - Thermal Studies and Energy measurement of minimally processed shrimps in retort pouches

- The geometrical and thermal properties of peeled and unpeeled shrimps were determined and it will be useful in designing thermal processing equipment.
- The heat penetration characteristics viz., F_0 value (i.e, sterilization value), F_h (i.e., heat penetration factor), j_h (i.e., heat lag factor) of peeled and unpeeled shrimps were determined to standardize the retort processing of minimally processed shrimps.
- Energy consumption during retort processing of dry and wet packing of peeled shrimp were measured with preheated water and without preheated water.



Dry and wet packed peeled shrimp

Thermal diffusivity measurement of peeled shrimp

B.Tech Research Project - Design of semi- automatic dry fish cutter

- The dry fish is brought in to cutting blade manually.
- Cutting blade attached to the shaft rotating in clockwise direction was done cuting the dry fish into uniform size pieces.
- Cut pieces were collected through the dry fish collecting chute.
- This was more efficient than manual cutting in terms of reduction in cutting time and enhanced appearance.
- It reduces the energy required in cutting the dry fishes.

Semi- automatic dryfish cutter

Dried seer fish pieces

Dried ribbon fish pieces

B.Tech Research Project - Design and development of smart solar drying system for fishes

- Smart solar dryer was developed with the covering material of polycarbonate sheet with a capacity of 5-10 kg.
- On an average, solar dryer can remove 55g/h of water content from the product during sun shine hours, whereas, during the rainy days, 28g/h of moisture content can be removed from the product.
- IoT based remote monitoring system was employed for the monitoring of temperature and relative humidity inside the dryer.
- The developed solar drying system offers time efficient and hygienic drying of fishes.

4. Department of Basic Engineering

TANII Project - Development and demonstration of innovative fisheries engineering inventions for the product maximization in fisheries industries

- Nine machines were designed. And one Machine is under development

Fish Filleting Machine

Fish Slicing Machine

Fish Descaling Machine

Fish Decapitation Machine

Demand based Auto Feeder

Exhibited in Honourable Chief Ministers Programme on 07.03.2020 at the Village "Orathur", Nagapattinam to the public for popularisation and start-up of the new company

Solar powered Auto Feeder

powder

Fish Meat Extractor or Mincer

Control system with Mobile APP

ICAR Project - Development, demonstration and dissemination of solar energy operated aerators in shrimp farms

- The solar powered AC aerator was developed.
- The performance analysis of AC aerators and DC aerators was conducted in Serafeth Aquafarm, Nagapattinam and it was found that the power consumed by the DC aerators was low when compared to AC aerators.

The Block diagram for Solar powered aerator

Solar powered AC aerator

B.Tech Research Project - Design and implementation of IOT Based Real Time hatchery Monitoring system

- A smart gadget comprising of temperature, pH, dissolved oxygen and ammonia sensors were automized and the device was compared with the manual methods.
- The developed smart gadget showed accurate readings in brackish and fresh water.
- Mobile application was developed for remote monitoring of hatchery.
- The developed smart gadget cost is Rs.75,000 and approximate cost of one conventional kit measurements for parameters (Temp, pH, DO & Ammonia) ~ Rs.40000.

Faculty of Basic Sciences, OMR, Chennai

1. Department of Fish Biotechnology

Postgraduate research - Effect of Mercury and Arsenic on antioxidants & immune related cytokines expression on Zebrafish Embryos and Larvae

- Mercuric chloride and Sodium arsenite exposed larvae showed the alteration in antioxidant enzyme activities of SOD, CAT, Gpx and GST at 96 hpf.
- Expression of immune related genes (TNF- α, IL-1β, IL-6 and COX-2) were up regulated in a higher concentration of Mercuric chloride and Sodium arsenite.
- Mercuric chloride exposed zebrafish embryo-larvae showed decrease in hatchability.
- Sodium arsenite treated zebrafish embryo-larvae showed increase in hatchability.

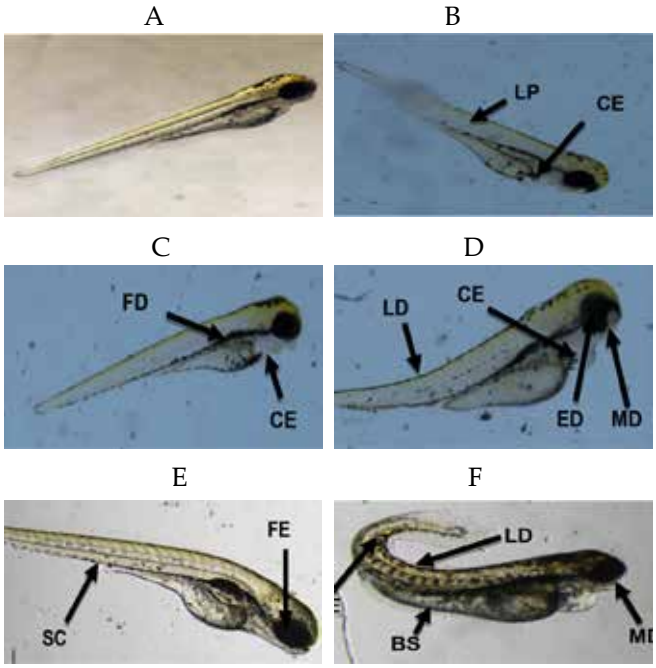


Fig 1. Morphological abnormalities caused by sodium arsenite at 96 hpf,(A) control larvae, (B) 200 nM,(C) 300 nM,(D) 400 nM, (E) 500 nM and (E) 600 nM groups

Mandapam Centre for Sustainable Aquaculture

NFDB project - Open Sea Cage Culture of Marine Finfishes along the Coast of Ramanathapuram District in Tamil Nadu

- Silver Pompano reared in HDPE cages of 6 m diameter at a stocking density of 7 nos/m^3 attained an average size and weight of 25.6 ± 2.8 cm TL and 215 ± 78.6 gm, respectively in 237 days of culture (Initial size - 8.98 ± 0.84 cm TL, Initial weight - 9.55 ± 3.68 gm).
- Farmers were technically assisted and Mr. Nagadass, farmer has harvested 115 Kg of spiny lobster reared in HDPE cage at Seeniappa Dargha in 201 days of culture before stocking the cages with finfish.
- Mr. Simporian and group, Thangachimadam have stocked 10 numbers of HDPE cages with 10000 numbers of seabass fingerlings at Kunthukal, Ramanathapuram on 11.12.2020.
- Mr. Nagaraj and group have stocked 3 numbers of HDPE cages with total of 2800 numbers of seabass fingerlings at Kalimankundu, Ramanathapuram on 11.12.2020.
- Mr. Ganesh Pandi and group have stocked 3 numbers of HDPE cages with a total of 3000 numbers of seabass fingerlings on 18.01.2021 at Seeniappadargha, Ramanathapuram.

Harvesting of Lobster reared in HDPE cage at Seeniappa Dargha

Stocking of Seabass in HDPE cages at Kunthukal, Ramanthapuram

Stocking of Seabass in HDPE cages at Kalimankundu, Ramanthapuram

Stocking of seabass in HDPE cages at Seeniappadargha, Mandapam

NADP Project - Development and Transfer of Seaweed Farming Technology as an Alternative Employment Option for the Coastal Fisher folk in Mandapam Region of Tamil Nadu

- Field surveys were undertaken in seaweed culture sites at Munaikadu, Mangadu, Mandapam and Sambai regions of Ramanathapuram dt. of Tamil Nadu. Seaweed cultivators were involved in culture of *Kappaphycus alvarezii* using raft method. Bamboo rafts of 3 x 3 m were used for culture with seeding rate varying from 45-60 kg. Grow-out period of *K. alvarezii* ranged from 45-60 days with an average yield of 250-280 kg of wet *K. alvarezii*.
- Harvested seaweed were dried on the beaches and then sold to M/s Aqua Agri Seaweed Processing Plant at Manamadurai. Cultured seaweeds were mostly sold in dry form to seaweed processors.
- Monoline culture method was the preferred method of culture for the seaweed *K. alvarezii* in the districts of Thanjavur, Pudukottai and Thoothukkudi.
- Seaweeds like *Sargassum wightii, S. muticum, Gelidiella acerosa, G. edulis* and *Turbinaria ornata* were collected manually along the Gulf of Mannar coast for the extraction of phycocolloids and it was sold in dry form after beach drying.

Harvesting of *K. alvarezii* from the cultured bamboo rafts

Fresh *K.alvarezii* harvested from the bamboo rafts

NADP Project - Upgrading Sustainable Aquaculture Production Centres of TNJFU for operation through Private-Public Partnership for Integrated Agriculture Development

- Milkfish fingerlings were stocked in HDPE ponds of 50 m^2 at stocking density of 1/m^2 and it attained a average weight gain of 276.44 gm in 145 days of culture (Initial weight of milkfish = 50.6 g).
- Indoor nursery rearing of Asian seabass fry measuring 2.45 cm (0.29 g) in total length yield sizes ranging from 6.67 cm (3.95 g) to 11.42 cm (17.7 g) total length with a survival rate of 20 % in a culture period of 150 days.
- Laboratory culture of the microalga *Tetraselmis gracilis* resulted in exponential phase on 19th day of inoculation. The cell density increased from 1.39 x10^6 cells/ml on day 1 to 14.7 x10^6 cells/ml on day 19 after which the cell density reduced. The temperature of the laboratory was maintained at 23°C

Pure culture of micralgae

Supply of seabass fingerlings reared in marine finfish hatchery of MCeSA

Krishnagiri – Barur Center for Sustainable Aquaculture

World Bank project - Development of new strain for inland fish farm

- The site for earthen ponds construction at KBCeSA, under the scheme was carried out and Site clearance work has been completed.

SPC-State Balanced Growth Fund- Livelihood improvement through technology backed backyard Improved Farmed Tilapia (GIFT) and Carp Farming in backward blocks of Krishnagiri district

- The identification of beneficiaries in three blocks, Thally, Kelamangalam and Uthangarai, for implementing the scheme was completed.
- The beneficiary's site was visited and marked their site for farm pond (1000 m^2) construction.

State Referral Laboratory for Aquatic Animal Health, TNJFU – Madhavaram

TANII Project – E fish health surveillance and monitoring network to improve fisheries production in Tamilnadu

- Meteorological data related to prevailing weather conditions in various districts of Tamilnadu were collected and the information were disseminated to the farmers of Thiruvallur district of Tamil Nadu by voice SMS with the help of Reliance Foundation.
- Food fish, ornamental fish and shrimp farms in the north and southern districts of the state were covered under the disease surveillance were carried out in a total of 175 farms.
- Emerging and OIE listed diseases were documented under the disease surveillance and monitoring activities.
- Farmers in different districts of Tamil Nadu have been brought under the fish health network and they were benefited by the regular disease monitoring services. A total number of 2030 farmers were brought under the network.
- A dedicated website was developed with the information on diseases for the benefit of the farmers. www.tnjfuefishhealth.in –Linked with the University website


- Health management advisories were given to the farmers in which 219 farmers were benefited.
- The exact location (co-ordinates) of the shrimp and fish farms in various districts of Tamil Nadu have been documented by GPS.
- Details of the farm area, species cultured and the type of farming practice adopted were documented in the farms under E- fish health surveillance network.
- The mobile laboratory was inaugurated by the Chairman, TANII for the benefit of the aquafarmers.



Industry project - Evaluation of efficacy of prototypes of M/s Kemin against Enterocytozoon hepatopenaei (EHP) infection in white leg shrimp Litopenaeus vannamei

- The efficacy of the prototypes developed by M/s Kemin in controlling the EHP infection in *P. vannamei* was assessed based on molecular (PCR) and histopathological changes.
- The effects of the prototypes developed by M/s Kemin on the water quality of the rearing system, immune parameters and enzymatic activities in *P. vannamei* were assessed.

Directorate of Incubation and Vocational Training in Aquaculture (DIVA), ECR – Muttukadu

Industry Project - Herbal feed additive as choline replacer and its effect on the growth of Pacific white shrimp, *Penaeus vannamei*

- Results of the present study indicate that the addition of the herbal products NRKP – 01 and NRKP – 02 in the diets of *P. vannamei* did not significantly affect the growth performance and whole body composition.


Nursery rearing - Releasing of seeds in cement tanks


Initial sampling of *P. vannamei*


Experimental setup for the growth trial


Herbal feed additives NRKP – 01 and NRKP – 02 with other feed ingredients


Final sampling of *P. vannamei*

Industry Project - Effects of String protein on feed intake, growth and physiological responses of Pacific white shrimp, *Penaeus vannamei*

- The final weight of the shrimps increased on replacing fishmeal with string protein (PROfit) upto an inclusion level of 60% and recorded lowest FCR when compared to other treatments.

- Survival (%) of shrimps was not influenced by the dietary inclusion of String Bio proteins (PROfit and PROtyde).
- ADC of test diets containing PROfit and PROtyde was higher indicating that shrimps are able to efficiently digest the test products.
- The digestible protein (DP) was found to be 61.5 ± 0.2 for PROfit and 62.0 ± 0.2 for PROtyde.
- The relative mRNA expression of lysozyme, Toll-like receptor and IMD were up-regulated in the shrimps fed test products.

Seed acclimatization in cement tank

Dr. N. Felix, Director, DIVA inspecting the experimental setup

Experimental setup for growth trial

Experimental setup for digestibility trial

Dr. N. Felix examining initial sampling

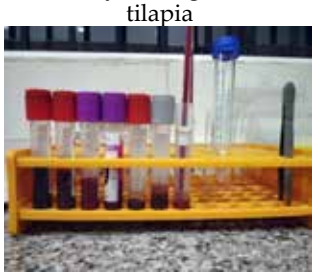
Final sampling of *P. vannamei*

Post graduate research - Effects of dietary supplementation of amino acids on the growth performances, muscle-growth-related gene expression and haematological responses of Nile tilapia, *Oreochromis niloticus*.

- Dietary supplementation of methionine, lysine, tryptophan and arginine enhances the growth performances, feed utilization muscle-growth-related gene expression and haemato-biochemical responses of GIFT tilapia.
- The optimum dietary methionine requirement of GIFT tilapia was estimated to be 8.5 g/kg of diet.
- Dietary lysine requirement for GIFT tilapia was estimated at 18 to 18.3 g/kg of diet and 19.3 to 19.5 g/kg of diet.
- Dietary tryptophan requirement for GIFT tilapia was estimated to be 3.8 g/kg of diet.
- The optimum level of dietary arginine should be 16.7 – 16.8 g/kg of diet in the practical feed formulation for juvenile GIFT tilapia.

Nursery rearing of GIFT tilapia

Experimental diets



Collection of blood in heparinized and non-heparinized tubes

Quantitative Real time PCR used for gene expression study

Post graduate research - Evaluation of bioprocessed silkworm pupae meal and poultry by-product meal as fish meal replacer in diets of GIFT tilapia

- Poultry by-product meal and silkworm pupae meal either in bioprocessed or in non-processed condition can replace fish meal protein completely in diets of GIFT tilapia in floating net cages without any negative impact on growth performances, nutrient utilization, blood haematological and biochemical responses.
- However, bioprocessed PBM and SWP at 66.67 % showed better growth performances and nutrient utilization among all the diets.
- Therefore, it is concluded that bioprocessing is required to achieve higher growth performances.

Experimental setup

Silkworm pupae meal

Fish sampling

Experimental fish at end of the feeding trial

Postgraduate research - Development of plant-based diet for GIFT Tilapia cultured in floating cages

- The processed plant-based diet improved the growth and health condition of the GIFT tilapia than the fish meal incorporated diet.
- Effect of hydrolysate relies on type of processed plant-based diet such as WGM, CGM and SPC.
- Marine hydrolysate inclusion in processed plant-based diet positively improved the growth and diet utilization rather than only processed plant proteins diet.

Cage culture at Poondi reservoir

- The optimum stocking density for cage culture of GIFT Tilapia was found to be 200 nos. and 50 nos. per cubic meter for nursery and grow out cages, respectively.

Directorate of Incubation and Vocational Training in Fisheries, Ramanathapuram

DBT Project - Evolving artificial fish bait for long line fishing using bio-polymer and bio-attractants derived from marine fish processing wastes

- The study revealed that the gelatin derived from fish wastes can be very well utilized for the production of biodegradable artificial fish bait matrix.
- A fish bait matrix with the gel strength of 20.84N was successfully developed to use in fishing hooks.
- Controlled dissolution of the bait matrix in seawater with the insolubility ratio of 74.5% was found to be a desirable property as it would facilitate controlled leaching of bait attractants and sustained releasing agents proposed to be incorporated in the further study for the development of artificial bait.
- The bait matrix could withstand a maximum soaking duration of 10h in seawater though the minimum requirement of soaking duration for longline fishing is 6hrs.

2.6 MEMORANDUM OF UNDERSTANDING SIGNED

Sl. No.	MoUs signed with International and National Universities / Institutes & Industries	Date
1.	M/s. Siva Neela Fish Farm, Mayiladuthurai	08.01.2021
2.	M/s. Bharat Aqua Farm, Sadayankottagam, Kilvelur, Nagapattinam	08.01.2021
3.	M/s. Kamraj College, Thoothukudi	29.01.2021
4.	M/s. Bishop Heber College, Thiruchirappalli	29.01.2021
5.	M/s. Holy cross Home science College, Thoothukudi	29.01.2021
6.	M/s. Annamal College of Education for Women, Thoothukudi	29.01.2021
7.	M/s. Sri Subramaniya Nadar College of Engineering, Kalavakkam, Chennai	30.03.2021
8.	M/s. Salem Microbes Private Limited, Salem	29.03.2021

DEVELOPED TECHNOLOGIES / PRODUCTS

3 DEVELOPED TECHNOLOGIES / PRODUCTS

3.1. TECHNOLOGIES (Developed/ Released/ Commercialized)

Dr M.G.R. Fisheries College and Research Institute, Ponneri

Department of Aquaculture

Nursery rearing of Asian seabass in freshwater

- 500 Nos. of seabass seeds of 1.5 cms were stocked in hapa of 2×1×0.5 m in fertilized ponds.
- Artemia biomass were fed from second week.
- Weekly size grading was done and shooters were transferred to fresh hapa.
- Nursery feed (55% protein) 0.3 -0.5 mm were used.
- 75% of survival was achieved and fingerlings of 7 cm were produced in 45 days.

College of Fisheries Engineering, Nagapattinam

Department of Basic Sciences

Development of halochromic sensor-based on bionanocompositfor monitoring spoilage of packaged fish

- Halochromic biosensors from natural polymers, natural dye, and silver nanoparticle were successfully prepared from materials of natural origin.
- The biosensors were characterized by SEM, SEM-EDS, EDS mapping, XRD, and color measurements.
- The biodegradability of the sensor was tested and the results indicated that the approximately 60% of degradability in soil was achieved in two weeks.
- Similarly, halochromic sensors were prepared using pH sensitive dyes.

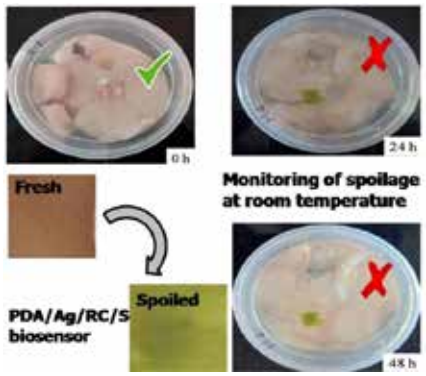


Figure 1. Schematic representation of halochromic sensitivity of PDA/AG/RC/S biosensor for monitoring the spoilage of packaged seer fish.

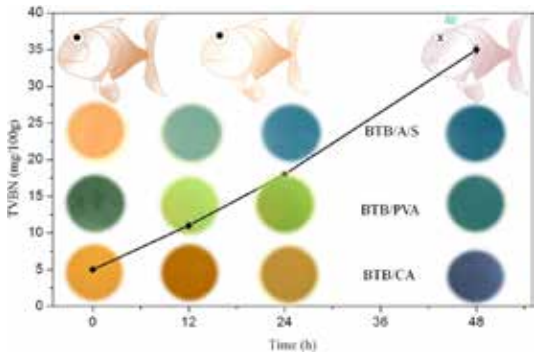
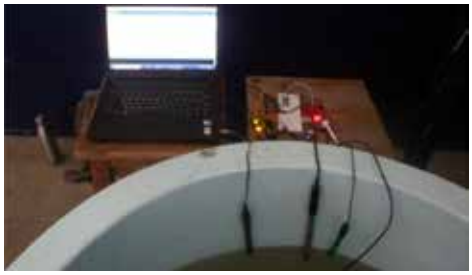


Figure 2. Schematic representation of halochromic sensitivity of BTB/A/S, BTB/PVA, and BTB/CA biosensors for monitoring the spoilage of packaged seer fish.

Department of Basic Engineering

Real time Monitoring System in Aquaculture (Temperature, pH, DO, Ammonia)

Onboard Water Quality Monitoring in Thirumurthy Fish Farm



Onboard Water Quality Monitoring in model hatchery tank at CoFE

- Compared to the manual methods, IOT Based Real time monitoring system consists of sensors for temperature, pH, Dissolved oxygen and Ammonia monitoring.
- The data are sensed and it is transferred to Microcontroller chip and converted to digital data and stored in the database. The data are monitored through online in mobile application.
- The developed mobile application helps in remote monitoring of IOT sensors. This method is accurate, less time consuming and less man power.
- The laboratory method has limitations with the samples and it involves replacement cost and less accurate. The developed IOT based Real time Monitoring system in Aquaculture is one time investment with accurate onboard results with less man power.

Fish De-Scaling Machine

- This machine adopts itself for de-scaling all type of fins of all fish species ranging from 2 inches to 8 inches in size.
- This machine adopts itself automatically for various types of fish profiles (Morphology).
- This semi automated machine indigenously developed in such a way that it does not damage the operators in any aspect, while operation.
- Production capacity ranges from 0.2 to 0.5 tonns per hour based on the size of the fishes.
- This machine occupies very little space and hence, it can be installed in fishing boats.

Fabricated Machine

F-Descaling - Demo @ CoFE

F-Descaling - Demo @ Melavanchore - 28.09.2020

Fish filleting machine

- This machine adopts itself for filleting all type of fish species ranging from 2 inches to 8 inches in thickness without any limitation in length.
- This machine provides room for central thickness ranging from 5mm to 20mm according to the various types of fish profiles (Morphology).
- This semi automated machine indigenously developed in such a way that offers safe operation.
- Production capacity ranges from 0.5 to 1.5 tonns per hour based on the size of the fishes.
- This machine occupies very little space and hence, it can be installed in fishing boats.
- Size and shape variations of the fish were tackled using profile plate and adjuster.

Fabricated Machine

F- Filleting - Demo @ CoFE

F- Filleting - Demo @ Melavanchore - 28.09.2020

Fish Slicing machine

- This machine provides room for adjusting the fish slice thickness ranging from 15mm to 45 mm and it operates for any fish species.
- This machine adopts itself for all type of fish species ranging from 1 inch to 5 inches in thickness and 8 inches of length.
- This machine adopts itself automatically for various types of fish profiles. This semi automated machine indigenously developed in such a way that it does clean itself during operation due to its operating velocity.
- Production capacity ranges from 0.05 to 0.1 tonne per hour based on the size of the fishes.

- This machine occupies very little space and hence, it can be installed in fishing boats.

Fabricated Machine

F- De-capitation - Demo @ CoFE

F- De-capitation - Demo @ Melavanchore - 28.09.2020

Fish De-capitation Machine

- This machine adopts itself for all fish species ranging from 2 inches to 8 inches in size.
- This machine adopts itself automatically for various types of fish profiles (Morphology).
- This semi automated machine indigenously developed in such a way that it does not damage the operators in any aspect, while operation.
- Production capacity ranges from 0.5 to 1.5 tonns per hour irrespective of the size of the fishes.
- This machine occupies very little space and hence, it can be installed in fishing boats.
- Semi automated hand-held operations successfully process the fish.

Demand Based Auto Feeder

- It operates based on the competing nature and stimulus of the fish species in pond.
- The feeding capacity is 25 to 30 grams per stroke (single stimulus)
- This machine adopts and provides the survival techniques and keeps the fishes fit and healthy through their feeding demands.
- Requirement of adopting all types and sizes of fish feed ranging from 1mm to 8mm of floating as well as sinking feed.
- This feeder operates using the gravitational force and time of stimulation of the fishes at pond.
- This feeder permits the users to maintain the health and characteristics of wilderness of fishers based on the hierarchy.

Fabricated Machine

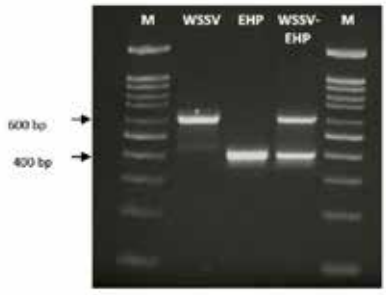
F - Demand Based Auto Feeder - Demo @ Nagore

F- Demand Based Auto Feeder - Demo @ Visit on Orathur - 11.03.2020

State Referral Laboratory for Aquatic Animal Health, TNJFU – Madhavaram

Multiplex PCR assay for simultaneous detection of White spot syndrome virus (WSSV) and *Enterocytozoon hepatopenaei* (EHP) infecting shrimp

- This technology helps in rapid and simultaneous detection of White spot syndrome Virus (WSSV) and *Enterocytozoon hepatopenaei* (EHP) in shrimp.
- The results of the diagnosis could be obtained rapidly compared to individual assays (with in 4 hrs against 8 hours).
- The cost per reaction is reduced by 50%.
- Multiplex WSSV- EHP assay could be used for the screening of shrimp in hatcheries (post larvae and broodstock) and in farms. Total cost of WSSV- EHP Multiplex PCR Kit for 100 reactions – Rs. 20, 000/-

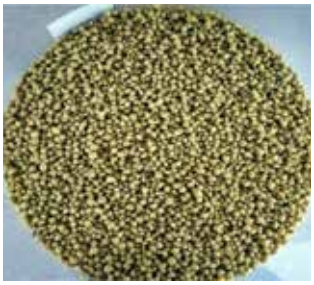


Directorate of Incubation and Vocational Training in Aquaculture (DIVA), Muttukadu

Growout feed for *Pangasius*, Indian Major Carps and Tilapia

- The cost of presently developed GROWPIA floating feed (24% protein) is - 34.68 per kg.
- The growout feed developed through this technology will directly benefit the fish farmers to enhance their profitability due to enhanced growth and reduction of feed cost.
- Feed companies supply feed only in bulk quantity.

But small farmers who are in need of one or two bag feed can easily get from our feed mill. Therefore, it enhances feed based aquaculture in small scale also.




3.2. PATENTS APPLIED (Filed/ Published/ Granted)–Nil

3.3. PRODUCTS (Developed/ Released/ Commercialized)

Fisheries college and Research Institute, Thoothukudi

Department of Fish Processing technology

Fish Protein Bread (Mr. F. Parthiban)

Marketing of Fish Protein bread value added products is completely different from traditional seafood. Surveys, packaging and advertising are a few of the very important areas, which ultimately determine successful movement of a new product. A new appropriate channel would be supermarket chain which procures directly from source of supply. Fish Protein Bread products can also be marketed for different target groups in the domestic and regional markets through women Self help group, Bakery industries etc.

Fish Protein Biscuit (Mr. F. Parthiban)

Marketing of Fish protein Biscuit value added products is completely different from traditional seafood. A new appropriate channel would be supermarket chain which procures directly from source of supply. Appearance, packaging and display are all important factors leading to successful marketing of any new value-added product.

Powdered Fish Silage (F. Parthiban)

Decreased availability of fish for fishmeal production was due to the increase in human consumption of low value fish and diversification of fish exports. This necessitates a second look at the fish processing wastes as a potential raw material. The quantum of fish processing wastes, though considerable, are not available centrally making the production of fishmeal uneconomical. Fish silage offers a practical alternative towards the conversion of such wastes into feed for aquaculture and animal husbandry. The production of both acid added and fermented types of fish silages has seen a number of changes in the recent years. Co-drying of silage with solid binders has made its storage and handling easier and it has concentration of the centrifuged silage. The utilization of fish silage as animal feed has met with success in most animals except poultry.

Dr. M.G.R Fisheries college and Research Institute, Ponneri

Department of Fish Processing Technology

Seaweed Pickle (Ms. D. Priyadharshini and Ms. Nimish Mol Stephen)

- The sensory analysis of seaweed pickle of 10% and 20 % scored well compared to above 20 % concentration. The protein content ranges between 7.14 - 10.5%. Sensory results remain the same after 3 months of storage.

Customized natural spice coating mix for flavoring extruded seaweed snacks (Ms. R. Rithika Devi and Ms. Nimish Mol Stephen)

- Customized natural spice coating mix of four types were developed, type 1: Creamy Onion mix, type 2: Spicy tomato mix type 3: Sour and spicy mix and type 4 : Sweet and spice mix.
- The sensory analysis of seaweed flakes of 6 %

scored well compared to above 2%, 4%, 8% and 10% concentrations.

- Sensory results remain the same after three months of storage in vacuum packaging.

DIVA, Muttukadu

Flower horn feed

- Nutritionally balanced feed.
- Enhances colour.
- Optimum water stability.
- Good palatability.
- Free from prohibited antibiotics, chemicals and medicines.
- Aquarium hobbyists can get flower horn feed at affordable price.
- Flower horn feed available with less cost will indirectly bring more number of aquarium hobbyists.

EDUCATION / CURRICULAR AND CO-CURRICULAR ACTIVITIES

EDUCATION 4

4.1. Educational Programmes

Tamil Nadu Dr. J Jayalalithaa Fisheries University (TNJFU) is offering professional educational programmes to impart skill based professional education in Fisheries Science, Fisheries Engineering, Food Technology, Biotechnology and Energy and Environmental Engineering and Paraprofessional education in Aquaculture, Aquatic Animal Health Management, Fish Processing and Fishing Technology.

4.1.1. Academic programmes

The academic programmes include under graduate programmes B.F.Sc. i.e., Bachelor of Fisheries Science, B.Tech in Fisheries Engineering, B.Tech. in Biotechnology, B.Tech. in Food Technology and B.Voc. is (Industrial Fish Processing Technology) in addition, new programmes viz., B.Tech. (Energy and Environmental Engineering), B.B.A. (Fisheries Business Management), B.Voc. (Industrial Aquaculture, Aquatic Animal Health Management and Industrial Fishing Technology) were offered from the current academic year), masters programme (M.F.Sc., M.Tech. and MBA) and doctoral programmes (Ph.D.,) These programmes are periodically updated and redesigned based on the recommendation of all India Deans Committee formed by ICAR, feedback, experience, demands and global scenario. These modifications are implemented with approval from the concerned Board of Studies and Academic Council of TNJFU. Textbooks, teaching and practical manuals are prepared for the courses offered to enhance the quality of education with funding assistance through ICAR Development Grant.

4.1.2. Undergraduate programmes

The B.F.Sc. is a four year professional under graduate degree programme in Fisheries Science offered at FC & RI, Thoothukudi, Dr. M.G.R. FC & RI, Ponneri and Dr. M.G.R. FC&RI, Thalainayeru with an intake capacity of 60, 60 and 40 students, respectively. Fifteen percent of the seats is allotted to the students of other states that are filled up through All India entrance examination conducted by the ICAR, New Delhi. The revised curriculum suggested by the ICAR as per V Deans committee recommendation is adopted. The curricular activities are planned and monitored under the direction of the Faculty Dean/Dean (Academics) through the Education Technology Cell (ETC) with the assistance of students coordinators and counsellors. An enrolled student must score a minimum Overall Grade Point Average (OGPA) of 5.5 out of 10.0 to obtain bachelor degree.

The B.E. (Fisheries Engineering) is a 4 year professional degree programme offered at the College of Fisheries Engineering, Nagapattinam. The programme has a total of 150 credits including coursework, experiential learning, project work, study tour, Industrial Internship Programme and rural fisheries engineering work experience. An academic year consists of two semesters each having 105 working days excluding the final theory examination days. The students undergoing course of study leading to award of the degree shall pass the courses and complete the minimum credit hours prescribed thereof by the Academic Council from time to time by obtaining a minimum OGPA of 5.5 on 10.0 point scale system for a bachelor degree.

4.1.3. Postgraduate programmes

Master degree programmes

Master of Fisheries Science (M.F.Sc.,) is a two year Post-graduate degree programme offered in 13 disciplines, namely Aquaculture, Aquatic Animal Health, Fisheries Resource Management, Aquatic Environment Management, Fish Quality Assurance and Management, Fish Processing Technology, Fishing Technology and Fisheries Engineering, Fish Biotechnology, Fisheries Economics, Fisheries Extension at Fisheries College and Research Institute, Thoothukudi. Post-graduate degree programme in Aquaculture, Aquatic Animal Health, Aquatic Environment Management, Fisheries Resource Management and Fish Processing Technology disciplines are offered at Dr. M.G.R. Fisheries College and

Research Institute, Ponneri. Additionally, Postgraduate degree programme in Fish Genetics and Breeding, Fish Nutrition and Feed Technology, Fish Biotechnology Fish Pharmacology and Toxicology and M.B.A. (Fisheries Enterprises Management) is also offered at Institute of Post Graduate Studies, Vaniyanchavadi, Chennai. The candidates possessing B.F.Sc., degree is eligible for admission through a common entrance test conducted by the University. Common ICAR syllabus is adopted for M.F.Sc., programme. The programme has 55 total credits including one credit for seminar and 15 credits for research. From the current academic year, M.Tech., in Aquaculture Engineering and Fish Process Engineering is also being offered at College of Fisheries Engineering, Nagapattinam.

Ph.D., programmes

Ph.D., degree programmes are being offered in regular and part-time modes in 9 disciplines, namely Aquaculture, Aquatic Animal Health, Fisheries Resource Management, Aquatic Environment Management, Fish Quality Assurance and Management, Fisheries Extenstion Fisheries Economics and Fish Processing Technology and Fishing Technology at Fisheries College and Research Institute, Thoothukudi and Ph.D., degree programmes in five disciplines namely, Aquaculture, Aquatic Animal Health, Aquatic Environment Management, Fisheries Resource Management and Fish Processing Technology are also offered at Dr. M.G.R. Fisheries College and Research Institute, Ponneri. The programme has 75 total credits including 2 credits for seminar and 45 credits for research. The enrolled student shall have to score a minimum Overall Grade Point Average (OGPA) of 6.5 out of 10.0 in order to earn M.F.Sc., and Ph.D., degree. Institute of Fisheries Post Graduate Studies, OMR, Chennai is offering Ph.D., in Fish Nutrition and Feed Technology, Fish Biotechnology, Fish Pharmacology and Toxicology and Life Science programmes.

4.1.4. Admission

1.Undergraduate admission

Applications were invited from eligible candidates through online mode from 26.09.2020 to 26.10.2020. Totally, 3030 applications were received for all courses.

Sl.No.	Course	No. of applications
1	B.F.Sc. (Bachelor of Fisheries Science)	1655
2	B.Tech. (Fisheries Engineering)	448
3	B.Tech. (Energy & Environmental Engineering)	111
4	B.Tech. (Biotechnology)	173
5	B.Tech. (Food Technology)	223
6	B.B.A. (Fisheries Business Management)	72
7	B.Voc. (Industrial Fish Processing Technology)	111
8	B.Voc. (Industrial Aquaculture)	89
9	B.Voc. (Industrial Fishing Technology)	59
10	B.Voc. (Aquatic Animal Health Management)	89
	TOTAL	**3030**

The applications received under the category, Sports Quota for B.F.Sc. degree programme have been scrutinized from 27.10.2020 and 28.10.2020. The HSc mark list has been received from Deputy Director, DIP, Chennai and compared with applied students marks for the purpose of genuineness and the rank list for provisionally eligible candidates has been released by the Hon'ble Vice-Chancellor on 01.11.2020.


The UG admission in-person counselling for special categories viz., Fishermen Wards, Sports quota, Differently-abled Quota and Vocational Stream were conducted on 07.11.2020 at TNJFU Headquarters, Nagapattinam. Totally, 18 candidates (B.F.Sc., – 16, B. Tech., [Fish.Eng.] – 02) were admitted under these categories.


Online counselling has been introduced for admitting students in other categories. Online counselling were conducted as per the following schedule.

Sl.No.		Schedule
1	1st Online Counselling	09.11.2020 to 11.11.2020
2	2nd Online Counselling	18.11.2020 to 20.11.2020
3	3rd Online Counselling	09.12.2020 to 12.12.2020
4	4th Online Counselling	22.01.2021 to 25.01.2021

The following students were admitted during the academic year 2020-21 in various Undergraduate degree courses.

Sl. No.	Course	Admitted										With in State	Out side State	Out side Country
		TN	ICAR	FW	NRI	FN	OS	A&N	KW	Total	Male	Female			
1	B.F.Sc.														
	Thoothukudi	40	-	2	4	-	-	1	-	47	17	30	45	2	-
	Ponneri	40	-	2	2	-	-	1	-	45	25	20	43	1	1
	Thalainayeru	40	-	2	2	-	-	-	-	44	18	26	44	-	-
	Total	120	-	6	8	-	-	2	-	136	60	76	132	3	1
2	B.Tech. (FE.)	26	-	1	-	-	-	-	-	27	14	13	27	-	-
3	B.Tech. (EEE)	9	-	-	-	-	-	-	-	9	5	4	9	-	
4	B.Tech. (BT)	23	-	-	-	-	2	-	-	25	10	15	23	2	-
5	B.Tech. (FT)	18	-	-	-	-	-	1	-	19	12	7	19	-	
6	B.B.A. (FBM)	16	-	-	-	-	-	-	-	16	12	4	16	-	
7	B.Voc. (IFPT)	12	-	-	-	-	-	-	-	12	7	5	12	-	
8	B.Voc. (IA)	17	-	-	-	-	-	-	-	17	10	7	17	-	
9	B.Voc. (IFT)	10	-	-	-	-	-	-	-	10	8	2	10	-	
10	B.Voc. (AAHM)	16	-	-	-	-	-	-	-	16	13	3	16	-	
	TOTAL ADMITTED	267	-	7	8	-	2	3	-	287	151	136	281	5	1

Totally 12 seats were allocated under ICAR for B.F.Sc. degree program. The candidates were selected through AIEEA-UG for the seats allotted under ICAR quota. The documents were verified successfully for 12 candidates through ICAR portal and admit cardwere issued to one candidate, no one joined. Finally, these seats have been filled under the Tamil Nadu quota as per the ICAR direction. In-person counselling was conducted for B.F.Sc. under NRI category on 03.12.2021. Totally, 8 students were admitted.

The commencement for the first year regular classes were fixed on 10.02.2021 and the UG admission was closed on 09.03.2021 for the academic year 2020-21.

Postgraduate admission

Applications were invited from the eligible candidates through online from 01.11.2020 to 27.11.2020. Totally, 68 applications were received for M.F.Sc., 6 applications for M.Tech. and 49 applications for Ph.D., degree programmes. The applications were scrutinized by PG admission- application scrutinizing committee on 17.12.2020 and eligible candidates list was prepared. Computer based Entrance examination was conducted successfully on 21.12.2020 and the eligible candidates were called for the counselling. The in-person counselling was conducted on 22.12.2020 at Dr. MGR Fisheries College and Research Institute, Ponneri. The discipline wise admission details are as follows.

SANCTIONED STRENGTH

Sl. No.	Faculty & Discipline	FCRI, Thoothukudi		Dr. MGR FCRI, Ponneri		IFPGS, Vaniyanchavadi		CoFE, Nagapattinam
		M.F.Sc.	Ph.D.	M.F.Sc.	Ph.D.	M.F.Sc.	Ph.D.	M.Tech.
A	**Faculty of Fisheries Sciences**							
1	Aquaculture	6+2*	3+2*	3+1*	4	-	-	-
2	Aquatic Animal Health	3+1*	2	2	1	-	-	-
3	Aquatic Environment Management	2+1*	2	2	2	-	-	-
4	Fisheries Economics	2+1*	3	-	-	-	-	-
5	Fisheries Engineering & Technology	3	3	-	-	-	-	-
6	Fisheries Extension	2+1*	3	-	-	-	-	-
7	Fish Processing Technology	1+1*	1	2	1	-	-	-
8	Fisheries Resource Management	2+1*	2+1*	2	1	-	-	-
9	Fish Quality Assurance & Management	5	3	-	-	-	-	-
10	Fish Nutrition & Feed Technology	-	-	-	-	2	2	-
B	**Faculty of Basic Sciences**							
11	Fish Biotechnology	-	-	-	-	4	4	-
12	Fish Genetics and Breeding	-	-	-	-	2	1	-
13	Fish Pharmacology and Toxicology	-	-	-	-	4	1	-
C	**Faculty of Fisheries Engineering**							
14	M.Tech. (Aquaculture Engineering)	-	-	-	-	-	-	2
15	M.Tech. (Fish Process Engineering)	-	-	-	-	-	-	4
	TOTAL	**34**	**25**	**12**	**9**	**12**	**8**	**6**
						Total Allotment - 106		

**Allotted under ICAR Quota.*

ADMITTED STUDENTS STRENGTH

Sl. No.	Faculty & Discipline	FCRI, Thoothukudi		Dr. MGR FCRI, Ponneri		IFPGS, Vaniyanchavadi		CoFE, Nagapattinam
		M.F.Sc.	Ph.D.	M.F.Sc.	Ph.D.	M.F.Sc.	Ph.D.	M.Tech.
A	**Faculty of Fisheries Sciences**							
1	Aquaculture	6+2*	1	4	3	-	-	-
2	Aquatic Animal Health	3+1*	2	2	1	-	-	-
3	Aquatic Environment Management	2	1	2	-	-	-	-
4	Fisheries Economics	-	2	-	-	-	-	-
5	Fisheries Engineering and Technology	3	2	-	-	-	-	-
6	Fisheries Extension	1*	2	-	-	-	-	-
7	Fish Processing Technology	1	1	2	-	-	-	-
8	Fisheries Resource Management	2	2	2	1	-	-	-
9	Fish Quality Assurance and Management	1	1	-	-	-	-	-
10	Fish Nutrition and Feed Technology	-	-	-	-	2	-	-
B	**Faculty of Basic Sciences**							
11	Fish Biotechnology	-	-	-	-	1	3	-
12	Fish Genetics and Breeding	-	-	-	-	1	1	-
13	Fish Pharmacology and Toxicology	-	-	-	-	1	-	-
C	**Faculty of Fisheries Engineering**							
14	M.Tech. (Aquaculture Engineering)	-	-	-	-	-	-	2
15	M.Tech. (Fish Process Engineering)	-	-	-	-	-	-	1
	TOTAL	**22**	**14**	**12**	**5**	**5**	**4**	**3**
						Total Admitted - 65		

**ICAR admitted candidates.*

ADMITTED STUDENTS Generwise DETAILS

Sl. No.	Campus	M.F.Sc.			M.Tech			Ph.D.		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
1	FCRI, Thoothukudi	10	12	22	-	-	-	9	5	14
2	Dr. MGR FCRI, Ponneri	4	8	12	-	-	-	2	3	5
3	CoFE, Nagapattinam	-	-	-	1	2	3	-	-	-
4	IFPGS, Vaniyanchavadi	4	1	5				3	1	4
	TOTAL	**18**	**21**	**39**	**1**	**2**	**3**	**14**	**9**	**23**

Sl.No.	Course	Within state	Outside state	Outside Country	Total
1	**M.F.Sc.**				
	FCRI, Thoothukudi	16	6	-	22
	Dr. MGR FCRI, Ponneri	10	2	-	12
	IFPGS, Chennai	1	4	-	5
	Total	**27**	**12**	**-**	**39**
2	**M.Tech.**	**3**	**-**	**-**	**3**
3	**Ph.D.**				
	FCRI, Thoothukudi	10	4	-	14
	Dr. MGR FCRI, Ponneri	5	-	-	5
	IFPGS, Chennai	3	1	-	4
	Total	**18**	**5**	**-**	**23**
	GRAND TOTAL	**48**	**17**	**-**	**65**

Further, 9 M.F.Sc., seats and 3 Ph.D., seats in fisheries were allotted under ICAR Quota. The candidates were selected through AIEEA-PG for the seats allotted under ICAR quota. Their documents were verified successfully through the ICAR portal. Of the 9 seats allotted three candidates were joined in M.F.Sc., degree program.

MBA (Fisheries Enterprises Management)

The MBA (Fisheries Enterprises Management) applications were invited from eligible candidates through online mode from 14.10.2020 to 10.11.2020. Totally, 19 applications were received. Applications were scrutinized and eligible candidates were called for online counselling. Online counselling and interaction were conducted on 18.10.2020 through Google Meet. The Dean, Basic Sciences, The Programme Coordinator along with PG admission committee chairman interacted with the candidates through online. Based on the performance of the candidates, marks were allotted and the rank list was prepared. Of the 18 candidates invited, 14 candidates participated in the interaction. The admission was provided to 14 candidates and 6 candidates of which 3 are from outside Tamil Nadu joined the program.

The first semester regular classes were commenced on 20.01.2021. The PG and Ph.D., admissions 2020-21 were closed on 19.02.2021 for the academic year 2020-21.

4.1.5. Scholarship

The following scholarships are available for deserving Undergraduate/ Masters / Doctoral degree candidates.

1. Community Scholarship for UG Students
2. PattukottaiAzhagiri Endowment scholarship for UG Students
3. Nandeesha Endowment scholarship for UG, PG and Ph.D. Students
4. TNJFU Stipend for PG & Ph.D. Students
5. ICAR National Talent Scholarship (NTS)
6. ICAR JRF/SRF Scholarship

All the students admitted to M.F.Sc., / Ph.D., courses and do not avail any scholarship are eligible to avail University Stipend of Rs. 4,000/- (Rupees four thousand only) per month for M.F.Sc., and Rs. 5,000/- (Rupees five thousand only) per month for Ph.D., degree programmes.

4.1.6. Endowments

A. List of Endowments (Awards / Medals)

1 TNFU Gold Medal for securing University first rank in B.F.Sc.,

2 Prof. G. Rangaswamy's Prize for the best B.F.Sc., student.

3 TNFU Alumini Association Medal for the best B.F.Sc., student.

4 Mrs. T. Gopalan Nair Memorial Medal for the best B.F.Sc., student.

5 PuratchiThalaivi Dr. J. Jayalalithaa Endowment Award for the best lady student in B.F.Sc.,

6 ParasakthiVaithilingam Excellence Cash Award for the best outgoing B.F.Sc., student.

7 Marimuthu Vijayalakshmi Endowment for the Best outgoing student in B.F.Sc., programme.

8 TNFU Gold Medal for securing University first rank in M.F.Sc.,

9 Prof. G. Rangaswamy's Prize for the best M.F.Sc., student.

10 Sardar Buta Singh Medal for the best M.F.Sc., student.

11 Puratchi Thalaivi Dr. J. Jayalalithaa Endowment Award for the best lady student in M.F.Sc.,

12 Chief Guest Dr.S.L.Metha Award for the best M.F.Sc., student in Fisheries Environment.

13 Chief Guest Dr.V.Rajagopalan Award for the best M.F.Sc., student in Fisheries Resource Management.

14 Chancellor of TANUVAS Justice Ms. M. Fathima Beevi Award for the best M.F.Sc., student in Aquaculture.

15 Chancellor of TANUVAS Justice Ms. M. Fathima Beevi Award for the best M.F.Sc. student in Fish Processing technology.

16 TNFU Gold Medal for securing University first rank in Ph.D.,

17 Dr. T. M. Samocha Gold Medal for the Best Outgoing Girl Student in B.F.Sc.,

18 Dr. T. M. Samocha Gold Medal for the Best Thesis in M.F.Sc.(Aquaculture)

19 Dr. T. M. Samocha Gold Medal- for the Best Outgoing Student in M.F.Sc., (Fish Biotechnology).

20 Dr. T. M. Samocha Gold Medal for the Best Thesis in Ph.D., (Aquaculture).

21 Vidya Santhanakrishnan Award for Best Outgoing Girl Student in M.F.Sc.,

22 POSEIDON BIOTECH Award for top scoring B.F.Sc., Student.

23 Indian Bank Endowment Award for the Best Student in B. Tech., (Biotechnology).

24 M/s Ependorf India Pvt. Ltd Gold medal for Best Student in M.F.Sc., (Fish Genetics & Breeding)

25 R. Swaminathan Award for the Best B.F.Sc., Student

26 Thirumathi Palaniammal Velappan Award for Best Student in M.F.Sc., (Fisheries Economics & Extension).

27 M/s. R.R.Thulasi Builders India (P) Ltd Award for the Best M.F.Sc.(Fishing Technology and Fisheries Engineering)

28 Sri V.V.D. Ravindran Gold Medal for the Best Outgoing B.F.Sc., Student.

29 Prof. R. Prabaharan Gold Medal for the Best Outgoing B.F.Sc., Student in the courses offered in the discipline of Fish Quality Assurance and Management.

30 Prof. M.C. Nandeesha Gold Medal for the Best Outgoing M.F.Sc., Student in Fish Quality Assurance and Management.

31 Prof. I. Karunasagar Gold Medal for the Best Outgoing Ph.D., Student in Fish Quality Assurance and Management.

32 DSA-Gold Medal for the Best Thesis in M.F.Sc., (Aquaculture)

33 Indian Overseas Bank Gold Medal for the Best Outgoing M.F.Sc., Student in Fish Pharmacology and Toxicology.

34 Indian Overseas Bank Gold Medal for the Best Outgoing M.F.Sc., Student in Fish Genetics and Breeding.

35 Indian Overseas Bank Gold Medal for the Best Outgoing M.F.Sc., Student in Fisheries Economics.

36 Indian Overseas Bank Gold Medal for the Best Outgoing M.F.Sc., Student in Fisheries Extension.

37 Prof. P. Jeyachandran Gold Medal for the best M.F.Sc., Student in Fish Processing Technology.

38 M. SELVAM Gold Medal for the top ranking Girl student in B. Tech., (Fisheries Engineering).

39 G. VICTORIA – SUGAFELIX Vice-Chancellor Gold Medal for the best Aquaculture / Fisheries Technologist Award.

40 D. I. Peter Jebasingh Gold Medal for the best Ward of Fisherfolk in Undergraduate Programmes.

41 Chancellor of TNJFU, Shri Banwarilala Purohit Gold Medal for the Best Aquaculture / Fisheries Technologist at Ph.D., Programme.

42 Thiru. D. Jayakumar, Pro-Chancellor of TNJFU Gold Medal for the Best B.Tech. (Fisheries Engineering) Student.

43 Tmt.D.Jayalakshmi and ThiruK.Durairaj, Ex Counselor, Chennai Corporation Gold Medal for the Best Girl Student of Fisherfolk in Undergraduate Programmes.

44 PadmanabanChellammalVelayutham Gold Medal for the Best M.F.Sc., Thesis in Fish Processing Technology.

45 K.V. Narayanan Vijayan Gold Medal for the Best Thesis in M.F.Sc. (Fisheries Biology and Resource Management)

46 TNJFU Gold Medal for securing University first rank in B. Tech., (Fisheries Engineering.)

47 Dr.M.Devaraj Gold Medal for the Best M.F.Sc., Thesis in Aquatic Environment Management.

48 Dr.M.Devaraj Gold Medal for the Best Ph.D. Thesis in Fisheries Resource Management.

49 Usha ThandavRajagopalsamy Gold Medal for the Best Outgoing B.F.Sc., Student in the courses offered in Aquaculture discipline

50 CPF Academic Excellence Award (Gold Medal) for the Best B.F.Sc., Student.

4.2. STUDENTS AMENITIES AND ACTIVITIES

4.2.1. Hostel

A. FC & RI, Thoothukkudi

Fisheries College and Research Institute, Thoothukudi has two hostels, the boys hostel located in the main campus at the harbor bye-pass road and girls hostel located in the staff-quarters campus at Teachers colony, Thoothukudi. Both the hostels have separate UG and PG blocks. The hostel accommodation was provided to 260 students comprising of 133 boys and 127 girls undergoing various degree courses during the year 2019-2020. The kitchens available in both the hostels are FSSAI certified and are properly maintained with no compromise in the quality of food. Both boys and girls hostel have separate mess run on a 'Dividing system'.

Administration

The hostel is administered by one warden and two deputy wardens (Boys and Girls). One assistant and a typist assisting the hostel administration and five basic servants were maintaining the cleanliness of the hostel.

B. Dr. MGR FCRI, Ponneri

Dr. MGR FCRI hostel is administered by one Warden and two Deputy Wardens, including one lady deputy warden. One Assistant is assisting the hostel administration.

Students Amenities and activities

Both boys & girls hostels are located within the premises of Dr. MGR FCRI, Ponneri. In both the hostels, UG and PG students are accommodated separately. A hostel secretary assisted by hostel representatives from each year in both the hostels is maintaining the respective hostel premises under the direct supervision of the hostel administration.

Accommodation (Boys and Girls Hostel)

The hostels provided accommodation to 228 students (UG &PG) comprising of 122 boys and 106 girls pursuing undergraduate and postgraduate programmes. A two international students from Tanzania and students from Andaman are also staying in this hostel whereas in girls hostel, two from Andhra Pradesh, two from Andaman and two from Uttarkhand are also staying. The Hostel rooms comprise of Double stay/Triple Stay with every single essential convenience.

Mess and Dining

A common mess is functioning for boys and girls hostellers based on 'Dividing System'. A Mess Secretary assisted by mess representatives from each year in both the boys and girls hostels is maintaining the mess under the direct supervision of the hostel administration.

Hostel Amenity Committee

The Hostel Amenity Committee meets regularly in order to review the hostel accounts and mess rates and recommend necessary measures for the efficient and economical functioning of students mess.

Readers room

Newspapers and periodicals (weekly and monthly) are made available in the hostel campus for both the boys and girls inmates. Magazines provided in the reading room help the hostel inmates to prepare for the civil service, ICAR and various other National and International competitive examinations.

Amenities

Separate TVs have been provided to both hostels for watching the TV programmes. One R.O plant (500 lit per hour) has been installed in the common mess for drinking water purpose. A Generator of 75 KV has been installed in the hostel in order to ensure uninterrupted power supply. Badminton courts have been provided inside the hostel premises of both boys and girls hostels.

Facilities created during the year 2020 – 21

Installed SMART TV at Boys' Hostel

Installed Water Heater in hostels

Fixed Netlon for Mess windows

Re-installed Napkin incinerator

C. Dr. M. G. R. FC & RI, Thalainayeru

Dr.M.G.R. Fisheries College and Research Institute, Thalainayeru is newly formed under the Tamil Nadu Dr. J. Jayalalalithaa Fisheries University, Nagapattinam during 2017. The students were shifted to newly built hostel in the campus on 08.02.2021. Shifting of canteen and materials from the rented building for boys at Vettaikkaraniruppu and girls at Thalainayeru were completed by 14.02.2021. Totally 136 students, 63 boys and 73 girls are being accommodated in the rental buildings at Thalainayeru and Vettaikaraniruppu. Students hostel amenity committee meeting was conducted on 28.04.2020 for discussing the percentage of salary to be disbursed to the cooking team during lockdown period. Totally 15 students and 5 staff participated via Google Meet. Totally 138 students are utilizing the hostel facility.

D. College of Fisheries Engineering, Nagapattinam

College of Fisheries Engineering, Nagapattinam has two hostels, the boys and girls hostel located in the main campus. Each hostel is administered by a warden and deputy wardens (Boys and Girls). One assistant and a typist assisting in the hostel administration. Apart from them, two basic servants were maintaining the cleanliness of the hostel. A hostel secretary assisted by hostel representatives from each year maintains the respective hostel premises under the direct supervision of the hostel administration. The kitchen available in both the hostels were FSSAI certified and are properly maintained with no compromise in the quality of food. Both boys and girls hostel have same mess run on a 'Dividing system' and the mess halls are provided with TV facility. A mess secretary assisted by mess representatives from each year in both the boys and girls hostels maintains the respective mess under the direct supervision of the hostel administration. The hostel amenity committee meets regularly to review the hostel accounts and mess rates and recommend necessary measures for the efficient and economical functioning of student mess.

Boys hostel

At present, 54 boys are residing in the boys hostel block. Due to insufficient rooms in the boys hostel, the existing teaching quarters and non teaching quarters are converted into boys hostel and 12 boys are residing in teaching quarters and 4 boys are residing in the non teaching quarters.

An R.O. plant (1000 lr. per hour) has been installed in the boys hostel for drinking water purpose. Water dispenser is installed for hot water and cold water drinking. Hostel is equipped with GYM facility with BODYFIT 30Kg Weight Plates Home Gym with 6 station, sports equipments like carom board, chess, ring ball, throw ball, foot ball, volley ball, cricket bat and ball. Hostel is equipped with recreation TV hall facility. The hostel premises are covered with CCTV Surveillance system. Rice Boiler of 25kg, vegetable cutter, dough machine, bio gas plant is installed for recycling of waste items. Each block has been provided with wifi facility with 10 Mbps speed and intercom facility.

Girls hostel

A total of 58 UG students, 6 PG students were accommodated in this hostel.

Water Dispenser is installed in the girls hostel for drinking water. Steps were taken for providing adequate uninterrupted water supplies to the girls' hostel. Security along with CCTV surveillance system has been installed in girls hostel. Recreation facilities like throw ball, volley ball, shuttle cork, carrom, chess, ring ball are available. Girls Hostel has been provided with wifi facility with 10 Mbps speed and intercom facility.

Room Facility

Dining Hall with TV facility

E. IFPGS, Vaniyanchavadi, Chennai

Both boys and girls students are accommodated in new hostel building, OMR Campus, Vaniyanchavadi, Chennai. Totally 108 students comprising of 54 boys and 54 girls were provided with hostel accommodation. Hostel inmates are monitored by a Warden and Deputy Wardens.

F. CFNFT Madhavaram

Boarding facility for 14 students of 2019-20 batch was arranged in Junior Boys Hostel. Senior Boys Hostel was established during 2018 for 19 students of 2018-19 batch. CCTV surveillance was established in all the hostel premises.

H. DIVA, Muttukadu

Boy students are accommodated in private building and girl students are accommodated in IFPGS hostel.

I. DIVF, Ramanathapuram

The hostel for the boys is functioning in a hired building at Pirappanavalasai, Ramanathapuram. A total of 9 boys are staying in the hostel.

4.2.2. Students Placement and Career Guidance Cell

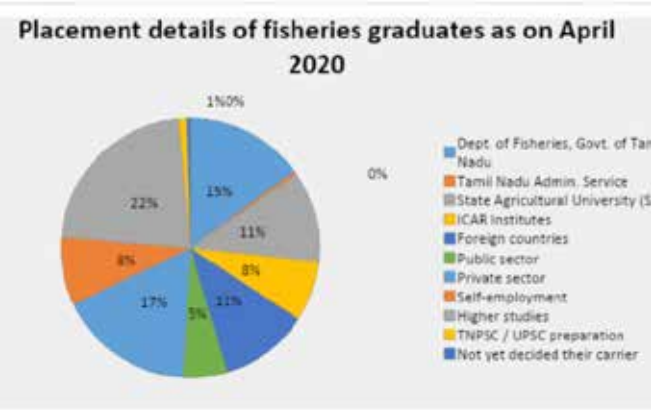
A. FC & RI, Thoothukkudi

The graduates are well placed in various Union and state govt organizations, universities and private sector. Some of them have transformed into big entrepreneurs providing employment to a large number of people.

Total students passed out – 930 (626 Boys + Girls 304)

Sectors	Numbers
Dept. of Fisheries, Govt. of Tamil Nadu	139
Tamil Nadu Admin. Service	4
State Agricultural University (SAUs)	105
ICAR Institutes	70
Foreign countries	104
Public sector	51
Private sector	158

Self-employment	79
Higher studies	207
TNPSC / UPSC preparation	9
Not yet decided their carrier	4
Total	930



The students placement and career guidance cell of Fisheries College & Research Institute, Thoothukudi has been functioning at FCRI, Thoothukudi since 2003. It arranges campus interview for the selection of fisheries graduates for various corporate companies. The cell maintains a computerized database of fisheries graduates and postgraduates. Utilizing this database, the cell provides the list of graduates to the recruiting agencies. The cell collects and disseminates higher education information available from various sources for the welfare of the student community. The cell regularly sharing the job availability details to current and passed out students through email and social media platform. The cell conducts mock examinations to make the students industry ready. It also assists the industry as well as other organizations to source the fisheries professionals for their company by providing passed out students bio-data.

B.F.Sc., Fisheries graduates are eligible to join as sub inspector of Fisheries and Inspector of Fisheries in the Tamil Nadu Fisheries Department and also Tamil Nadu Fisheries Development Council are offering Assistant Manager Post. Further, in Tamil Nadu Dr.J.Jayalalithaa Fisheries University and its constitution of colleges and field centres are offering Fishery Assistant and Farm Manager post. In Central Fisheries University and its Regional and Field centers are offering Technical officer (T6) Technical Assistant (T4) M.F.Sc., and Ph.D., Fisheries graduates are able to join as Inspector of Fisheries and Assistant Director of Fisheries in Tamil Nadu Department. Further in Fisheries University, they are able to join as Assistant Professors and Teaching Assistants. Institutions under the aegis of Indian Council of Agricultural Research (ICAR) are offering Agricultural Research Scientist (ARS) and subject Matter Specialist (SMS) in KVKs. In a private sector, public under taking bank such as State Bank of India, Punjab National Bank and etc., are offering Technical officer in the field of Fisheries Science and Fish Feed Industries are offering Fish Marketing Officer, and Private companies are offering Hatchery technician and Farm manager and etc.,

In Marine Product Export Development Authority (MPEDA), Rajiv Gandhi Centre for Aquaculture (RGCA) and NETFISH are offering various designations are Assistant Director, Research Assistant, Assistant Technical officer, APM, PM and state Co-ordinator available for fisheries graduate. The private fish processing industries are offering Quality control officer and Food Technologist available. In ICAR, the Central Fisheries University and State Agricultural Universities (SAUs) offering various job opportunities like Junior Research Fellow(JRF), Senior Research Fellow (SRF) and Project Assistant (PA), Research Associate (RA), Project Assistants (PAs) pertaining to the project and schemes.

During the period under report the cell has communicated to four companies for the placement of the fisheries graduates. About 50 short listed graduates attended on line survey link sent by concerned officials of CP Aquaculture (Pvt) Ltd for the selection of fisheries graduates for online interview. The cell also provided the list of fisheries graduates bio data to Shenlong, Muthuzhaglu fish farm, Gadre Marine Export Pvt. Ltd and Kemin Aqua science etc., for the placement of fisheries graduates.

During the year (2019-20), The cell has contacted the following concerns for the placement of fisheries graduates

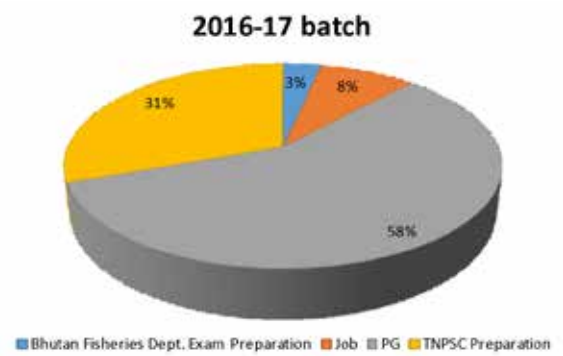
1. M/s. CP Aquaculture Private Limited, Chennai (SelvinJayakumar - 9940013015)
2. M/s Muthazhalgu fish farm, Theni district (Sudhakar K.P. - 7373747583)
3. M/s Gadre Marine Export Pvt. Ltd. (Dr. Arote - 9823120179)
4. Kemin Aqua science Pvt. Ltd (Edwin – 9941394171)

B. Dr. MGR FCRI, Ponneri

The Students Placement and Career guidance cell of Dr. MGR Fisheries College and Research Institute,

Ponneri makes arrangement for campus interview for the placement of fisheries graduates. The cell maintains a database of fisheries graduates and postgraduates who have passed out from the institute and provides the list to various corporate companies and educational institutes under SAUs for recruitment. Further, the cell collects and disseminates information on higher education in India and abroad for the welfare of the student community.

The higher studies and the placement details of the passed out final year students (2016-17 batch) as below:



Out of 59 students, 16 students got good ranks in ICAR-JRF and 1 student in KUFOS and 1 student in CAU PG entrance examinations (2020-21) and secured PG admission in ICAR-CIFE-Mumbai, KUFOS-Kerala and College of Fisheries-Tripura. During the year under report, the cell has conducted 3 ICAR-JRF mock examinations (totally 7) for the benefit of the final year B.F.Sc. students (2017-18 batch).

Group discussion and special lectures on "Facing an interview: Tips and tricks to boost your confidence" and "CP Aquaculture-an overview" were organized from the Cell with the support of M/s. CP Aquaculture, Chennai on 19.03.21. The cell has also arranged a lecture on "Career and Higher studies opportunities of B.F.Sc" during Orientation Programme of first year (B.F.Sc. 2020-21 Batch) on 10.02.21.

Special lecture and Group discussion conducted by Mr. Selvin Jayakumar, Manager (HRD), M/s. CP Aquaculture

Five undergraduate students got placement in M/s. Hybreed Aqua-Pondicherry, M/s. Virbac-Pattukottai and Shrimp Farm-Ponneri as Technician, Territory Sales Executive and Supervisor, respectively. Six postgraduate students got placed in TNJFU, SVVU and M/s. Unibio India Hatchery, Chengalpattu at different positions. Ms. R. Bharathipriya has registerd her Doctoral degree with the support of Cell at Prince of Songkla University (PSU), Thailand with the PSU Fellowship.

C. Dr. M. G. R. FC & RI, Thalainayeru

Placement and Career Guidance Committee was formed with the following members.

Chairman: Dr. N. Jayakumar, Associate Professor and Head, DFBRM

Members: Mr. V. Vijayarahavan, Assistant Professor, DFPT

Th. V. Durai, Assistant Professor, DFEFT

D. College of Fisheries Engineering, Nagapattinam

Tutorial Classes for SC Students by visiting Eminent Experts for preparing National /International competitions

The College of Fisheries Engineering, Tamil Nadu Dr. J. Jayalalithaa Fisheries University, Nagapattinam organized Tutorial Personality Development Classes for SC Students from 12.03.2020 to 13.03.2020 at Seminar Hall. The sessions were handled by PR Radha, Smart Series Bangalore. The session includes self motivation to set and achieve goals and tools and techniques to effectively manage the tasks within given time, problem solving and decision making. This programme was funded by ICAR-Strengthening and Development of Higher Education-SC-SP 2020.

Personality Development Programme was organized for the B.Tech students (I, II and III year) at College of Fisheries Engineering on 12.03.2020 and 13.03.2020. The session was handled by Ms. Radha, CEO, Smart Series, Bengaluru at College of Fisheries Engineering. The students were motivated for better communication skills, time management, stress management, interview handling techniques, resume writing, group discussion and personal interview. The program was funded by ICAR DG SC-SP 2019-20.

4.2.3. Library

A. FC & RI, Thoothukudi

This library provides the collection of printed materials as well as electronic media on the subjects of fisheries, such as Fisheries Biology, Aquaculture, Aquatic Animal Health, Fish Processing Technology, Fish Quality, Fisheries Environment, Fishing Technology, Fisheries Economics and Management and Fisheries Extension etc., to the staffs and students of this institute. The modern documentation services such as CD-ROM search and On-line databases search, internet and e-mail services are available in this library.

B. Dr. MGR FCRI, Ponneri

This library has collection of printed materials as well as electronic media on the subjects of fisheries, such as Fisheries Biology, Aquaculture, Aquatic Animal Health, Fish Processing Technology, Fish Quality, Fisheries Environment, Fishing Technology, Fisheries Economics and Fisheries Extension etc., and these collection are available to a wide range of students and staffs of this institute. Circulation activities of the library had been automated by KOHA Integrated Library Management System. Photocopying facility is provided for the benefit of staff and students.

C. Dr. M. G. R. FC & RI, Thalainayeru

Fully ventilated and computerized reading rooms were established in this institute. Totally, 985 books related to fisheries are available in the library. Additionally, 48 teaching manuals, 13 journals/ magazines, 229 e-books and 400 Tamil e-books are available. KOHA software was also installed in the library. Book bank is maintained for competitive and ICAR exams. Daily newspapers are available for reading. Computerized issue-return, internet facility, photocopying facility, printing facility are available for staff and students.

D. College of Fisheries Engineering, Nagapattinam

The CoFE library has more than 1821 books available. The library is equipped with RFID security system and library automation facilities with USB based biometric scanner.

E. IFPGS, Vaniyanchavadi, Chennai

The library houses 521 books of which 73 books were purchased under ICAR-DG 2017-18. The library facility is used by undergraduate and postgraduate students and faculties.

4.3. STUDENTS ACTIVITIES

4.3.1. Students Association Activities

A. FC & RI, Thoothukudi

74th Independence Day

Fisheries College and Research Institute, Thoothukudi celebrated the 74th Independence Day by maintaining social distance. The Dean, Dr. B. Sundaramoorthi, FC&RI, Thoothukudi was escorted to the dias by the Security Staff Commander and the Sports Secretary. A guard of honour was performed by the Security staff. Dr. B. Sundaramoorthi, Dean, FC&RI, Thoothukudi hoisted the National Flag. The college teaching and non-teaching staff and security personnel honoured the National flag. Subsequently, Dean in his Independence Day address, reminded the sacrifices of those great men and women who played pivotal roles in building the Independent India. He spoke about patriotism in present day context.

Traditional Festival

Traditional day was held on the 7th of January, 2021 at the college campus. All the students, teaching

and non-teaching staffs came in traditional attire to the college. Event was inaugurated with lamp lightening and pooja by the Dr. B. Sundaramoorthi, Dean, FC&RI, Thoothukudi. He addressed the gathering about the richness of traditional day. Followed by the Dean Speech, several traditional games were conducted.


6th International Yoga Day

Fisheries College and Research Institute, Thoothukudi celebrated International Yoga Day on 22.06.2020 through video conference due to COVID 19 lock down. During this function, Dr. B. Sundaramoorthi, Dean, Fisheries College and Research Institute, Thoothukudi delivered the presidential address. The Dean explained origin of yoga in India and also urged the staff and students to practice yoga regularly to become healthier. A special lecture on value of Yoga in current life style was given by Mr.K. Parthasarathi, Yoga Master, Five Element Yoga Reactive Therapy, Thoothukudi. He explained most commonly known and practiced asanas for the current life style. A sum of 200 staff and students of this institute attended and benefited from this online International Yoga day celebration.

72nd Republic Day

Fisheries College and Research Institute, celebrated the 72nd Republic Day along with the teaching and non-teaching staff by maintaining social distance. A guard of honour was performed by the security staffs. Dr. B. Sundaramoorthi, Dean, unfurled the National Flag Mr. S. Nandhagopal and Ms. Amirtha Kayalvizhi of I Year students of B.F.Sc. delivered their speech on patriotism in tamil and English, respectively. The Dean announced and distributed the best worker awards for the employees of the institute. He reminded all to take the vision of our Prime Minister to work for a New India which would make our valiant freedom fighters proud.

B. Dr. MGR FC & RI, Ponneri

World Food Day-2020

The Students Association of Dr. M.G.R FC&RI, Ponneri celebrated World Food Day-2020 through Google meet online platform on 16.10.2020. Dr. B. Ahilan, Dean & President of Students Association inaugurated the celebration and this was followed by presidential address of Dr. Manikandavelu, Vice President of Students Association. Ms. Shobika, III B.F.Sc delivered a speech on "Things to do to change the food system" followed by Mr. Alwin Peter, II B.F.Sc speech on "Food as medicine". To commomerate the occasion, Dr. B. Ahilan, Dean, Dr. MGR. FC&RI, Ponneri read the "World Food day pledge" which was repeated by the staff members and students.


Agricultural Education Day

The Agricultural Education Day was celebreated virtually on the theme of "**Green Earth – by the Students, for the Students**" at Dr.M.G.R Fisheries College and Research Institute, Ponneri. Dr. B. Ahilan, Dean, Dr. M.G.R FCRI, Ponneri delivered the presidential address of the event and Dr. D. Manikandavelu, Vice President of Students Association delivered the felicitation address. The highlight of the event was an awareness debate in Tamil entiltled "இன்றையை சூழலுக்கு அதிக பயன் தருவது கரிம (organic) வளோண்மையா? கனிம (inorganic) வளோண்மையா?" in which the institutes students participated. Mr. P. Sundar, B.Sc (Agri)., MBA (Agri Business Management) a practicing Horticulturist served as the Judge of the debate.

Pongal festival

The pongal festival combined with traditional day (PaarambariyaVizha) was celebrated at Dr. M.G.R. Fisheries College and Research Institute, Ponneri on 12.01.2021. Dr. B. Ahilan, Dean, presided over the function and delivered address on the importance of cherishing traditional values as it is necessary for moral boost during the COVID-19 scenario. As a part of the celebration, students prepared sweet pongal and based on a taste panel remark they have been rewarded. Uriadi competition was also conducted for students and staffs.

Orientation programme

The orientation programme for newly admitted B.F.Sc (2020-21 batch) students was organized at Dr. M.G.R. FC and RI, Ponneri on 10.02.2021. Dr. B. Ahilan, Dean of the institute delivered the welcome address and introduced all the faculty of the institute to the students and their parent/guardian. Then, the newly admitted students one by one self-introduced themselves to the gathering. The academic rules, scholarship opportunities, co-curricular activities, hostel rules, placement cell activities, sports facilities and NSS activities of this institute was explained by the faculty staffs to the newly admitted students.

Freshers party

The students of II year B.F.Sc [2019 – 2020 batch] organized the freshers party – "Ben Venuto Amigos – 2021" for the newly joined I year B.F.Sc., students (2020 -2021 batch) of the institute on 05.03.2021. Dr. B. Ahilan, Dean, welcomed the newly joined students and gave his presidential address. Freshers made the day memorable by introducing themselves and exposing their hidden talents. Pleasantries were delivered to all the new comers for their participation and cooperation in the delightful event.

International Women's day

International Women's Day was celebrated on 08.03.2021 at Dr. M.G.R FC & RI, Ponneri. The presidential address was given by the Dean, Dr. B. Ahilan. Smt. S. Swarna Bai, Headmistress of Minjur Panchayat Union Middle School, the chief guest, delivered the chief guest address in briefing about the importance of women's role in daily life. The event was well organized by the student's association with various events like cooking, fun games, dance and the debate on the topic "Whether women had their freedom in this society?", which was judged by Dr. D. Manikandavelu. The prizes were distributed to the winners for the respective events by the Dean and Chief Guest.

Inaugural Ceremony of the Students Association

Inaugural Ceremony of the Students Association for the academic year 2020 - 2021 was held at Dr. M.G.R FC & RI, Ponneri on 22.03.2021. Dr. B. Ahilan, Dean and President of Students Association briefed the importance of leadership qualities among the students and the need to explore fresh talents from newly admitted students. Mr. S. Dhinakaran, final year student took charge as General Secretary of the Association along with the other 11 new secretaries. The new secretaries took administering oath and followed by cultural activities of the students.

C. Dr. MGR FC & RI, Thalainayeru

TNJFU Foundation Day

TNJFU Foundation Day was celebrated on 19.06.2020. Poetry competition on "Speciality of TNJFU among the Fisheries Universities in India" and essay writing competition on "Impact of COVID -19 on Fisheries Sector in India" and quiz competition was conducted among the students via Google meet.

National Fish Farmers Day

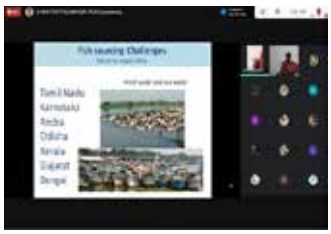
In view of National Fish Farmers Day, Department of Aquaculture has conducted awareness programme cum quiz competition to the Fish farmers on 10.07.2020 via Google meet and also delivered guest lecture on the topic "Present status of fish farming in India".

74th Independence Day

Seventy fourth Independence Day was celebrated at Dr.MGR FC&RI, Thalainayeru on 15.08.2020. Dr. S. Balasundari, Dean, hoisted the National Flag and addressed the gathering. The teaching, non-teaching and contractual supporting staff have attended the programme whereas, sixty students have participated the Independence Day celebration on Google Meet.

World Fisheries Day

The online Question-Answer Programme was organized, in which the question relating to fish culture, water quality management, fish disease management, fish processing etc., were asked by the fish farmers, fisheries entrepreneurs, fisher folk and aqua industries personnel and the answers were delivered by the experts of this college. A guest lecture was also arranged to the students on "Marketing and value chain with special reference to modern trade practices in fisheries" by Mr. M.Dayalan, Consultant, World Fish centre, Bangalore. Grass carp fingerlings were released in community pond with the participation of villagers at Oradiyambulam to control aquatic weeds. Finally, essay writing, poetry and drawing competitions were conducted for students and cookery competition was arranged for the employees of the college for various traditional food preparations from fish.



Constitution Day

A special talk was organized on "Constitutional values and principles of Indian constitution" for the students and faculty staff through online mode on 28.11.2020 to commemorate Constitution Day. Th. Krishnakumar Joint secretary to Govt. (Retd.), P & AR Department, Go TN has delivered a special talk and detailed the preamble of the Indian constitution, salient features of the Indian constitution, fundamental rights and fundamental duties, equality in public employment and constitutional rights to women.

Agricultural Education Day

The Agricultural Education day was celebreated at Dr.M.G.R. FC and RI, Thalainayeru on 03.12.2020. In this regard, an awareness programme was conducted for the school students from Oradiyampulam and Vattakudi villages. A presentation was made to the students about the agricultural education and courses offered by our University. Flyer on educational

programmes of our University was distributed to the students.


Motivational Talk by the entrepreneurs

A virtual talk on "Experience and success story of Shrimp farming" by Mr. Balakrishnan, Shrimp farmer, an Alumnus of TNJFU and "Experience and success story of Seafood Processing and Export" by Mr. Joseph Raghunath, an Alumnus of TNJFU and Managing Director, Danica Aqua Pvt. Ltd., Vishakhapatnam. He also insisted upon the employment opportunities in seafood export sector and current scenario of placement of fisheries graduates in the sector.

72nd Republic Day

72nd Republic Day was celebrated at Dr. MGR FC&RI, Thalainayeru on 26.01.2021. Dr. S. Balasundari, Dean, hoisted the National Flag and addressed the gathering. The teaching, non-teaching and contractual supporting staff have attended the programme whereas, the thirty students have participated in the Republic Day celebration on Google Meet.


International Women's Day

International Women's day was celebrated at Dr. MGR Fisheries College and Research Institute, Thalainayeru on 09.03.2021. Dr. S. Balasundari, Dean, followed by the Chief guests, Dr. Sumathy Das, Regional Joint Director, Dept. of Animal Husbandry, Nagapattinam and Dr. M. Vinoothini, Advocate and Deputy Area Commander, Nagapattinam were addressed the importance of women`s role in our life. Tmt. Elatchi was honoured on this occasion and given certificate for her excellence as women entrepreneur in Nagapattinam District


World Water Day

World Water Day was celebrated at Dr.M.G.R FC&RI, Thalainayeru on 22.03.2021. As a part of this celebration, Mr. J. Prakash, Executive Officer from Thalainayeru Panchayat was invited as a Chief Guest. Dr. S. Balasundari, Dean, has delivered the Presidential address enlightening the importance of water resources in the context of Aquaculture and other allied farming sectors. A special debate was held on "Indraya Soolalil Kattaya Neer Melanmai - Avasiyama (or) Avasiyamatratha" was conducted by the Staff of Dr.M.G.R. FC&RI, Thalainayeru.

Vigilance Awareness Week

In view of the Vigilance Awareness Week (27.10.2020 to 02.11.2020), competitions (Elocution and poetry) were conducted among the students through online mode.

India's 75 years of Independence Celebration

The celebration of Indias 75 years of Independence "Azadi Ka Amrut Mahotsav" commenced on 12.03.2021 with the launch of the celebration of a 25-day event. In the light of above, an essay competition was conducted on the topic "Indias freedom Struggle" in Tamil and English at Dr. M.G.R. FCRI, Thalainayeru on 12.03.2021. A total of 22 students (11 each in Tamil and English) participated in the competition.

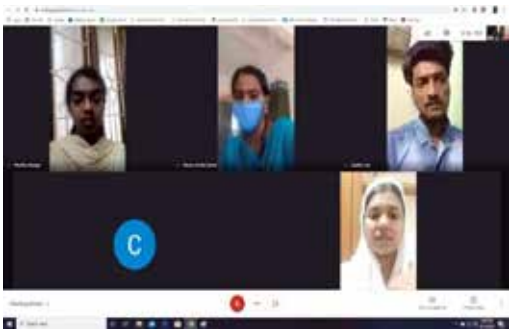
D. CoFE, Nagapattinam

Students Association Inaugration

The inaugural function of students association for the academic year (2020-21) was conducted on 15th

March 2021 at college seminar hall. Dr. R. Rajendran, Dean and President of Students' Association gave the presidential address and motivated the students to learn atleast one extracurricular activity to excel in the personal life. Dr. N. Manimehalai, Vice president of students association, briefed the role and responsibility of the office bearers of the students Association. All the secretaries were administered oath by the Vice- President, Students Association. Cultural events were performed by the Junior students. The General Secretary, CoFE Students' Association Mr. P. SanthoshKumar briefed the annual workplan of Student's Association.


TNJFU Foundation Day 2020 Celebration



Foundation Day of Tamil Nadu Dr. J. Jayalalithaa Fisheries University was celebrated at 19.06.2020 by College of Fisheries Engineering, Nagapattinam. The program started with online quiz event. On this special day, around 99 students from CoFE and CEE were attended the event. Miss R. Ramya of II B.Tech (COFE) and S. Nivetha of III B.Tech (CoFE) delivered the speech on Roles and responsibilities of fisheries Engineering in fisheries sector. Students were awarded with E-certificates.

International Day of Yoga


The 6th International Day of Yoga was celebrated on 22st June 2019 through Google Meet at College premises. The programme was presided by Dr. N. Manimehalai, Prof.& Officer i/c, College of Energy and Environmental Engineering. Mr. Karu. Vetri Vendhan, Head Master and Yoga trainer, Government Higher Secondary School, Sivagangai, has explained the importance and benefits of yoga and meditation among the students and faculties through Google Meet. Dr. D. Natarajan, Assistant Director of Physical Education, FC&RI, Thoothukudi, explained the benefits of practicing asanas daily and demonstrated more than ten yoga asanas, mudras and pranayama to the faculty members, non-teaching staff and contractual employees of the college.

72nd Republic Day

On 26.01.2021, 72nd Republic Day of our Nation was celebrated grandly in CoFE, Nagapattinam. Prof.Dr.R. Rajendiran hoisted the National Flag and delivered Republic Day wishes to all. In this event, faculty members, non-teaching staff, and students were participated.

F. SRLAAH, Madhavaram

Orientation programme were conducted for B.Voc AAHM 2020-2021 batch.

Women's day and Science Day

Womens day and Science Day were celebrated on 8.3.2021 at the Paraprofessional Institute for Aquatic animal health. Competitions were conducted and prizes were distributed to the students



E. DIVA-Muttukadu

International Womens Day

International Womens Day celebration at PPIAT, DIVA-Muttukadu campus on 08.03.2021 with the theme "Choose to Challenge"

75th Independence Day

Celebration of Indias 75th years of Independence at PPIAT, DIVA-Muttukadu campus on 12.03.2021 to mark the anniversary of the launch of Dandi March - Essay writing and elocution competition.


International Womens Day celebration

"Elocution competition" Celebration of India's 75 years of Independence

4.3.2. Sports

A. FC & RI, Thoothukudi

Hostel day games

Hostel Day was celebrated on the 5th of March, 2021. All the students were grouped into four teams. Several games like volleyball, throw ball, kabaddi and minor games were conducted for the boys and girls students. The entire event was arranged by Dr. B. Sundaramoorthi, Dean, FC&RI, Thoothukudi.


74th State Senior Aquatic Championship

74th State Senior Aquatic Championship swimming competition was conducted on 6th& 7th March, 2021 at Aquatic Complex, Velachery, Chennai. Mr. S. V. Harispadian of 2nd Year B.F.Sc., participated and given his best in that competition.

Sports Day

Sports day games meeting was conducted on 12th of March. Dr. B. Sundaramoorthi, Dean, FC&RI, Thoothukudi has given a motivational speech and advise for the sport day. Games were conducted for both boys and girls.


B. Dr. MGR FC & RI, Ponneri

Dr.M.G.R FC and RI, Ponneri has well established indoor (carrom board, table tennis, and chess and shuttle court) and outdoor games facilities (volleyball, basketball, futsal courts and throw ball court) for boys and girls students. In this year, Dr.M.G.R FC&RI, Ponneri has established the sports facilities for kabadi ground (boys), volleyball ground (girls), athletes facility like long jump and high jump and also lighting facility for throw ball court (girls).


Basketball Court **Volleyball Court**

Football Court

Long Jump Pit

Kabadi Ground

Throw Ball Court

Sports Day

In connection with Annual Sports Day 2020 -2021 celebration, totally 15 games events: indoor– 8 (carrom (M&W), table tennis (M&W), chess (M&W) and shuttle (M&W), outdoor- 7 (volleyball (M&W), basketball (M), futsal (M), throw ball (W), cricket (M), kabadi (M)) were conducted. However, the Annual Sport Day, 2021 was not conducted due to the lockdown.

Event participated

Mr. D. Navin Kumar (1st year B.F.Sc.), (2020-21 Batch), sudent of Dr. M.G.R FC & RI, Ponneri, participated in the event in FIRST SQAY NATIONAL CHAMPIONSHIP 2021 organised by SQAY Association of Rajasthan under the ageis of SQAY Federation of India during 25-28 February 2021. He also bagged gold medal in Kawankey event and Bronze medal in Loba (fight).

C. Dr. MGR FC & RI, Thalainayeru

College Day cum Sports Day

The College Day cum Sports Day was celebrated on 08.03.2021. During this occasion, various on-stage and off-stage events were conducted for the students. The overall winner was bagged by the I B.F.Sc. (2020-21 batch) and III B.F.Sc. (2018-19 Batch) won runner in the college cultural events. The sports day overall championship was bagged by the students of III-year B.F.Sc. (2018-19) and II-year B.F.Sc. (Batch 2019-20) won the II prize (runner).

4.3.3. NSS

A. Dr. MGR FC & RI, Ponneri

Campus cleaning programme

The campus cleaning programme was conducted by the NSS unit under the guidance of Dr. B. Ahilan, Dean, on 03.03.2021 at 4:00 to 6:00pm. The students of the institute actively participated in this programme amd removed the weed plants present in the campus. The collected wastes were segregated into degradable and non-degradable wastes and the municipality workers came and took away all the collected wastes from the campus.

SVEEP

NSS unit of Dr. M.G.R Fisheries College and Research Institute, Ponneri and the State Fisheries Department have jointly organized the "**Systematic Voters' Education and Electoral Participation Program [SVEEP]"** on 26.03.2021 at Pulicat. The SVEEP was organized as a students rally themed "100 % voting by the public in upcoming election" on 06.03.2021. The rally was inaugurated and lead by the Dean, Dr. B. Ahilan and Mr. Ajay Anand, Assistant Director Fisheries, Thiruvallur District along with the fishermen representatives of Pulicat. Final year students of Dr.MGR FCRI, Ponneri with all the COVID-19 precautions actively participated in the rally to impart the awareness to the general public about responsibilities of the Indian Citizens in voting.

B. Dr. MGR FC & RI, Thalainayeru

Blood Donation Camp

Blood donation camp was conducted at Dr. MGR. FC and RI, Thalainayeru as a part of NSS programme on 08.01.2021. 15 volunteers were actively donated blood and an appreciation certificate was also distributed to the volunteers.


Turtle Walk

Final year students (2017-18 batch) have undergone turtle walk campaign from 04.03.2021 to 05.03.2021 at different regions viz, Poombhukar, Thoduvai and Chinnangudi shores for the collection of turtle eggs. Totally 21 students were participated along with NSS Coordinator.

Voter Awareness campaign Rally

36 students (2019-20 batch) along with 1 staff were participated in Awareness campaign to create awareness among the fisherfolk for 100% voting in the assembly election on 04.03.2021, held at Nagapattinam Fishing Harbour jointly organized by the State Fisheries Department, Forest Department and Coast Guard of Nagapattinam.

C. IFPGS, OMR, Chennai

Beach cleanup

B.Tech., (Biotech) students of TNJFU-Institute of Fisheries Biotechnology, Chennai participated in the "Beach cleanup" event organized by **M/s. Environmentalist Foundation of India (EFI),** a not-for-profit trust. In total, 31 students took part in the event in Panaiyur beach on East Coast Road, Chennai on 26.12.2021 from 7 to 9 pm.

Campus Cleaning Program

The students of IFBT (2021-2022) batch and NSS volunteers organized the campus cleaning activity on 15.02.2022 and 22.02.2022. Totally, 29 volunteers participated in cleaning of IFPGS campus. The program was organized by Dr. S. Prakash, NSS officer, IFPGS, OMR Campus.

D. CoFE, Nagapattinam

Inauguration of Red Ribbon Club

A Red Ribbon Club (RRC) was inaugurated at College of Fisheries Engineering, Nagapattinam on 08.02.2021 (Monday). Dr. R. Rajendran, Dean (i/c) of the College presided the event. Further, he also contended that the RRC activities of the CoFE are appreciable and notable on social conscious.

The Consultant-Integrated Counseling and Testing Centre (ICTC), Nagapattinam, Mr. N. Senthil Kumar and the Consultant-Integrated Counseling and Testing Centre (ICTC), Nagore Government hospital, Mr. T. Rajesh Kannan were the Guests of the function. The chief guest has inspired everyone by his humorous and sensational speech. During his speech, he delivered the issues like Sexual Transferable Diseases (STD), origin of HIV virus, the ways and means to control the spreading rate of HIV infection among the rural mass. Since, most of the spectators are in the adolescent groups, the methods of creating awareness about HIV virus and the consequences of the diseases have been explained scientifically. The role of student and RRC volunteers in educating the illiterate people living in the neighbouring villages was also enumerated in detail. The certificates are distributed for RRC competitions to the winners.




HONOURS / AWARDS

5 HONOURS / AWARDS / MEDALS

1. Dr. S. Balasundari, Dean, Dr. M.G.R FC&RI, Thalainayeru has received Scientific Tamil Excellence Award from Agricultural Scientific Tamil Society and Best Women Scientist from Society of Krishi Vigyan, New Delhi. She also won an Appreciation award from Tamil Nadu Dr. J. Jayalalithaa Fisheries University for commercialization of technologies.
2. Dr. N. Manimehalai, Dean, CoFE, Nagapattinam has received Best Research Paper Award from SRM University.
3. Dr. S. Athithan, Professor and Head, FC&RI, Thoothukudi has received Outstanding Teacher Award given by Society for Biotic and Environmental Research (SBER).
4. Dr. A. Uma, Professor and Head, Dr. M.G.R FC&RI, Ponneri has received Appreciation Award for the development of patented technologies and Best Researcher Award from Tamil Nadu Dr. J. Jayalalithaa Fisheries University. She also won a Best Popular article Award from Agricultural Scientific Tamil Society.
5. Dr. N. Jayakumar, Associate Professor and Head, Dr. M.G.R FC&RI, Thalainayeru has received TNJFUs Best Teacher Award from Tamil Nadu Dr. J. Jayalalithaa Fisheries University.
6. Dr. P. Ganesan, Assistant Professor, FC&RI, Thoothukudi has received Fellow Membership FWRA given by World Researchers Associations.
7. Mr. M. Muruganantham, Assistant Professor and Dr. R. Shalini, Assistant Professor, FC&RI, Thoothukudi has received Best Research Paper Awards from Agricultural Scientific Tamil Society.
8. Ms. S. Agnes Daney Angela, Assistant Professor and Head, Dr. M.G.R FC&RI, Ponneri has received Best young professional award from Agricultural Scientific Tamil Society.
9. Dr. A. Subburaj, Assistant Professor, Dr. M.G.R FC&RI, Thalainayeru has received Best Paper Presentation Award from Agricultural Scientific Tamil Society.
10. Dr. P. Karthickumar, Assistant Professor, CoFE, Nagapattinam has received first prize in Oral paper presentation given by Agricultural Tamil Scientific Society.
11. Dr. D. Kesavan, Assistant Professor, CoFE, Nagapattinam has received Best Oral Presentation Awards in the Virtual International Conference on Food and Agriculture Science and Technology, Salem and in the 5th National Conference on Agricultural Scientific Tamil given by Agricultural Tamil Scientific Society.
12. Mr. T. Anand, Assistant Professor, CoFE, Nagapattinam has received Best Research Paper Award from Agricultural Tamil Scientific Society.
13. Er. S. Monikandon, Assistant Professor, CoFE, Nagapattinam has received Best Oral Presentation Award in the Virtual International Conference on Food and Agriculture Science and Technology, Salem.
14. Dr. A. Gopalakannan, Programme Coordinator of KVK, Sikkal, Dr. K. Chandrasekar, Subject Matter Specialist (Plant Protection) of KVK, Sikkal and Mr. J. Sathishkumar, Driver of KVK, Sikkal have received Best Worker Awards for the Outstanding performance of Official duty given by Tamil Nadu Dr. J. Jayalalithaa Fisheries University.
15. Dr.R. Somu Sunder Lingam, Assistant Professor of DSA-KBCeSA, Barur has received Prof. Alikunhi Gold Medal Award for Best Ph.D. Thesis and Prof. Ravindranath Krothapalli International Travel Award from ICAR – CIFE, Mumbai.
16. Ms. S. Subhashree, Research Scholar of FC&RI, Thoothukudi has received Best Research Paper Award from Agricultural Scientific Tamil Society.

17. Ms. M. VinothiniVaz, Research Scholar of CoFE, Nagapattinam has received Best Oral Presentation Award in the Virtual International Conference on Food and Agriculture Science and Technology, Salem.

18. Ms. K. Geetha, UG Student of CoFE, Nagapattinam received has received Best Oral Presentation Award in the International Conference on Novel Engineering materials for Biomedical, Energy, Environmental Sensing, and other application given by National Institute of Technology, Trichy.

19. Mr. M. Jerish, UG Student of CFNFT, Madhavaram has got 1st place (Rs 500 Amazon gift voucher) in photography and 1st place (Rs 500 Amazon gift voucher) in Meme creation Online event on the occasion of Makal Fest given by Maverick Abdul Kalam Association for Leaders.

20. The UG students of CFNFT, Ms. B. Aiswarya has got 1st place in Poetry-Seniors, Ms. M. Ragini has got 2nd place in Poetry-Seniors and Drawing -Seniors and Ms. M. P. Snekha has got 1st place in Creative writing competition on the occasion of birth anniversary of Dr. APJ. Abdul Kalam given by Maverick Abdul Kalam Association for Leaders.

21. Ms. K. S. Kaaviya, UG Student of CFNFT, Madhavaram has got 2nd place in Veg-Décor on the occasion of World Food Day 2020, organized by Annasaheb Danga College of Engineering & Technology, Ashta.

22. The UG students of CFNFT, Ms. B. Aiswarya, G. Keerthi, M. Ragini and M. Sonika, have got 1st place, Ms. M. Tamilarasi, B. Sowbarnika and S. Kasthuri have got 2nd place and Ms. M. Priyadharshini and J. Jaspin Jenisha have got 3rd place in the E-Poster competition on the occasion of World Habitat Day organized by CFNFT, Madhavaram.

23. The UG students of CFNFT, Mr. Mohana Karthick and P. Chandru have got 1st place in the E-Poster and Ms. M. Priyadharshini, M. Tamilarasi, B. Sowbarnika and S. Kasthuri have got 3rd place in the E-Poster competition on the occasion of World Fisheries Day organized by CFNFT, Madhavaram.

24. The UG students of CFNFT, Ms. Sowbarnika has got 1st place in the Photography competition and Ms. Sowbarnika and S. Kasthuri have got 3rd place in the Poster competition on the occasion of World Food Day organized by Kalasalingam Academy of Research and Education, Virudhunagar.

25. Mrs. M. P. Snekha, UG Student of CFNFT, Madhavaram has got 3rd place in Nutrifit competition on Nutrition month celebration given by Gandhigram Rural Institute.

26. Mr. Elachi Ammal, Akkaraipettai, Nagapattinam has received Best SHG Women Award for Best Karuvadu Dry Fish Unit given by DD Pothigai.

27. Mr. G. Shanmugasundaram, Kilvelur block Nagapattinam has received Best Entrepreneur Award for Value added fisheries Products and Export given by DD Pothigai.

28. Mr.K. Sambandham, Sirkazhi has received Best Farmer Award from District Collectorate for Organic Farming Practices.

29. Dr. M.G.R FC&RI, Thalainayeru received Best Constituent College Award from Agricultural Scientific Tamil Society.

DISTINGUISHED VISITORS

6 DISTINGUISHED VISITORS

1. Dr. Anurathna, Chief Medical Officer, Government Hospital, Ponneri, visited Dr. M.G.R FC & RI, Ponneri on 08.09.2020.
2. Mr.Praveen P. Nair, IAS, District Collector, Nagapattinam, visited KVK, Sikkal, Nagapattinam on 12.09.2020.
3. Mr. N. Alagappan, Chief Beliefs Officer, Chennai Mr. G. Karthick, M/s. Puratchidhasan Academy, Ponneri visited Dr. M.G.R FC & RI, Ponneri on 22.09.2020.
4. Dr. Vinoth S. Ravindran, State Coordinator, NETFISH, MPEDA, visited Parakkai on 24.09.2020.
5. Mr. D. Nirmal Raj, Field Coordinator, Centre for Entrepreneurship Development (CED), Anna University, Chennai, visited Dr. M.G.R FC & RI, Ponneri on 29.09.2020.
6. Mr. Sri Sivaram swamy, Deputy General Manager, Cochin Shipyard, visited DIVF, Ramanathapuram on 15.10.2020.
7. Dr. Jegan Mohan, HOD, Agri division, State Planning Commission from TANII and his team, visited State referral laboratory for aquatic animal health at Madhavaram on 27.10.2020.
8. Thiru. C. Ponnaiyan, The Chairman of Tamil Nadu State Planning Commission, TANII Officials and Vice Chancellor of TNJFU, visited State referral laboratory for aquatic animal health at Madhavaram on 05.11.2020.
9. Mr. S. Nagarajan. IAS, Director, EDII- Chennai visited EDII-MPBIF, FCRI, Thoothukudi on 06.11.2020.
10. Mr. C. Shunmugaraj and M. Vignesh Chennai visited EDII-MPBIF, FCRI, Thoothukudi on 16.11.2020.
11. Dr.Velvizhi, Principal Scientist and Head ,MSSRF, visited DIVF, Ramanathapuram on 12.01.2021 and 29.01.2021.
12. Shri. B. Vishnu Chandran, IAS, District Additional Collector, Thoothukudi, Thiru. P. Selvarajan, Additional Director, EDII, Chennai, Thiru. R. Muthuraman, Deputy Director, EDII, Chennai and NABARD Manager, Thoothukudi, visited EDII-MPBIF, FCRI, Thoothukudi on 29.01.2021.
13. Chief Executive Director, NFDB, Hyderabad, visited DIVF, Ramanathapuram on 04.02.2021.
14. Dr. Bhaskaran, Principal Scientist and Nodal Officer for TN & Puduchery KVKs, ICAR-ATARI, Hyderabad, visited KVK, Sikkal, Nagapattinam on 16.02.2021.
15. Dr. Santhanam, Former Dean, FC&RI, Thoothukudi, visited IFPGS - TNJFU Vaniyanchavadi on 01.03.2021.
16. Dr. S. Murugavel, Director (Academics) & Professor (English), Chendhuran Engineering College, Pudukkottai, visited Dr. M.G.R FC & RI, Ponneri on 09.03.2021.
17. Mr. R.K Suresh Ramalingam, District Development Manager, NABARD, Thoothukudi, visited EDII-MPBIF, FCRI, Thoothukudi on 19.03.2021.
18. Mr. Selvin Jayakumar, Department Manager (HR), M/s. CP Aquaculture, Chennai and Mr. S. B. Aravind, Padi Master Instructor, Temple Adventures, Pondicherry, visited Dr. M.G.R FC & RI, Ponneri on 19.03.2021.
19. Dr. Anup Mandal, Project Manager, visited MRFF, Tharuvaikulam on 27.03.2021.
20. Dr. M. Kailasam, Principal Scientist, ICAR– CIBA, Chennai, visited ARFF, Madhavaram on 27.03.2021.

HUMAN RESOURCES DEVELOPMENT

7 HUMAN RESOURCES DEVELOPMENT

7.1.TRAININGS ATTENDED

1. Dr. E. Suresh and Dr. Ambika Binesh, Assistant Professors have attended an online training entitled "Writing a Research Paper based on Meta-analysis" conducted by ICAR – NAARM, Hyderabad during 17.04.2020 to 22.04.2020.
2. Dr. S. Saravanan and Dr. Menaga, Assistant Professors have attended an online training entitled "Writing a Research Paper" conducted by ICAR-NAARM, Hyderabad during 17.04.2020 – 19.04.2020.
3. Dr. M. Ramar, Assistant Professor has attended an online training entitled "GChem Paint and Libre Office" conducted by Department of Chemistry, D.K.M. College for Women, Vellore in association with Spoken Tutorial, IIT Bombay during 04.05.2020 - 08.05.2020.
4. T.L.S. Samuel Moses, Assistant Professor has attended an online training entitled "Journal Citation Reports (JCR) Training & Certification Program 2020" conducted by Web of Sciences, Clarivate on 05.05.2020 & 15.05.2020.
5. Dr. M. Ramar, Assistant Professor and Dr.R. Palani, Assistant Professor (C) have attended an online training entitled "Journal Citation Reports (JCR) Certification Series" conducted by Web of Sciences Group on 05.05.2020 & 07.05.2020.
6. Dr. M. Ramar, Assistant Professor and Dr. R. Palani, Assistant Professor (C) have attended an online training entitled "Research, Funding & IPR conducted by Department of Electronics & Telecommunication", IQAC and R & D Cell, K.C. College of Engineering & Management Studies and Research, Thane (East), Mumbai during 07.05.2020 - 10.05.2020.
7. Dr. Ranjeeta Kumari, Assistant Professor has attended an online training entitled "Therapeurants in Aquaculture" conducted by IFGS, Chennai on 08.05.2020.
8. Dr. C. Judith Betsy and Dr. M. Ramar, Assistant Professors have attended an online training entitled "Journal Citation Reports (JCR) Certification Series" conducted by Web of Science Group on 12.05.2020 & 15.05.2020.
9. Dr.S. Aanand, Dr. Ranjeeta Kumari and Mr. P. Velmurugan, Assistant Professors have attended an online training entitled "Science Communication for Smart Scholars" conducted by ICAR- Central Institute of Fisheries Education, Mumbai during 12.05.2020 to 25.05.2020.
10. Dr. D. Kesavan and Er. S. Monikandon, Assistant Professors have attended an online training entitled "Role of Chemistry in COVID-19" conducted by Vels Institute of Science, Technology & Advanced Studies, Chennai on 13.05.2020.
11. Dr. M. Ramar, Assistant Professor has attended an online training entitled "How to Write a Scientific Research Paper in Three Months" conducted by Department of Science and Humanities, R.M.D. Engineering College, Kavaraipettai on 16.05.2020.
12. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Skills for Librarianship" conducted by LIS Academy and NCSI-Net Foundation, Bengaluru during 16.05.2020 to 21.06.2020.
13. Dr. D. Manimekalai, T. Ravikumar and Dr. B. Chrisolite, Assistant Professors have attended an online training entitled "Science Communication for Smart Scholars" conducted by ICAR- Central Institute of Fisheries Education, Mumbai during 26.05.2020 to 08.06.2020.
14. C. Lloyd Chrispin, Assistant Professor has attended an online training entitled "Data Analytics" conducted by ICAR-IASRI, New Delhi during 26.05.2020 - 31.05.2020.
15. Dr. B. Chrisolite and Dr. S. Aanand Assistant Professors have attended an online training entitled "E learning Ecologies: Tools and Techniques for Enhancing Teaching and Training" Competencies conducted by Central Agricultural University (Imphal), Tripura during 26.05.2020 to 30.05.2020.
16. Dr. B. Sivaraman, Assistant Professor has attended an online training entitled "Laboratory System and Internal Auditor Training" as per ISO/IEC 17025:2017 by Quality Council of India during 30.05.2020 to 31.05.2020.

17. Er. T. Siva, Teaching Assistant has attended an online training entitled "Python 3.4.3" conducted by St. Joseph's Institute of Technology, Chennai and Indian Institute of Technology, Bombay during 11.06.2020 to 13.06.2020.
18. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Pure and Applied Mathematics" conducted by Jamal Mohamed College (Autonomous), Tiruchirappalli during 11.06.2020 to 17.06.2020.
19. Dr. S. Saravanan, Assistant Professor has attended an online training entitled "Ornamental Fish Culture and Breeding" conducted by Department of Biotechnology, Sathyabama Institute of Science and Technology, Chennai during 15.06.2020– 19.06.2020.
20. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "KOHA" conducted by Department of Library, Hyderabad Institute of Technology and Management, Hyderabad, Telangana in association with Spoken Tutorial, IIT Bombay during 17.06.2020 to 19.06.2020.
21. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Avant-grade Trends in Mathematics" conducted by Bannari Amman Institute of Technology, Sathyamangalam, Erode during 17.06.2020 to 23.06.2020.
22. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Exploring Innovations in Mathematical Sciences" conducted by Bannari Amman Institute of Technology, Sathyamangalam, Erode during 25.06.2020 to 01.07.2020.
23. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Emerging Trends in Pure and Applied Mathematics" conducted by Abdul Hakeem College of Engineering and Technology, Melvisharam during 28.06.2020 to 30.06.2020.
24. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Work-Life Balance through Life Style Changes" conducted by Amet Business School, Chennai on 27-06-2020.
25. Dr. P. Karthickumar, Assistant Professor has attended an online training entitled "Innovation Food Processing Technologies - Value addition, Food Safety and Security" conducted by Rajmata Vijayaraje Scindia Krishi Vishwa Vidyalaya Gwalior, Madhya Pradesh during 29.06.2020 - 01.07.2020.
26. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Embracing the Creative Side of Teaching and Learning Methods" conducted by RMK College of Engineering and Technology, Gummidi poondi during 29.06.2020 to 03.07.2020.
27. Er. R. Radha Maheswari, Teaching Assistant has attended an online training entitled "Entrepreneurship Development in Fish Processing Sector" conducted by Central Agricultural University – College of Fisheries, Imphal during 01.07.2020 - 03.07.2020.
28. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Astute-Efflux Trends in Mathematics" conducted by SNS College of Engineering, Coimbatore during 02.07.2020 to 07.07.2020.
29. Dr. D. Kesavan and Er. S. Monikandon, Assistant Professors have attended an online training entitled "Plagiarism in Research and Steps to Prevent it" conducted by Queens College of Arts and Science for Women, Thanjavur on 08.07.2020.
30. Dr.M. Rosalind George, Professor and Head, Dr. B. Chrisolite, Dr. Ranjeeta Kumari, Dr. G. Arul Oli and Mr. M. Muruganantham, Assistant Professors have attended an online training entitled "Aquaculture Sector: Challenges and Future" conducted by Department of Aquaculture, FC&RI, Thoothukudi on 10.07.2020.
31. Dr. S. Selvaraj, Assistant Professor has attended an online training entitled "Organic Farming Business Opportunities" conducted by Ministry of Micro, Small and Medium Enterprises, Govt. of India during 11.07.2020 to 13.07.2020.
32. Mr. D. Lakshmikanth, Teaching Assistant has attended an online training entitled "Fuzzy Mathematics and its Applications" conducted by Government College Daman in Association with IQAC, Dadra and Nagar Harveli and Daman and Diu during 11.07.2020 to 13.07.2020.
33. Dr. M. Rosalind George, Professor and Head and Dr. B. Chrisolite, Assistant Professor have attended an online training entitled "Plagiarism Detection Software" conducted by ShodhShuddhi Project in Kerala & Tamil Nadu on 17.07.2020.

34. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Library and Information Science" conducted by Manonmaniam Sundaranar University, Tirunelveli and Madras Library Association, Chennai during 17.07.2020 to 24.07.2020.
35. Er. T. Siva, Teaching Assistant has attended an online training entitled "Mitigation of Power Quality Issues in Distributed Generation Systems using Custom Power Devices-I" conducted by R.M.D Engineering College, Chennai during 20.07.2020 to 25.07.2020.
36. Dr. M. Rosalind George, Professor and Head and Dr. B. Chrisolite, Assistant Professor have attended an online training entitled "Coping with Isolation during COVID Times" conducted by Motivational and L&D trainer, Chennai on 21.07.2020.
37. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Research Methodology: Emerging Perspectives, Challenges and opportunities" conducted by Department of Collegiate Education, Government First Grade College, Badami, Karnataka during 25.07.2020 to 31.07.2020.
38. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Electronic Resources for Teaching, Learning and Research" conducted by Shri S.R. Kanthi Arts, Commerce and Science College, Karnataka during 30.07.2020 to 01.08.2020.
39. Dr R. Brimapureeswaran, Dr. P. Karthickumar and Dr. K. Hema, Assistant Professors have attended an online training entitled "Recent Trends and Developments in Food Technology" conducted by Saintgits College of Engineering, Kottayam, Kerala during 10.08.2020 to 14.08.2020.
40. Dr. M. Rosalind George, Professor and Head, Dr. B. Chrisolite and Mr. M. Muruganantham, Assistant Professors have attended an online training entitled "Self confidence / Self esteem" – a talk by Mr. Chidambaram conducted by FC&RI, Thoothukudi on 20.08.2020.
41. Dr R. Brimapureeswaran, Assistant Professor has attended an online training entitled "Recent Trends on Current Science and Technology" conducted by Easwari Engineering College, Ramapuram, Chennai during 24.08.2020 to 28.08.2020.
42. Dr.M.Rosalind George, Professor and Head and Dr. B. Chrisolite, Assistant Professor have attended an online training entitled "Aquatic animal health management for sustainable aquaculture on the occasion of the release of standard operating procedures for aquatic animal health" conducted by Kerala University of Fisheries and Ocean studies and Department of Fisheries, Government of Kerala on 25.08.2020.
43. Dr. M. Rosalind George, Professor and Head and Dr. B. Chrisolite, Assistant Professor have attended an online training entitled "Ocean in the wake of climate change: Challenges and solutions" conducted by Department of Fisheries and Environment Management, FC&RI, Thoothukudi during 26.08.2020 to 28.08.2020.
44. Dr. S. Saravanan, Assistant Professor has attended an online training entitled "Whole Genome Sequencing in Bacteria" conducted by Foundation for Research in Science and Technology during 29.08.2020 to 30.08.2020.
45. Dr. S. Selvaraj, Assistant Professor has attended an online training entitled "Integration of Artemia in Salt Pans" conducted by Dr.M.G.R. Fisheries College and Research Institute, TNJFU, Thalainayeru on 02.09.2020.
46. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Knowledge Access and Sharing: Tools and Technologies for Higher Academic Research" conducted by Department of Library and Information Science Bharathidasan University and Holy Cross College, Trichy, India, jointly with Library, University of Jaffna during 05.09.2020 to 11.09.2020.
47. Dr. J. Jayabharathi, Assistant Professor (C) has attended an online training entitled "Advances in Biological Waste water Treatment Methods: Teaching and Learning strategy" conducted by National Institute of Technology, Warangal during 07.09.2020 to 11.09.2020.
48. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Information Literacy for Academics and Research" conducted by Madras School of Social Work (MSSW) Library and Society for the Advancement of Library & Information Science (SALIS) during 07.09.2020 to 08.09.2020.

49. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Digital Divides: Re-Bridging the Divides" conducted by Central Library of Derozio Memorial College, Kolkata and Uluberia College, Howrah on 13.09.2020.
50. Dr. M. Ramar, Assistant Professor has attended an online training entitled "Blockchain Technologies and Applications" conducted by Department of Information Technology, National Institute of Technology, Raipur - 492010, Chhattisgarh, India during 14.09.2020 to 18.09.2020.
51. Dr. B. Chrisolite, Assistant Professor has attended an online training entitled "Advanced Bioinformatics tools and its Applications in Agriculture" conducted by ICAR-NAARM, Hyderabad during 14.09.2020 to 19.09.2020.
52. Dr. S. Saravanan, Assistant Professor has attended an online training entitled "R – Programming" conducted by Dr. M. G. R Educational and Research Institute, Adayalampattu Phase II Campus, Chennai during 14.09.2020 to 25.09.2020.
53. Dr. S. Selvaraj, Assistant Professor has attended an online training entitled "Freshwater Ornamental Fish Culture" (Dt: 16.09.2020) and "Liquid Fertilizer Preparation from Seaweeds" (Dt: 07.10.2020) conducted by Dr.M.G.R. Fisheries College and Research Institute, TNJFU, Thalainayeru.
54. Dr. S. Saravanan and Dr. K. Hema, Assistant Professors have attended an online training entitled "Packaging of Fish and Marine Products" conducted by Indian Institute of Packaging, Ministry of Micro, Small and Medium Enterprises, Hyderabad during 29.09.2020 to 08.10.2020.
55. Dr. M. Ramar, Assistant Professor has attended an online training entitled "Blockchain Application Development Using Hyperledger and Ethereum" conducted by Department of Computer Science & Engg, National Institute of Technology, Meghalaya, Bijini Complex, Shillong-793003, India during 05.10.2020 to 09.10.2020.
56. Dr. A. Mathivanan, Subject Matter Specialist (FPT) has attended an online training entitled "New Age farming Transformation for women farmers" conducted by ICAR-ATARI, Pune on 15.10.2020.
57. Mr. M. Mohamed Faizullah, Assistant Professor (C) has attended an online training entitled Seawood Farming conducted by Dr MGR FC&RI, Thalainayeru on 27.10.2020.
58. UG Students (60 Nos.), Dr MGR FC&RI, Thalainayeru have attended an online training entitled "Financial Awareness and Consumer Training" conducted by National Centre for Financial Education, Chennai on 28.10.2020.
59. Dr. S. Saravanan, Assistant Professor has attended an online training entitled "Seed Production and Hatchery Management of Air-Breathing Fishes" conducted by ICAR - Central Institute of Freshwater Aquaculture, Kausalyaganga, Bhubaneswar, India during 26.11.2020 to 28.11.2020.
60. Dr. S. Saravanan, Assistant Professor has attended an online training entitled "Synthetic Biology" conducted by Department of Botany, Bharathiyar University, Coimbatore during 14.12.2020 to 18.12.2020.
61. Dr. K. Hema, Assistant Professor has attended an online training entitled "Food Safety and Quality Management System" conducted by Haldia Institute of Technology, Kolkata during 18.12.2020 to 17.01.2021.
62. Mr. M. Muruganantham, Assistant Professor has attended an online training entitled "Master trainers – Fish and Marine Products" by CIFT, Kochi during 04.01.2021 to 08.01.2021.
63. Dr. S. Selvaraj, Assistant Professor has attended an online training entitled "Sea Cage Culture" conducted by ICAR-CMFRI, Thoothukudi on 29.01.2021 & 30.01.2021.
64. Dr. S. David Kingston, Professor and Head, Mr. M. Muruganantham, Mr. R. Durairaja, Dr. P. Ganesan, Dr. R. Shalini and Dr. B. Sivaraman, Assistant Professors have attended training entitled "Data analysis in fisheries using MS Excel and SPSS under ICAR DG 2020 – 21" conducted by FCRI, Thoothukudi during 09.02.2021 to 11.02.2021.
65. Dr. R. Palani, Assistant Professor (C) has attended an online training entitled "MATLAB and Advanced Optimization Techniques" conducted by Government College of Engineering, Bargur, Krishnagiri during 15.02.2021 to 20.02.2021.

66. Dr. S. Saravanan, P. Yuvarajan and Mr. V. Durai, Assistant Professors and Dr. R. Palani, Assistant Professor (C) have attended an online training entitled "Scientific Writing" conducted by College of Fisheries Engineering, Nagapattinam, TNJFU during 24.03.2021 to 26.03.2021.
67. Mr. K.S. Vijay Amirtharaj, S. Manickavasagam, Dr. G. Arul Oli, Dr. T. Umamaheswari, S. Mariappan, Mr. R. Durairaja, Mr. C. Sudhan, Dr. S. Saravanan, Dr. D. Kaviarasu,Dr. V. Ezhilarasi, Dr. Mahadevi, Mr. K. Masilan, Mr. D. Arun Jenish, Mr. P. Pavinkumar, Mr. K. Karuppasamy, Dr. S. Santhoshkumar, Th.V.Vijayarahavan, Dr. P. Elakkanai, Mr.V.Durai, Mr. P. Yuvarajan, Ms. M. MuthuAbishag, Ms. T. Deepika, Mrs. S. J.Abisha Juliet Mary, Mr. S. Kesavan, Dr. M. Ramar, N. Daniel, Mr. P. Velmurugan, Ms. S. Sangavi, Dr. P. Sivasankar, Mr. R. Dinesh and Dr. E. Prabu, Assistant Professors have attended an training entitled "Effective Teaching Skills" conducted by ICAR – Nodal Cell of Tamil Nadu Dr. J Jayalalithaa Fisheries University, Nagapattinam during 26.03.2021 to 27.03.2021.
68. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Research Ethics" conducted by Central Library, Vivekananda College, Madurai during 29.03.2021 to 30.03.2021.
69. Mr. R. Velmurugan, Assistant Professor has attended an "online awareness programme (PDS-ShodhShuddhi)" in the State of Kerala and Tamil Nadu conducted by INFLIBNET Centre (An IUC of UGC) Infocity, Gandhinagar, Gujarat on 17.07.2021.

7.2. SUMMER / WINTER SCHOOLS / SHORT COURSES ATTENDED

1. Dr. A. Uma, Professor and Head has attended online training entitled Infection prevention Control (IPC) for Novel Coronavirus (COVID-19) conducted by World Health Organization on 27.04.2020.
2. Dr. S. Balasundari, Dean, Dr. S. Athithan and Dr. P. Padmavathy, Professor and Heads, Dr. B. Chrisolite, Dr. Ranjeeta Kumari, Dr. C. Judith Betsy, Dr. P. Ganesan, T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Mrs. S. Agnes Daney Angela, C. Lloyd Chrispin, Dr.J. Jaculine Pereira, Mrs. T. Umamaheswari, Mr. S. Santhoshkumar, Dr. P. Elakkanai, Mrs. S. Vimaladevi, Er. C. Mercy Amrita, Mr.T. Anand, Er. D. Babiyola, Dr. D. Kesavan, Dr. M. Ramar, Er. S. Monikandon, A. Jemila Thangarani, S. Aanand, Dr. V. Senthilkumar, Dr. P. Sivasankar, Assistant Professors, Mr. M. Mohamed Faizullah, Dr. M. Petchimuthu and Dr. R. Palani, Assistant Professor (C) and Mr. E. Hino Fernando, SMS, have attended online MOOC course on "Psychology of learning" conducted by ICAR-NAARM, Hyderabad during 1.05.2020 to 15.05.2020.
3. Dr. B. Chrisolite, Assistant Professor has attended online MOOC on "COVID the pandemic" conducted by RK University, Rajkot during 11.05.2020 to 15.05.2020
4. T.L.S. Samuel Moses, Dr. S. Saravanan, Dr. C. Lloyd Chrispin and Dr. Nimish Mol Stephen, Assistant Professors have attended online Short course on "SciCom" conducted by ICAR-CIFE, Mumbai during 05.05.2020 to 18.05.2020.
5. Mrs. S. Aruna, Mrs. S. Agnes Daney Angela, Assistant Professors have attended online Short course on "SciCom" conducted by ICAR-CIFE, Mumbai during 12.05.2020 to 25.05.2020.
6. Mrs. A. Jemila Thangarani and Mr. M. Kalaiarasan, Assistant Professors have attended online Short course on "SciCom" conducted by ICAR-CIFE, Mumbai during 26.05.2020 to 08.06.2020.
7. Dr. N. Neethiselvan, Director has attended online training entitled "Sciata Analytics of Fisheries Com 2020" conducted by CIFE, Mumbai during 26.05.2020 to 10.06.2020.
8. Mrs. S. Aruna and Mrs. D. Manimekalai, Assistant Professors have attended online training on "Remote sensing and GIS Technology and applications for University Teachers and Government officials" conducted by IIRS. ISRO, Dehradun during 13.06.2020 to 01.07.2020.
9. Dr. N. Neethiselvan, Director, Dr. Ambika Binesh and Mr. T. Ravikumar, Assistant Professor have attended online faculty development programme on "Methodology and Data Interpretation of Analytical Instrumentation Techniques" conducted by Sathyabama Insitute of Science and Technology, Chennai in association with Ministry of Earth Science during 15.06.2020 to 19.06.2020. Dr. S. Balasundari, Dean, Dr. P. Padmavathy, Professor and Head, Mrs. D.Manimekalai, Dr. C. Judith Betsy, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Mr. R. Velmurugan, Mr. P. Pavinkumar

10. Mrs. S. Aruna, Mrs. S. Agnes Daney Angela, Mr. C. Lloyd Chrispin, Mr. V. Vijayaraghavan, Mrs. S. Vimaladevi, Mr. S. Santhoshkumar, Dr. A. Subburaj, Dr. T. Umamaheswari, Mr. T. Anand, Dr. Kamalakannan, Dr. M. Ramar, Dr. S. Aanand, Dr. V. Senthilkumar, Mr. P. Velmurugan, Mrs. M.Kalaiarasan, Assistant Professors and Dr. R. Palani, Assistant Professor(C) have attended online MOOC course on "Designing E-learning Content" conducted by ICAR-NAARM, Hyderabad during 01.07.2020 to 31.07.2020.
11. Dr. Ambika Binesh, Assistant Professor has attended online faculty development programme on "COVID -19 new age teaching pedagogy: innovative tools, techniques and research methods for efficient business management teaching in digital era" conducted by Jawaharlal Nehru University (JNU) during 20.07.2020 to 31.07.2020.
12. Dr. S. Selvaraj, Assistant Professor has attended online Faculty Development Programme on "Recent Advances in Next Generation Sequencing" conducted by Satyabhama Institute of Science and Technology, Chennai during 27.07.2020 to 02.08.2020.
13. Mr. D. Lakshmikanth, Teaching Assistant has attended online training entitled "UGC/CSIR NET/SET Coaching Classes" conducted by Islamiah College (Autonomous), Vaniyambadi during 27.07.2020 to 29.07.2020.
14. Dr. S. Saravanan, Assistant Professor has attended entrepreneurship skill development online course on "Ornamental Fishes – Production, Trade and Technology Transfer" conducted by Kongunadu College of Arts and Science, Coimbatore during 03.08.2020 to 09.08.2020.
15. Dr. S. Selvaraj, Assistant Professor has attended online Faculty Development Programme on "Small Molecules – Strategies and Sophistication" conducted by Satyabhama Institute of Science and Technology, Chennai during 03.08.2020 to 09.08.2020.
16. Dr.P.Padmavathy, Professor and Head, Mrs. D. Manimekalai, Mrs. G.Arul Oli, Mrs A. Anix Vivek Santhiya, Mr. K.S.VijayAmirtharaj, Mr. T.Ravikumar and Mr. M.Kalaiarasan, Assistant Professors, have attended online training entitled "Data Analytics in Fisheries" conducted by Dr.M.G.R. FC&RI, Thalainayeru during 10.08.2020 to 03.09.2020.
17. Mrs. D. Manimekalai, Assistant Professor has attended online training entitled "Remote sensing and Digital Image Analysis" conducted by IIRS, Dehradun during 17.08.2020 to 11.09.2020.
18. Dr. S. Saravanan, Assistant Professor has attended online faculty development program on "Data analysis using SPSS, AMOS and R Software" conducted by Centre for management studies, Jain Deemed to be University, Bangalore during 24.08.2020 to 25.08.2020.
19. Mr. P. Karthickumar, Assistant Professors, have attended online MOOC on "Information Handling Skills of Teaching, Learning and Research" conducted by Professor Jayashankar Telangana State Agricultural University, Hyderabad during 26.08.2020 to 16.09.2020.
20. Dr. S. Saravanan, Assistant Professor has attended online short-term course on "Data Analytics Tools and Techniques" conducted by Dr. B. R. Ambedkar, National Institute of Technology, Jalandhar during 22.09.2020 to 26.09.2020.
21. Dr. S. Selvaraj, Assistant Professor has attended online Short Course Training on "Communication and Personality Development" conducted by Sher-e- Kashmir University of Agricultural Science and Technology, Kashmir during 29.09.2020 to 05.10.2020.
22. Mrs. D. Manimekalai, Assistant Professor has attended online Refresher Course on "Life Sciences" conducted by Osmania University, Hyderabad during 05.10.2020 to 19.10.2020.
23. M.Kalaiarasan and Dr. S. Saravanan, Assistant Professors, have attended online training entitled "Food Processing Technologies – Industry & Research Perspectives" conducted by CFD&FN, Madhavaram during 09.10.2020 to 15.10.2020.
24. Dr. Kamalakannan, Assistant Professor has attended online training on "Evolution of Polytronics in future Technology" conducted by M.A.M college of Engineering, Anna University, Chennai during 07.12.2020 to 12.12.2020.
25. Dr. R. Ezhil Rani, Assistant Librarian has attended an "Online Refresher Courses on Library Science and Information Technology" conducted by Pondicherry University UGC – Human Resource Development Centre (HRDC) Pondicherry during 06.01.2021 to 19.01.2021.

26. Mrs. M. Muthu Abishag, Mrs. T. Deepika, Mrs. S.J. Abisha Juliet Mary and Mr. S. Kesavan, Assistant Professors and Dr. R. Ezhil Rani, Assistant Librarian have attended online MOOC on "Information Handling Skills of Teaching, Learning and Research" conducted by Professor Jayashankar Telangana State Agricultural University, Hyderabad during 01.03.2021 to 21.03.2021.

7.3. WORKSHOPS ATTENDED

1. Dr. A. Gopalakannan, Programme Coordinator and Mr. E. Hino Fernando, SMS have attended online workshop entitled "Perspectives of face contemporary challenges in Agriculture Development" conducted by ICAR during 18.02.2020 to 19.02.2020.
2. Dr. M. Ramar, Assistant Professor has attended online workshop entitled "Intellectual Property Rights" conducted by Pandit Deendayal Petroleum University, Gujarat on 11.04.2020.
3. Dr. R. Palani, Assistant Professor (C) has attended online workshop entitled "Basic Statistics analysis for Research" conducted by REST Society for Research International during 18.05.2020 to 22.05.2020.
4. Dr. N. Manimehalai, Dean has attended online workshop entitled "Nutritional Sustenance through Dairy Products: Initiatives and Strategies" conducted by College of Food and Dairy Technology, TANUVAS, Chennai on 01.06.2020.
5. Dr. A. Uma, Professor and Head and Mr. K. S. Vijay Amirtharaj, Assistant Professor have attended online workshop entitled "Brackish water Aquaculture scenarios in India with focus on shrimp farming during Covid-19 challenges and way forward" conducted by ICAR-CIBA, Chennai on 04.06.2020.
6. Dr. S. Saravanan, Assistant has attended online workshop entitled "Biotechnology and Molecular Biology Applications (IWBMA 2020)" conducted by Department of Biotechnology, Periyar University, Salem during 04.06.2020 to 07.06.2020.
7. Dr. N. Neethiselvan, Director and Mr. M. Kalaiarasan, Assistant Professor have attended online workshop entitled "Ship stability" conducted by AMET University, Chennai on 09.06.2020.
8. Mr. M. Mohamed Faizullah, Assistant Professor (C) has attended online workshop entitled "Research article writing & references management using Mendeley" conducted by Annamalai University in collaboration with ELSEVIER on 22.06.2020.
9. Mr. D. Lakshmikanth, Teaching Assistant has attended online workshop entitled "Quantitative Data Analysis using Microsoft Excel conducted by College of Arts & Science", Chennai on 28.06.2020 to 30.06.2020.
10. Dr. N. Neethiselvan, Director has attended online workshop entitled "DBT's response to COVID-19" conducted by DBT on 03.07.2020.
11. Mr. D. Lakshmikanth, Teaching Assistant has attended online workshop entitled "Statistical Modelling for High Dimensional Data" conducted by Department of Statistics, Presidency College (Autonomous), Chennai on 06.07.2020 to 07.07.2020.
12. Dr. P. Karthickumar, Assistant Professor has attended online workshop entitled "Food Laws and the Requirements of Food Testing in India" conducted by AKS University, Satna on 08.07.2020.
13. Dr. S. Saravanan, Dr. Amit Ranjan, Dr. E. Suresh, Dr. V. Kaliyamurthi and Dr. Ambika Binesh, Assistant Professors have attended online workshop entitled "Current Trends in Fish Biotechnological Research" conducted by TNJFU-IFPGS, OMR, Chennai during 09.07.2020 to 11.07.2020.
14. Dr. S. Saravanan, Assistant Professor has attended online workshop entitled "Marine Ornamental Culture" conducted by Sathyabama Institute of Science and Technology during 10.07.2020 to 13.07.2020.
15. Dr. A. Uma, Professor and Head has attended online workshop entitled "New Age digital technologies of sustainable aquaculture" conducted by ICAR-CIBA, Chennai on 18.07.2020.
16. Dr.M.Rosalind George, Dr. D. Manikandavelu and Dr.A.Uma, Professors, Dr. P. Chidambaram, Associate Professor, Dr. B. Chrisolite, Dr. Ranjeeta Kumari, Dr. G. Arul Oli, Mr. K.S.VijayAmirtharaj, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, S. Aruna, Mrs. Agnes Daney Angela,

Dr. Lloyd Chrispin C, Dr. Surulivel and Dr. Amit Ranjan Assistant Professors have attended online workshop entitled Advances in Aquatic Animal Health Management conducted by Dr. M.G.R.FC&RI, Ponneri on 27.07.2020.

17. Dr. S. Balasundari, Dean, Dr. N. Manimehalai, Dean, Dr.P. Padmavathy, Professor and Head, Dr. P. Elakkanai and Dr. P. Karthickumar, Assistant Professors and Mr. S. Mariappan, Assistant Professor (C) have attended online workshop entitled "Scholarly Publishing and Research Metrics" conducted by College of Food and Dairy Technology, Chennai on 30.07.2020.
18. Mr. T. Ravikumar, Mr. V. Vijayarahavan, Dr. P. Karthickumar and Dr. L. Vinoth Kumar, Assistant Professors have attended online workshop entitled "New Normal in Fisheries Sector Amidst and Post Covid – 19" conducted by TNJFU Business School, OMR campus, Chennai during 31.07.2020 to 02.08.2020.
19. Dr. A. Uma, Professor and Head has attended online workshop entitled "Conclave on Transformation reforms in higher education under Nation education policy" conducted by Higher education under Nation education policy on 07.08.2020.
20. Dr. S. Saravanan, Assistant Professor has attended online workshop entitled "Artificial intelligence tools for accelerated drug discovery against COVID'19" conducted by Vignan's Foundation for Science Technology and Research, Vadlamudi during 10.08.2020 to 14.08.2020.
21. Dr. N. Manimehalai, Dean and Dr. P. Karthickumar, Assistant Professor have attended online workshop entitled "Entrepreneurial Opportunities in Food Processing Sector conducted by School of Agricultural Sciences & Technology (SAST)" and NMIMS University Students' Council (NUSC) on 13.08.2020.
22. Dr.A. Uma, Professor and Head has attended online workshop entitled "Leveraging Institutional synergy for Technology and freshwater aquaculture development" conducted by ICAR-CIBA & NFDB on 19.08.2020.
23. Dr. N. Neethiselvan, Director has attended onlineworkshop entitled "Response of the DBT autonomous institutes to COVID-19 (Part-I)" conducted by DBT on 21.08.2020.
24. Dr. A. Uma, Professor and Head has attended online workshop entitled "Aquatic animal health for sustainable aquaculture" conducted by Kerala University on 24.08.2020.
25. Mr. A. Anix Vivek Santhiya, Dr. G. Arul Oli, Mr. R. Durairaja and Mr. S. Selvaraj, Assistant Professors have attended online workshop entitled "Recent Trends in Technological Advancements in Aquaculture and Fisheries" conducted by Guru Nanak College, Chennai during 03.09.2020 to 10.09.2020.
26. Dr. P. Karthickumar, Assistant Professor has attended online workshop entitled "Dietary Management of Coeliac Disease" conducted by Bhaskaracharya College of Applied Sciences, University of Delhi on 05.09.2020.
27. Dr.A. Uma, Professor and Head has attended online workshop entitled "Orientation to funding opportunities for investors in Aquaculture" under PMMSY & FIDF conducted by Society for Aquaculture professionals on 09.09.2020.
28. Dr. J. Jaculine Pereira, Assistant Professor and Dr. M. Petchimuthu, Assistant Professor (C) have attended online workshop entitled "Fish Health and Disease management in tropics" conducted by Nanaji Deshmukh Veterinary Science University, Jabalpur on 09.09.2020 to 14.09.2020.
29. Dr.A. Uma, Professor and Head has attended online Interaction meeting on "The role of college of Fisheries in promoting PMMSY" conducted by NFDB on 16.09.2020.
30. Dr. S. Saravanan, Assistant Professor has attended online workshop entitled "Academic writing and Research Productivity" conducted by MethodSimplify.com. during 18.09.2020 to 20.09.2020.
31. Dr. P. Karthickumar, Assistant Professor has attended online workshop entitled "Climate Change and Farmers' Distress" conducted by School of Agricultural Sciences & Technology (SAST) and NMIMS University Students' Council (NUSC) on 19.09.2020.
32. Dr. N. Neethiselvan, Director has attended onlineworkshop entitled "Showcasing Demonstrated wastes to value technologies" conducted by DBT on 01.10.2020.
33. Dr. N. Neethiselvan, Director has attended online eworkshop entitled "Response of the DBT autonomous institutes to COVID-19 (Part-III)" conducted by DBT on 16.10.2020.

34. Dr. Usha Antony, Dean, Dr. P. Padmavathy, Professor and Head, Dr. G. Arul Oli, Dr. B. Chrisolite, Dr. T. Umamaheshwari, Dr. V. Alamelu, Mrs. S. Vimaladevi, Dr. P. Elakkanai, Dr. M. Menaga, Er. D. Babiyola, Dr. K. Hema, Assistant Professors, Mrs. V. Lakshme Gayathre, Er. A. Devi Dharshini, Er. R. Radha Maheswari, Assistant Professors (C) have attended online workshop entitled "Role of TNJFU Women Professionals in Fisheries and Aquaculture Development of Tamil Nadu" conducted by Dr. MGR FCRI, Thalainayeru on 18.11.2020, 23.11.2020, 01.12.2020 to 05.12.2020.
35. Dr. S. Saravanan, Assistant Professor has attended online workshop entitled "Quantitative Genetics and Genomics in Plant Breeding" conducted by Vignan's Foundation for Science Technology and Research, Vadlamudi during 23.11.2020 to 27.11.2020.
36. Dr. N. Neethiselvan, Director has attended online workshop entitled "National Educational Policy and fundamental rights" conducted by ICAR on 26.11.2020.
37. Dr. S. Saravanan, Assistant Professor has attended online workshop entitled "Functional foods, bioactive compounds and phytochemicals for better nutrition" conducted by Society for plant biochemistry and biotechnology, IARI, New Delhi during 09.12.2020 to 11.12.2020.
38. Dr. S. Athithan and Dr. S. David Kingston, Professor and Heads, Mr. A. Anix Vivek Santhiya, Mr. R. Durairaja, Dr. K. Hema, Dr.P. Sivasankar and Dr. S. Saravanan, Assistant Professors have attended online workshop entitled "Self Sufficient Aquaculture – Prism of Possibilities in the Present and Future" conducted by Dr. M.G.R.FC&RI, Thalainayeru on 11.01.2021.
39. Dr. P. Karthickumar, Assistant Professor and Dr. R. Palani, Assistant Professor (C) have attended online workshop entitled "Use of statistical methods for scientists and engineers in current times" conducted by VVP Engineering College, Rajkot during 21.01.2021 to 23.01.2021.
40. Dr. S. Saravanan, Assistant Professor has attended online workshop entitled "Statistics using MS Excel research" conducted by Dr. M.G.R FC&RI, Ponneri during 29.01.2021 to 30.01.2021.
41. Dr. S. Selvaraj and Dr. M. Menaga, Assistant Professors have attended online workshop entitled "Recent Trends in Technological Advancements in Aquaculture and Fisheries" conducted by Sathyabhama Institute of Science and Technology, Chennai during 08.02.2021 - 13.02.2021.
42. N. Daniel, Assistant Professor has attended online workshop entitled "Ichthyotaxomony" conducted by KUFOS, Kochi during 23.03.2021 to 27.03.2021.
43. Er. S. Monikandon, Assistant Professor has attended online workshop entitled "Case Histories in Geotechnical and Geological Engineering - Theory practice" conducted by NIT Surathkal Indian Geotechnical Surathkal Chapter during 25.03.2021 to 26.03.2021.
44. Dr. D. Kesavan and Er. S. Monikandon, Assistant Professor have attended online workshop entitled "Air Pollution and Health Hazards" conducted by Dr. B. R. Ambedkar National Institute of Technology, Jalandhar and Punjab Pollution Control Board on 31.03.2021.

7.4. SEMINARS / CONFERENCES / SYMPOSIA ATTENDED

1. Er. D. Babiyola and Er. C. Mercy Amrita, Assistant Professors have attended Chola Aqua 2020 "Scaling Solutions for Fair Trade in Aquaculture" conducted by TNJFU, Headquarters, Nagapattinam on 29.02.2020.
2. Dr. K. Hema, Assistant Professor has attended online webinar on "Research and Innovation in Aquatic Foods and Fishing Vessel Technology" conducted by AMET University, Chennai on 06.03.2020.
3. Dr. E. Suresh, Assistant Professor has attended online webinar on "An Effective Research Paper Writing Skills" conducted by Bhagwan Mahavir University, Gujarat during 13.04.2020 to 16.04.2020.
4. Mr. T. Ravikumar, Assistant Professor & Head has attended online webinar on "Fishing Vessel Stability" conducted by AMET, University Chennai on 02.05.2020.
5. Mr. T. Ravikumar, Assistant Professor & Head has attended online webinar on "Principle and Application of Electronic Spectroscopy" conducted by Annai College of Arts and Science, Tiruchirapalli on 07.05.2020.
6. Dr. M. Ramar, Assistant Professor, and Dr. R. Palani, Assistant Professor (C) has attended online webinar on "Writing a Winning Project Proposal" conducted by Internal Quality Assurance Cell, MAR Athanasius College, Kothamangalam, Kerala on 11.05.2020.

7. Dr. P. Padmavathy, Professor & Head has attended online webinar on "Impact on COVID 19 on Fisheries in Tamilnadu and Kerala" conducted by IEEE, ADSF, SIGHT (Special Interest Group on Humanitarian Technology) on 12.05.2020.
8. Dr. M. Ramar, Assistant Professor has attended online webinar on "Research Workflows, Research Metrics & Excellence in Academic Institutes" conducted by AICTE, New Delhi on 14.05.2020.
9. Dr. V. Kaliyamurthi and Dr. Ambika Binesh, Assistant Professors have attended online webinar on "In Harmony with nature" conducted by Mahendra college of Engineeringon 15.05.2020.
10. Dr. S. Prakash, Assistant Professor has attended online webinar on "How to Write a Research paper" conducted by Sengunthar Engineering College, Erode on 15.05.2020.
11. Mr. P. Pavinkumar, Assistant Professor has attended online webinar entitled "Recent Advances in Marine Biodiversity and Conservation" conducted by Alagappa University, Karaikudi during 18.05.2020 to 20.05.2020.
12. Dr. M. Menaga, Assistant Professor has attended online webinar on "Aid Your Agricultural Research Through EBSCO Agricultural Plus Database" conducted by ICAR-NAARM, Hyderabad on 18.05.2020.
13. Dr. A. Uma, Professor and Head, T.L.S. Samuel Moses and Dr. Mir Ishfaq Nazir, Assistant Professors have attended online webinar entitled "Challenges and Opportunities in post covid Era" for Human and Shrimp Industry conducted by ICAR-CIFE, Mumbai on 20.05.2020.
14. F. Parthiban, Assistant Professorhas attended online webinar on "Emerging Web based pedagogical Practices, Skill development program on Sci Com for smart scientist" conducted by Annamal College of Education for Women, Thoothukudi during 20.05.2020 to 21.05.2020.
15. Dr. V. Kaliyamurthi and Dr. Ambika Binesh, Assistant Professors have attended online webinar on "Next generation genomics for crop improvement to address hunger and malnutrition during Covid 19" conducted by VELS University, Chennai on 21.05.2020.
16. Dr. P. Sivasankar, Assistant Professor has attended online webinar on "Development of Knowledge in Fisheries Sciences – Fish for all Forever conducted" by Alagappa University, Karaikudi during 22.05.2020 to 26.05.2020.
17. Dr. P. Sivasankar & T.L.S. Samuel Moses, Assistant Professors have attended online webinar on "Recent Trends in Fisheries and Aquaculture" conducted by College of Fisheries Alumni Association Chhattisgarh on 23.05.2020.
18. Dr. V. Kaliyamurthi and Dr. Ambika Binesh, Assistant Professors have attended online webinar on "A new therapeutic target to attenuate adverse cardiac remodelling" conducted by ISHR Cardiovascular during 25.05.2020 to 29.05.2020.
19. Dr. P. Sivasankar, Assistant Professor has attended online webinar on "Identification and Importance of Some Ornamental Fishes" conducted by College of Fisheries Science, Jabalpur on 26.05.2020.
20. Dr. M. Ramar, Assistant Professor has attended online webinar on "Expand the Impact of Your Research Article" conducted by Wiley Asia-Pacific on 27.05.2020.
21. F. Parthiban, Assistant Professor has attended online webinar on "Standard Practices in Harvesting and Marketing of Meat, Poultry and Fish" conducted by Kerala Veterinary and Animal Sciences University and ICAR-CIFT on 27.05.2020.
22. Dr. M. Rosalind George, Professor and Head, Dr. P. Sivasankar, T.L.S. Samuel Moses and S. Aruna, Assistant Professor have attended online webinar on "Challenges, Opportunities and the Future of Indian Fisheries post COVID19 Era" conducted by Junagadh Agricultural University during 28.05.2020 to 30.05.2020.
23. Dr. M. Menaga, Assistant Professor has attended online webinar on "Climate Change-A threat to peace" conducted by Manav Rachna University, Faridabad on 29.05.2020
24. Mrs. T. Uma maheswari, Assistant Professor has attended online webinar on "Quantitative Methods for Social Sciences" conducted by NIAP, New Delhi during 01.06.2020 to 20.06.2020.

25. Er. T. Siva, Teaching Assistant has attended online webinar on "Overview of AI and Automotive Vehicles" (dt: 01.06.2020), "What is Electrical Engineering" (dt: 02.06.2020), "Solar and Renewable Energy" (dt: 03.06.2020), "Role of STEM (Science, Technology, Engineering, Mathematics)" (dt: 06.06.2020), "My journey on How I made it through Electrical Engineering" (dt: 07.06.2020), "Visual Perception for Robots – From gaze estimation to place recognition" (dt: 08.06.2020), "From Automatic to Autonomous-Defining industrial Vehicle Capabilities" (dt: 09.06.2020), "Electric Vehicle Charging conducted" (dt: 10.06.2020), "From Grid to Fog Cloud in the IOT" (dt: 11.06.2020), "Protection and Control Fundamentals" (dt: 12.06.2020), and "Deep Learning Based Video Analytics for Surveillance Applications" (dt: 15.06.2020) conducted by St. Joseph's College of Engineering, Chennai.
26. Dr. S. Selvaraj, Assistant Professor has attended online webinar on "Entrepreneurship Development through Quality Seed Production of Carp: Challenges and Future Prospects conducted by College of Fisheries", Tripura during 02.06.2020 to 06.06.2020.
27. Dr. Mir Ishfaq Nazir, Assistant Professor has attended online webinar on "Context-Based Pedagogy and Assessment in Higher Education" conducted by Central University of Haryana on 03.06.2020.
28. M. Muruganantham, Assistant Professor has attended online webinar on "Opportunities in fisheries sector post lockdown" conducted by MM Active Sc-Tech Communications on 04.06.2020.
29. Dr. S. Balasundari, Dean, Mr. M. Muruganantham, Mr. F. Parthiban, Mrs. T. Umamaheswari, Tmt. S. Vimaladevi, Dr. L. Vinoth Kumar, Th. V. Vijayarahavan and Dr. K. Hema, Assistant Professors have attended online webinar on "Business opportunities in fish post – harvest" conducted by ICAR-CIPHET, Punjab on 05.06.2020.
30. Dr. S. Athithan and Dr. P. Padmavathy, Professor and Heads, Mrs. P. Elakkanai, Assistant Professor and Mr. M. Mohamed Faizullah, Assistant Professor (C) have attended online webinar on Biodiversity for Natural Resources conducted by ICAR- CIBA, Chennai on 05.06.2020.
31. Dr. V. Kaliyamurthi and Dr. Ambika Binesh, Assistant Professors have attended online webinar on "Prevention of Covid 19 by enhancing innate immunity" conducted by Vels University, Chennai on 05.06.2020.
32. Dr. P. Elakkanai, Assistant Professor has attended online webinar on "Time to reboot humanity's relationship with nature conservation of biodiversity" conducted by Ambedkar University, Delhi on 05.06.2020.
33. Mrs. S. Aruna, Assistant Professor has attended online programe on "World ocean day 2020" conducted by Loyala college, Chennai on 08.06.2020.
34. Mr. S. Santhoshkumar, Mrs. S. Vimaladevi, Mr. A. Subburaj and Dr. P. Elakkanai, Assistant Professor and Mr. M. Mohamed Faizullah, Assistant Professor (C) have attended online webinar on "Paradise Lost? Coral Reefs the highly productive eco-system in the ocean" conducted by Sathyabama Institute of Science and Technology, Chennai on 08.06.2020.
35. Dr. S. Prakash, Assistant Professor has attended online webinar on "IPR and e- Content Development" conducted by Rajaram College, Kolhapur during 08.06.2020 to 10.06.2020.
36. Mrs. T. Uma maheswari, Assistant Professor has attended online webinar on "Fisheries Supply Chain Dynamics during COVID-19" conducted by Central Agricultural University, Lembucherra, Tripura on 08.06.2020.
37. Dr. A. Uma, Professor and Head, Dr. E. Suresh and Mr. T. Ravikumar, Assistant Professors have attended "online webinar on Biotechnological and Nanotechnological application for marine Bioresource augmentation" conducted by Sathyabama Institute of Science and Technology on 10.06.2020.
38. Dr. S. Prakash, Assistant Professor has attended online webinar on "Taxidermy as an Art *vis-à-vis* Science" conducted by Nanaji Deshmukh veterinary Science University during 10.06.2020 to 11.06.2020.
39. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Introduction to the theory of Automata & its Applications" conducted by Queen Mary's College (Autonomous), Chennai on 11.06.2020.

40. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Graph theory" conducted by Government Arts College (Grade-1), C. Mutur, Chidambaram on 12.06.2020.
41. Er. D. Babiyola, Assistant Professor has attended online webinar on "ICT in Fisheries" conducted by IPGS, TNJFU, OMR, Chennai on 12.06.2020.
42. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Soft Skills Needed to Face the after Pandemic Scenario" conducted by T.J.S Engineering College, Chennai on 12.06.2020.
43. Dr. K. Hema, Assistant Professor has attended online webinar on "Participated Life style and Immunity during COVID 19" conducted by Avinashilingam Institute for Home Science and Higher Education for Women, Coimbatore on 12.06.2020.
44. Dr. A. Uma, Professor and Head has attended online webinar on "Application of RT-PCR for COVID -19 diagnosis" conducted by Abdul Rahman Engineering College on 13.06.2020.
45. Dr. A. Uma, Professor and Head has attended online webinar on "Application of multiomics and single cell technology in precision medicine" conducted by TANUVAS and Sathyabama university on 16.06.2020.
46. Dr. J. Jayabharathi, Assistant Professor (contractual) has attended online training on "Integrated Waste Management- Critical issues for curriculum conducted by JB Institute of Engineering and Technology", Hyderabad on 18.06.2020.
47. Er. T. Siva, Teaching Assistant has attended online webinar on "Covid 19 impact on the Automotive industry – Exciting times ahead!" conducted by KIT – Kalaignar Karunanidhi Institute of Technology, Coimbatore on 18.06.2020.
48. Dr. M. Ramar, Assistant Professor and Dr.Palani, Assistant Professor (C) has attended online webinar on Step-by-step guide to write journal article within 3 months conducted by Chase Research and Development solution during 18.06.2020 to 23.06.2020.
49. Dr. K. Hema and Dr. Ranjeeta Kumari, Assistant Professors have attended online webinar on "Arising Aquaculture Opportunities Amidst COVID 19" conducted by World Aquaculture Society, Asian Pacific Chapter on 19.06.2020.
50. Dr. L. Vinoth Kumar, Assistant Professor has attended online webinar on "COVID-19 Impact on Future of Job's: Food Processing & FMCG Sector" conducted by Food Processing, Skill council, NSDC on 19.06.2020.
51. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Calculus, Origin, Basic Concepts and Applications in Real life" conducted by Chennai Institute of Technology, Chennai on 19.06.2020.

    E "An IOT Forecast Tant's sunny and clear" (dt: 24.06.2020), "The Growing Virtual Grid – Non – wires Alternatives Emerge" (dt: 25.06.2020), r. T. Siva, Teaching Assistant has attended online webinar on "Self – taught neural agents" (dt: 22.06.2020),
52. "Electrical Vehicles – Can Legislation Keep Up with Technology" (dt: 26.06.2020), "Unsupervised Machine Learning and Unsupervised Deep Learning" (dt: 27.06.2020), "Overview of NASA small spacecraft technology program and a look – back at the NASA Kepler Mission" (dt: 28.06.2020), "AI Applied in Drilling and its Application" (dt: 29.06.2020) and "Energy Research and Sustainability" (dt: 30.06.2020) conducted by St. Joseph's College of Engineering, Chennai.
53. Er. R. Radha Maheswari, Teaching Assistant has attended online webinar on "Micronutrient Fortification in Combating Malnutrition" conducted by National Institute of Food Technology Entrepreneurship and Management, Haryana on 23.06.2020.
54. Dr. S. Saravanan, Assistant Professor has attended online conference on "Translational Cancer Research: Novel Ideas and Approaches" conducted by B. S Abdul Rahman Crescent Institute of Science and Technology, School of Life Science and Association of Cancer Education and Research, Chennai during 25.06.2020 to 27.06.2020.
55. Dr. A. Uma, Professor and Head has attended online webinar on "Online teaching- an emergency tool" conducted by Lala LajpatRai University of Veterinary and Animal Sciences, Hisar on 26.06.2020.
56. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "You Can Become a Good Researcher-Fractional Calculus and Applications" conducted by Sri Eshwari College of Engineering, Coimbatore on 26.06.2020.

57. Er. R. Radha Maheswari, Teaching Assistant has attended online webinar on "Preparing and Management of Research Projects in Food Technology and Allied Sectors" conducted by National Institute of Food Technology Entrepreneurship and Management, Haryana on 26.06.2020.
58. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "A Journey to Drug Discovery Computational Chemistry Approach" conducted by T.J.S Engineering College, Chennai on 27.06.2020.
59. Er. R. Radha Maheswari, Teaching Assistant has attended online webinar on "World Microbiome Day" conducted by K-tech, ABLE (Association of Biotechnology Led Enterprises) & Bio TecNika, Bangalore on 27.06.2020.
60. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Bridge Course in Mathematics Module III "Matrices and Determinants" conducted by Anand Institute of Higher Technology College, Chennai on 27.06.2020.
61. Dr. J. Jayabharathi, Assistant Professor (contractual) has attended online training on "Relevance of Energy Engineering in Fisheries" conducted by College of Energy and Environmental Engineering, TNJFU, Nagapattinam on 29.06.2020.
62. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "You Can Become A Good Researcher- Research Planning And Implementation" conducted by Sri Eshwar College of Engineering, Coimbatore on 29.06.2020.
63. Mr. S. Santhoshkumar, Assistant Professor and Mr. M. Mohamed Faizullah, Assistant Professor (C) have attended online webinar on "Shola Forest: A Paradise of Biodiversity" conducted by Bioshop Heber College, Dept of Botany, Trichirappalli on 30.06.2020.
64. Dr. Mir Ishfaq Nazir, Assistant Professor has attended online webinar on "Microplastics 2020" conducted by Vellore Institute of Technology on 30.06.2020.
65. Dr. K. Hema, Assistant Professor has attended online webinar on "Entrepreneurship development in fish processing sector" conducted by College of Fisheries, Central Agricultural University, Lembucherra during 01.07.2020 to 03.07.2020.
66. Er. T. Siva, Teaching Assistant has attended online webinar on "Digital Transformation: its leverage and impact on communication" (dt: 01.07.2020), "Artificial Intelligence as a tool for COVID – 19 Mitigation" (dt: 02.07.2020), "Differential Power Processing DC – DC Converters for Solar Photovoltaic Applications" (dt: 03.07.2020), "Digital Transformation: its leverage and impact on communication" (dt: 04.07.2020), "Futuristic radiation-based space technology" (dt: 05.07.2020), "Introduction to cloud computing and the internet of things" (dt: 07.07.2020), "Technology trends and challenges" (dt: 08.07.2020) and "Fifth Generation (5G) Mobile communication network" conducted by St. Joseph's College of Engineering, Chennai on 09.07.2020.
67. Dr. Deepak Agarwal, Mr. P. Velmurugan and Dr. Mir Ishfaq Nazir, Assistant Professors have attended online webinar on "Recent Trends in Fish Nutritional Research" conducted by IFPGS, TNJFU, Chennai during 03.07.2020 to 04.07.2020.
68. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Recent Trends in Applications of Mathematics" conducted by P. A. College of Engineering and Technology, Pollachi on 07.07.2020 to 08.07.2020.
69. Dr. C. Judith Betsy, Assistant Professor has attended "online End Note Training and Certification Program" conducted by Clarivate on 07.07.2020, 10.07.2020, 14.07.2020 and 17.07.2020.
70. Dr. D. Manikandavelu and Dr. A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C and Dr. Surulivel, Assistant Professors have attended online webinar on "Innovations in Sustainable Aquaculture" conducted by Dr. M.G.R FCRI, Ponneri on 10.07.2020.
71. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Recent Trends in Mathematics" conducted by Government Arts College, Udhagamandalam during 10.07.2020 to 11.07.2020.
72. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Complex Analysis" conducted by Urumu Dhanalakshmi College, Kattur, Thiruchirapalli on 10.07.2020.

73. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Development of Fuzzy Inventory Models" conducted by Mahendra College of Engineering, Salem on 12.07.2020.
74. Dr. Palani, Assistant Professor (C) has attended online webinar on "Modern Methodologies in Statistical Data Analysis for Agricultural Research" conducted by ICAR during 13.07.2020 to 17.07.2020.
75. Dr. M. Ramar, Assistant Professor has attended online training on "Drug Discovery Hackathon 2020" conducted by MHRD Innovation Cell on 13.07.2020.
76. Dr. A. Subburaj, Assistant Professor has attended online webinar on "Biodiversity Conservation and its Management" conducted by Government Girls' P.G. College, Ujjainand ZSI during 15.07.2020 to 16.07.2020.
77. Dr. A. Subburaj, Assistant Professor has attended online webinar on "Importance of Post-Harvest Management in Fishery sector" conducted by College of Fisheries Science, NDVSU, Jabalpur during 17.07.2020 to 18.07.2020.
78. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "Food Texture Analysis – a practical aspect" conducted by Rajalakshmi Engineering College, Chennai on 17.07.2020.
79. Er. T. Siva, Teaching Assistant has attended online webinar on "Immune Boosters and COVID – 19" conducted by YMCA Madras, Chennai on 17.07.2020.
80. D.Manimekalai and Mr. P. Velmurugan, Assistant Professor has attended online webinar on "Marine Natural Products-2020" conducted by Sathyabama Institute of Science and Technology and Earth Science Technology Cell, MoES, Govt. of India during 17.07.2020 to 21.08.2020.
81. Dr. D. Manikandavelu, Dr. P. Padmavathy and Dr. A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen,Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Dr. P. Elakkanai,Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C and Dr. Surulivel, Assistant Professors, Mr. M. Mohamed Faizullah, Assistant Professor (C) have attended online webinar on "Scope and challenges in production, value addition, marketing and export of spirulina in the context of a pandemic like Covid-19" conducted by Dr.M.G.R FCRI, Ponneri on 18.07.2020.
82. Dr. E. Suresh, Assistant Professor has attended online webinar on "New-age technologies for sustainable Brackishwater Aquaculture" conducted by ICAR -CIBA, Chennai on 18.07.2020.
83. Dr. M. Ramar, Assistant Professor has attended online webinar on "Important aspects in writing Research Articles and Research Proposals" conducted by R & D, E.G.S. Pillay Arts and Science College, Nagapattinam on 18.07.2020.
84. Dr. E. Suresh, Assistant Professor has attended online webinar on "The recent trends in aquaculture industries" conducted by Sathyabama University, Chennai during 20.07.2020 to 25.07.2020.
85. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Application of Mathematics in Wavelet Packet Transform for Image Processing" conducted by Kumaraguru College of Technology, Coimbatore on 25.07.2020.
86. Er. T. Siva, Teaching Assistant has attended online webinar on "BLDC Motor and its industrial Applications" conducted by Vellore Institute of Technology, Chennai on 26.07.2020.
87. Dr. D. Manikandavelu, Dr. S. Athithan and Dr. A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Mrs. Agnes Daney Angela, Dr. C. Lloyd Chrispin, Dr. Surulivel, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C, Dr. Surulivel, Mr. R. Durairaja, Dr. B. Chrisolite and Mr. T. Ravikumar, Assistant Professors have attended "online webinar on Covid-19 and Its Impact on Food security among Marine Fisher folk" conducted by Dr.M.G.R FCRI, Ponneri on 27.07.2020.

88. Dr. S. Prakash, Assistant Professor has attended online webinar on "Legal Framework for Coastal An Indian Perspective" conducted by Sathybama Institute of Science and Technology, Chennai during 27.07.2020 to 29.07.2020.
89. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "Advances in Food Processing for the development of Functional foods" conducted by Sant Longwal Institute of Engineering and Technology, Longwal on 27.07.2020.
90. Dr. D. Manikandavelu and Dr.A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs.Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C, Dr. Surulivel and Mr. R. Durairaja, Assistant Professors have attended online webinar on "Conservation and Management of Marine Fisheries Resources" conducted by Dr.M.G.R FCRI, Ponneri on 28.07.2020.
91. Mr. R. Durairaja, Assistant Professor has attended online webinar on "Prospects and challenges of Extension Education System in Veterinary & allied sciences during COVID 19 pandemic scenario of India" conducted by West Bengal university of Animal and Fisheries Sciences during 28.07.2020 to 29.07.2020.
92. Mr. R. Durairaja, Assistant Professor has attended online webinar on "Impact and Perspective of Pandemic Covid – 19 on Fisheries and Aqua sector: A special focus on Andhra Pradesh" conducted by College of Fisheries, SVVU, Muthukur during 29.07.2020 to 31.07.2020.
93. Dr. D. Manikandavelu and Dr.A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C and Dr. Surulivel, Assistant Professors have attended online webinar on "Innovative Mission in the Future of Fish Processing" conducted by Dr.M.G.R FCRI, Ponneri on 29.07.2020.
94. Dr. P. Padmavathy, Professor and Head and Dr. P. Elakkanai, Assistant Professor have attended online webinar on "National capacity building Training on Marine Biodiversity and its conservation" conducted by Dr. Ambedkar Government Arts College, Chennai during 29.07.2020 to 31.07.2020.
95. Dr. D. Manikandavelu, Dr.A. Uma and Dr.M. Rosalind George, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C, Dr. Surulivel, Dr.G.Arul Oli and K.S.VijayAmirtharaj, Assistant Professors have attended online webinar on "Status of Ornamental Fish Culture in Tamil Nadu during Pandemic" conducted by Dr.M.G.R FCRI, Ponneri on 30.07.2020.
96. Dr. D. Manikandavelu and Dr.A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C and Dr. Surulivel Assistant Professors have attended online webinar on "Business opportunities for Livelihood and Export Development during Post-Covid 19" conducted by Dr.M.G.R FCRI, Ponneri on 30.07.2020.
97. Mr. D. Lakshmikanth, Teaching Assistant has attended online webinar on "Outcome Based Education (OBE)-Competency Profile Mapping with Courses and Course Outcomes (Cos)" conducted by Sri Eshwar College of Engineering, Coimbatoreon 30.07.2020.
98. Dr. P. Padmavathy, Professor and Head and Dr. P. Elakkanai and Dr. A. Subburaj, Assistant Professor have attended online webinar on "Innovative technologies, entrepreneurship avenues and livelihood enhancement in sustainable management of animal farming" conducted by Dr. Ambedkar Government Arts College, Chennai during 03.08.2020 to 04.08.2020.
99. Dr. P. Padmavathy, Professor and Head has attended online webinar on "Innovative technologies entrepreneurship avenues and livelihood enhancement in sustainable management of Animal farming" conducted by Dr.Ambedkar Government Arts college, Chennai during 03.08.2020 to 04.08.2020.

100. Er. T. Siva, Instructor has attended online webinar on "Design Considerations of Electrical Drive Train in Wind Turbines" conducted by VIT - Vellore Institute of Technology, Chennai on 04.08.2020.
101. Er.T. Siva, Instructor has attended online webinar on "Research Challenges in Power Electronics and Power Systems" conducted by Balaji Institute of Technology & Science, Warangal during 05.08.2020 to 07.08.2020.
102. Mr. T. Ravikumar, Assistant Professor & Head has attended online webinar on "Fishing Craft and Gears" conducted by Mumbai Research Center of ICAR- CIFT on 05.08.2020.
103. Dr. S. Balasundari, Dean, Dr. D. Manikandavelu, Dr. P. Padmavathy and Dr. A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C, Dr. Surulivel, T.Ravikumar, Dr. A. Subburaj, Dr. P. Elakkanai, Dr. Deepak Agarwal, Dr. S. Prakash and Dr. L. Vinoth Kumar, Assistant Professors, Mrs. V. Lakshme Gayathre and Mr.M.Mohammed Faizullah Assistant Professors (C) have attended online webinar on "Impact of COVID-19 on Marine Fisheries and Seafood Marketing" conducted by Dr.M.G.R FCRI, Ponneri on 06.08.2020.
104. Dr. M. Ramar, Assistant Professor has attended "online conclave on Transformational Reforms in Higher Education under National Education Policy, 2020" conducted by Ministry of Human Resource Development (MHRD), University Grants Commission (UGC) and AICTE on 07.08.2020.
105. Dr. M. Ramar, Mr. R. Durairaja, Mr. T. Ravikumar, Dr. B. Chrisolite and Dr. R. Shalini, Assistant Professors have attended online webinar on "5th Tamil National conference" conducted by Tamil Nadu Agricultural University, Coimbatore during 09.10.2020 to 10.10.2020.
106. Dr.P.Padmavathy, Professor and Head, Dr.P.Elakkanai and Dr.A.Subburaj, Assistant Professor have attended online webinar on "Insights into marine biodiversity and taxonomy" conducted by Sathyabama Institute of Science and Technology, Chennai during 10.08.2020 to 14.08.2020.
107. Dr.A. Subburaj, Assistant Professor has attended online webinar on "Aquatic Biodiversity Conservation" conducted by Madurai Diraviyam Thayumanavar Hindu College, Pettai, Tirunelveli on 11.08.2020.
108. Dr.A.Subburaj, Assistant Professor has attended online webinar on "Bioprospecting Ascidians - A Marine Invertebrate" conducted by T. John, College of Pharmacy, Bangalore on 12.08.2020.
109. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "Newer sensory methods for consumer insights" conducted by National Institute of Food Technology Entrepreneurship & Management, Haryana on 12.08.2020.
110. Er. R. Radha Maheswari, Instructor has attended online webinar on "New Sensory Methods for Consumer Insights" (dt: 12.08.2020) and "Reading and Decoding Food Labels" (dt: 29.08.2020) conducted by National Institute of Food Technology Entrepreneurship and Management, Haryana.
111. Mr. K.S.Vijay Amirtharaj, Assistant Professor has attended online webinar on "Aquaculture and Fisheries: Development and Sustainability" conducted by Guru Nanak College (Autonomus),Chennai during 13.08.2020 to 19.08.2020.
112. Dr.A. Subburaj, Assistant Professor has attended online webinar on "Ecology and Fisheries of Reservoirs" conducted by ECOR, Foundation on 16.08.2020.
113. Mr. S. Santhoshkumar and Dr. A. Subburaj, Assistant Professor have attended online webinar on "COVID-19 Pandemic- Impact on Sustainable Fishery Sector and Global Trade (CPISFSG-2020)" conducted by Vikrama Simhapuri University, Nellore on 17.08.2020.
114. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Applications and usefulness of RVA in Starch Processing and related Research" conducted by NIFTEM, Kundli, Haryana on 17.08.2020.
115. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Scaling up Rice Fortification in Government Safety Net Programmes and Open Market" conducted by Food Safety and Standards Authority of India & International Training Centre Food Safety Analysis and Applied Nutrition, Chennai on 17.08.2020.

116. Mr. S. Santhoshkumar and Dr. A. Subburaj, Assistant Professor have attended online webinar on "Scuba diving and underwater photography" conducted by Periyar EVR college (A) Tiruchirappalli on 18.08.2020.
117. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "An Introduction to FSSAI Act and Regulations" conducted by Rajalakshmi Engineering College, Chennai on 19.08.2020.
118. Dr. J. Jayabharathi, Assistant Professor (contractual) has attended online webinar on "Renewable Energy For Sustainable Development" conducted by Sri Parasakthi College for Women, Courtallam on 20.08.2020.
119. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Nanotechnology in Food Processing and Preservation" conducted by NIFTEM, Kundli, Haryana on 21.08.2020.
120. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "13 C Based metabolic flux analysis" conducted by St. Joseph's College of Engineering, Chennai on 21.08.2020.
121. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Entrepreneurs in Food Processing: A Value Chain Perspective" conducted by NIFTEM, Kundli, Haryana on 22.08.2020.
122. Dr. A. Subburaj, Assistant Professor has attended online webinar on "Unique Marine Fauna Marine Ornamental Aquaculture: Measure towards Conservation of Biodiversity" conducted by ZSI, Marine Aquarium and Regional centre, Digha, West Bengal on 24.08.2020.
123. Mr. R. Durairaja, Assistant Professor has attended online webinar on "Exploring the impact of COVID-19 on the ecosystem health of rivers and its dolphin population: Present status and future strategy for conservation in India-Bangladesh-Myanmar-Nepal" conducted by ICAR – CIFRI, West Bengal during 24.08.2020 to 25.08.2020.
124. Dr.A. Subburaj, Assistant Professor has attended online webinar on "Enhancing Conservation of River Dolphins through Sub-Regional Cooperation" conducted by ICAR-CIFRI, NMCG, IFSI, PFGF & AEHMS during 24.08.2020 to 25.08.2020.
125. Dr. N. Manimehalai, Dean, Dr. K. Hema and Dr. R. Brimapureeswaran, Assistant Professors and Er. R. Radha Maheswari, Instructor have attended online webinar on "Recent Advances in Dairy Process Engineering" conducted by College of Food and Dairy Technology, Koduvalli during 24.08.2020 to 28.08.2020.
126. Dr. A. Uma and Dr. P. Padmavathy, Professor & Heads, Dr. G. Arul Oli, Mr. T.Ravikumar, Dr. S. Saravanan, Dr. A. Subburaj, Assistant Professors and Mr. M. Mohammed Faizullah, Assistant Professor (C) have attended online webinar on Oceans in the wake of Climate change conducted by FCRI, Thoothukudi during 26.08.2020 to 28.08.2020.
127. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Breast feeding Week" conducted by Jamal Mohamed College, Trichy on 27.08.2020.
128. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Herbal Biomolecules: Novel Food Technologies in the Wake of Corona Pandemic" conducted by AFSTI-Chennai Chapter during 27.08.2020 to 28.08.2020.
129. Dr. R. Ezhil Rani, Assistant Librarian has attended an online training entitled "Reinventing Excellence in Librarianship" conducted by LIS Academy and University of Hyderabad during 27.08.2020 to 30.08.2020.
130. Dr. P. Elakkanai, Assistant Professor has attended online webinar on "Capture Fisheries in Post-Pandemic (COVID-19) Situation" conducted by Dr. M.G.R FC & RI, Ponneri on 28.08.2020.
131. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Response surface Methodology (An introduction and its applications in Research)" conducted by ICAR-Central Institute of Agricultural Engineering, regional Centre, Coimbatore on 28.08.2020.
132. Dr. V. Kaliyamurthi and Dr. Ambika Binesh, Assistant Professors have attended online webinar on "Advances and Prevention in cardiovascular disease: Novel technologies for Treatment, and How to avoid needing them" conducted by IEEE Photonics society Mangalam College of engineering on 29.08.2020.
133. Dr. K. Hema, Assistant Professor has attended online webinar on "Reading and Decoding Food Labels" conducted by Bhaskaracharya College of Applied Sciences, New Delhi on 29.08.2020.

134. Dr. S. Prakash, Assistant Professor has attended online webinar on "Frontiers in Microbiology" conducted by Annamalai University on 30.08.2020.

135. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinars on "Unblocking the Future through Emerging Precision Farming and Post-Harvest Technologies" and "Edible Landscape and future food system for healthy Diets" conducted by ICAR-NAHEP & CAAST & Navsari Agricultural University, Navsari on 30.08.2020.

136. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Nutrition for all ages during COVID-19 Pandemic" conducted by Akkamahadevi Women's University, Karnataka during 01.09.2020 to 07.09.2020.

137. Dr. Usha Antony, Dean has attended online webinar on "Diet and Nutrition among Pandemics" conducted by Community Science College and Research Institute, Madurai during 03.09.2020 to 07.09.2020.

138. Dr. K. Hema, Assistant Professor has attended online webinar on "Post Covid Current Scenario of Seaweed Cultivation and Downstream Processing Challenges and Prospects" conducted by Indian Chamber of Commerce in association with CSIR – CSMCRI during 03.09.2020 to 04.09.2020.

139. Dr. N. Manimehalai, Dean has attended online webinar on "Farm Fresh Produce Processing: Challenges and Interventions" conducted by ICAR- Central Institute of Agricultural Engineering, Regional Center, Coimbatore on 04.09.2020.

140. Mr. S. Santhoshkumar, Dr.A. Subburaj and Dr. P. Elakkanai, Assistant Professor have attended online webinar on "Gentle Giants of the Ocean conducted by Nature Club of Rajapalayam Rajus' College and Wildlife Association of Rajapalayam" on 05.09.2020.

141. Er. R. Radha Maheswari, Instructor has attended online webinar on "Pulse Electric Field for Food Processing Technology" and "Edible Films and Coatings to Preserve Horticultural Crops conducted by Navsari Agricultural University, Navsari, Gujarat on 07.09.2020.

142. Dr. A. Subburaj, Assistant Professor has attended online webinar on "Impact of COVID 19 pandemic on fisheries sector" conducted by RAMNAGAR College, Depal, Purba Medinipur, West bengal on 07.09.2020.

143. Dr. T. Umamaheswari, Assistant Professor has attended online webinar on "Innovative Practices in Extension Research and Evaluation" conducted by ICAR-NAARM, Hyderabad during 08.09.2020 to 28.09.2020.

144. Dr. L. Vinoth Kumar, Assistant Professor has attended online webinar on "Entrepreneurship Development Webinar in Food Processing"- Youth 4 New India conducted by Food Processing, Skill council, NSDC on 08.09.2020.

145. Dr. K. Hema, Assistant Professor has attended online webinar on "Harnessing Pradhan Mantri Matsya Sampada Yojana (PMMSY) scheme for aquapreneurship development" conducted by Dr.M.G.R FC&RI, Ponneri on 10.09.2020.

146. Mr.M. Mohammed Faizullah, Assistant Professor (C), Assistant Professor has attended online webinar on "Fishery Resources and Future Fisheries" onducted by Arignar Anna Govt Arts College, Cheyyar on 13.09.2020.

147. Dr. L. Vinoth Kumar, Assistant Professor has attended online webinar on "Aquaculture Techniques and Disease Management – ATDM 2020" conducted by Sathyabama Institute of Science and Technology, Chennai during 14.09.2020 to 17.09.2020.

149 Dr. P. Elakkanai and Dr.A. Subburaj, Assistant Professors and Mrs. V. Lakshme Gayathre, Assistant Professor (C) have attended online webinar on "Marine pollution and conservation research" to protect our oceans conducted by NCCR and MoES, GoI during 16.09.2020 to 19.09.2020.

150. Mr. S. Santhoshkumar and Dr.A.Subburaj, Assistant Professors and Mrs. V. LakshmeGayathre, Assistant Professor (C) have attended online webinar on "Perspective on fish taxonomy" conducted by College of Bajkul Milani Mahavidyalaya, West Bengal on 20.09.2020.

151. Dr. P. Karthickumar, Assistant Professor and Er. R. Radha Maheswari, Instructor have attended online webinar on "Recent Trends in Non-Thermal Food Processing Technologies" conducted by National Institute of Technology Rourkela, Odisha during 20.09.2020 to 21.09.2020.

152. Er.T. Siva, Instructor has attended online webinar on "Recent Development and Entrepreneurship in Sustainable Green Energy Technologies and Smart Grids – Series B "(RDESGETSG-B)" conducted by B.V. Raju Institute of Technology (BVRIT), Narsapur, Telangana during 21.09.2020 to 26.09.2020.

153. Mr. S. Santhoshkumar and Dr. A. Subburaj, Assistant Professors have attended online webinar on "Faunal Diversity of India" conducted by Zoological survey of India, Regional Centre, Dehradun on 23.09.2020.

154. Dr. D. Manikandavelu, Dr. Cheryl Antony, Dr. P. Padmavathy and Dr. A. Uma, Professor and Heads, Dr. P. Chidambaram and Dr. Mohammed Tanveer Associate Professors, Mr. T.L.S. Samuel Moses, Dr. S. Selvaraj, Mrs. Nimish Mol Stephen, Dr. N. Muralidharan, Mr. R. Velmurugan, Mr. P. Pavinkumar, Mrs. S. Aruna, Mrs. Agnes Daney Angela, Dr. Lloyd Chrispin C, Dr. Surulivel and Dr. P. Elakkanai, Assistant Professors, Dr. M. Petchimuthu, Dr. J. Jayabharathi and Mr. M. Mohammed Faizullah, Assistant Professors (C) have attended online conference on "PONSHRIMP" in the theme of "Soil & water quality management for sustainable shrimp farming"conducted by Dr.M.G.R FCRI, Ponneri on 23.09.2020.

155. Mr. S. Santhoshkumar and Dr. A. Subburaj, Assistant Professors have attended online webinar on "Underwater Treasures the Corals" conducted by Marine Aquarium and Regional Centre, Zoological Survey of India, West Bengal on 24.09.2020.

156. Dr. Usha Antony, Dean has attended online webinar on "Significance of Nutrition in the First 1000 Days of a Child" conducted by International Training Centre Food Safety and Applied Nutrition, Mumbai on 24.09.2020 and 29.09.2020.

157. Dr.P.Padmavathy, Professor and Head, Dr. C. Judith Betsy, Mr. R. Durairaja, Dr.Jaculine Pereira, Dr. P. Elakkanai and Dr. P. Sivasankar, Assistant Professors, Mr. M. Mohammed Faizullah, Mrs. V. Lakshme Gayathre, Dr. M. Petchimuthu and Dr. R. Palani Assistant Professors (C) have attended online webinar on "Advances in Aquaculture Nutrition" conducted by TNJFU- DIVA, Muttukadu during 24.09.2020 to 25.09.2020.

158. Dr. S. Athithan, Dr. Cheryl Antony, Dr. S. David Kingston and Dr. R. JeyaShakila Professor and Heads, Dr. C. Judith Betsy, Mr. A. Anix Vivek Santhiya, Mr. N. Daniel, Mr. R. Durairaja, Dr. R. Shalini, Dr. B. Sivaraman, Dr. S. Saravanan, Dr.J. Jaculine Pereira and Dr. P. Sivasankar, Assistant Professors and Dr. M. Petchimuthu, Assistant Professor (C) have attended online webinar on "Advances in Fish Vaccines & Prophylactics" conducted by FC&RI, Thoothukudi on 30.09.2020.

159. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "Traceability and Recall in Foods" conducted by Lady Irwin College, New Delhi on 01.10.2020.

160. Dr. S. Athithan, Professor and Head has attended online webinar on "COVID 19 & its Impact on Food Security among Marine Fisher Folk" conducted by Dr.MGR FCRI, Ponneri on 08.10.2020.

161. Dr. L. Vinoth Kumar, Assistant Professor has attended online webinar on "Food processing technologies - Industry and research perspectives" conducted by College of Fish Nutrition and Food Technology, TNJFU, Chennai during 09.10.2020 to 15.10.2020.

162. Dr. S. Athithan and Dr. A. Uma, Professor and Head, Dr. S. Saravanan, Dr. V. Alamelu, Mrs. S. Aruna, Mrs. S Agnes Daney Angela, Mrs. Nimish Mol Stephen, Mr. S. Santhoshkumar, Mrs. S. Vimaladevi and Dr.A.Subburaj, Assistant Professors, Mr. M. Mohamed Faizullah, Mrs. V. Lakshme Gayathre and Dr. R. Palani, Assistant Professor (C) have attended online webinar on "Fisheries in COVID Times and After: Gender, Ground Truths and Growth" conducted by Dr.MGR FC & RI, Thalainayeru during 12.10.2020 to 16.10.2020.

163. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on Packaging of Fruits & Agricultural Products" conducted by Indian Institute of Packaging- Hyderabad & Ministry of Micro, Small & Medium Enterprises during 12.10.2020 to 20.10.2020.

164. Er. T. Siva, Instructor has attended online webinar on "Integration of Renewable Energy and Big Data Analytics of Smart Grid" conducted by P.A. College of Engineering and Technology, Pollachi during 12.10.2020 to 17.10.2020.

165. Dr. P. Padmavathy, Professor and Head has attended online webinar on "Marine Mammal Conservation in India: Status, Challenges and Opportunities" conducted by CAMPA-Dugong team on 13.10.2020.
166. Dr. J. Jaculine Pereira, Assistant Professor and Dr. M. Petchimuthu, Assistant Professor (C) have attended online webinar on "Vaccines Vs Immunostimulants - is Protection better than Prevention?" conducted by Department of Genetics, Indian Academy Degree College – Autonomous, Bengaluru on 14.10.2020.
167. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "New Dimensional Approaches in Food Processing" conducted by College of Horticultural Engineering and Food Technology, Devihosur, Karnataka during 14.10.2020 to 16.10.2020.
168. Dr. L. Vinoth Kumar, Assistant Professor has attended online webinar on "ornamental fish culture" conducted by School of Industrial Fisheries, Cochin University of Science and Technology (CUSAT) Kochi during 15.10.2020 to 17.10.2020.
169. Mr. P. Pavinkumar, Assistant Professor has attended online webinar entitled "The Mistaken Mermaid of the Sea- Dugong, the Sea Cow" conducted by ZSI, Palkbay on 15.10.2020.
170 Dr. S. Athithan, Professor and Head and Dr. L. Vinoth Kumar, Assistant Professor have attended online webinar on "Fish Farming with Biofloc Technology" conducted by Fisheries Research & Information Centre, Hebbal, Bangalore on 16.10.2020.
171. Dr. J. Jaculine Pereira, Assistant Professor and Dr.M.Petchimuthu, Assistant Professor (C) have attended online webinar on "The Response of the DBT's Autonomous Institutes to COVID-19 (Part-III) conducted by DBT on 16.10.2020.
172. Dr. S. Athithan, Professor and Head has attended online conference on "Sustainable, Technology Led & Responsible Development of Fisheries Sector" conducted by CII AGRO & FOOD TECH 2020 India on 19.10.2020.
173. Dr. R. Brimapureeswaran, Assistant Professor has attended online webinar on "Impact of Biochemistry to Human health" conducted by RAMCW, Thiruvarur during 19.10.2020 to 21.10.2020.
174. Dr. R. Palani, Assistant Professor (C) has attended online webinar on "Trends in Hardware Security" conducted by SETS, Chennai on 22.10.2020.
175. Dr. V. Alamelu, Assistant Professor has attended online webinar on "Prime Minister Formalisation of Micro Food Processing Enterprises (PMFME) Scheme" conducted by EDII Periyakulam on 22.10.2020.
176. Dr. J. Jaculine Pereira, Assistant Professor and Dr.M.Petchimuthu, Assistant Professor (C) have attended online webinar on "Laser Micro dissection- A contact free approach to ensure sterile assays" conducted by Leica Microsystems on 23.10.2020.
177. Dr. P. Karthickumar, Assistant Professor has attended online webinar on "Startups ecosystem for Agri-entrepreneurship development in India" conducted by School of Agricultural Sciences & Technology, Shirpur on 24.10.2020.
178. Dr. S. Selvaraj, Assistant Professor has attended online webinar on "Food Chemical and Nanomaterials Toxicity conducted by Sree Chitra Tirunal Institute for Medical Sciences and Technology", Trivandrum during 26.11.2020 to 28.11.2020.
179. Dr. M. Petchimuthu, Assistant Professor (C) has attended online webinar on "Prime Minister Formalisation of Micro Food Processing Enteprises (PMFME) Scheme" conducted by TANUVAS, College of Food and Dairy Technology, Koduveli Chennai on 28.10.2020.
180. Dr. S. Athithan, Dr. P. Padmavathy and Dr. Cheryl Antony, Professor and Heads, Dr. P. Sivasankar, Assistant Professor have attended online webinar on "Biofloc Based Aquaculture" conducted by ICAR-CIBA, Chennai on 06.11.2020.
181. Dr. T. Umamaheswari, Assistant Professor has attended online webinar on "Analysis of Experimental Data using SAS" conducted by ICAR- NAARM, Hyderabad during 09.11.2020 to 17.11.2020.
182. Dr. Mohammed Tanveer, Associate Professor has attended online webinar on "IDEATHON on Artificial Intelligence and IoT for Smart Aquaculture" conducted by ICAR-CIFE, Mumbai during 11.11.2020 to 12.11.2020.

183. Dr. S. Athithan and Dr. P. Padmavathy, Professor and Heads, Dr. P. Elakkanai and Dr. J. Jaculine Pereira, Assistant Professors, Dr. M. Petchimuthu and V. LakshmeGayathre, Assistant Professors (C) have attended online webinar on Aquaculture - Innovations, Sustainability & Beyond conducted by FC&RI, Thoothukudi during 18.11.2020 to 19.11.2020.
184. Dr. B. Chrisolite and Dr. P. Sivasankar Assistant Professors have attended online webinar on "Aquaculture - Innovations, Sustainability and Beyond" conducted by FC&RI, Thoothukudi on 18.11.2020.
185. Dr. S. Athithan and Dr. P. Padmavathy, Professor and Heads, Dr. P. Elakkanai, E. Suresh and Dr. J. Jaculine Pereira, Assistant Professors have attended online webinar on "Sustainable management of aquatic resources for fish production and conservation" conducted by FC&RI, Thoothukudi on 21.11.2020.
186. Dr. S. Athithan, Professor and Head has attended online webinar on "Indian Fisheries Towards Sustainable Development" conducted by FC&RI, Thoothukudi on 21.11.2020.
187. Dr. N. Manimehalai, Dean has attended online conference on "Recent Trends in Food Process Engineering Sector" conducted by Department of Food Process Engineering, School of Bioengineering, SRMIST, Kattankulathur during 10.12.2020 to 11.12.2020.
188. Dr. R. Shalini, Dr. B. Sivaraman and Dr. L. Vinoth Kumar, Assistant Professors have attended online e-Symposium on "Challenges and solutions for seafood safety- Analytical techniques Confirmation" conducted by ICAR-CIFT during 16.12.2020 to 18.12.2020.
189. Dr. D. Manikandavelu, Dr.S. Athithan and Dr.A. Uma, Professor and Heads, Dr. P. Chidambaram, Associate Professor has attended online VI International Conference "Scientific Tamil : Tamil can do" conducted by ASTS, New Delhi at MSSRF, Chennai during 21.12.2020 to 22.12.2020.
190. Dr. R. Ezhil Rani, Assistant Librarian has attended an online conference on "Challenges and Opportunities to Libraries and LIS Professionals in the Changing Global Scenario" conducted by Society for the Advancement of Library and Information Science (SALIS) during 28.12.2020 to 30.12.2020.
191. Dr. M. Menaga, Assistant Professor has attended online webinar on "Overcoming the Hardships in Shrimp Culture" conducted by MPEDA on 07.01.2021.
192. Mr. V. Vijayarahavan, Assistant Professor has attended online webinar on "Value Added Freshwater products and by products development from freshwater fishes" conducted by MANAGE – KUFOS during 18.01.2021 to 22.01.2021.
193. Dr. R. Palani Assistant Professors (i/c) and Dr. M. Ramar, Assistant Professors have attended online webinar on Identifying Intellectual Property Component at the Early Stage of Innovation conducted by R.M.K Engineering College on 23.01.2021.
194. Dr. N. Jayakumar, Associate Professor and Head has attended online webinar on "Hydro-ecological assessment of Point Calimere Ramsar Site for the stakeholders of Point Calimere" conducted by Karunya Institute of Technology and Sciences on 29.01.2021.
195. Dr. M. Menaga, Assistant Professor has attended online webinar on "Advances in Biotechnology & Gene Technology conducted by Department of genetics", Amritha Institute of Genomics during 17.02.2021 to 18.02.2021.
196. Dr. R. Ezhil Rani, Assistant Librarian has attended an online conference on "Management of Knowledge Resource Centres in the Networked Digital Environment: Trends, Challenges and Opportunities" conducted by University of Agricultural Sciences GKVK, Bengaluru during 25.02.2021 to 26.02.2021.
197. Dr. V. Alamelu, Assistant Professor has attended online webinar on "Drying Techniques for food ingredient encapsulation" conducted by Indian Institute of Fish processing Technology on 26.02.2021.
198. Dr. L. Vinoth Kumar, Assistant Professor has attended online webinar on "Sustainable Marine Fisheries and Aquaculture: Policies, Packages and Perspectives in Blue Economy Paradigm" (SMART P3BLUEECO-2021) conducted by Department of Aquatic Biology & Fisheries, University of Kerala during 12.03.2021 to 13.03.2021.
199. Mr. T. Anand, Assistant Professor has attended online webinar on "Challenges and innovation in Engineering and Technology" conducted by Ramco Institute of Technology, Rajapalayam during 19.03.2021 to 20.03.2021.

200. Dr. D. Kesavan, Dr. M. Ramar and Er. S. Monikandon, Assistant Professors have attended online webinar on "Implementation of National Educational Policy-2020" conducted by Ramco Institute of Technology, Rajapalayam on 24.03.2021.

201. Dr. S. Prakash, Assistant Professor has attended online webinar on "Herbal Drug Formulation" conducted by Veridina Micro Lab Pvt Ltd, Chennai on 10.04.2021.

7.5. OVERSEAS TRAININGS / SEMINARS / CONFERENCES ATTENDED

1. Mr. C. Lloyd Chrispin, Assistant Professor has attended online training on "Online learning workshop for faculty" conducted by Qaspir, UK during 01.04.2020 to 03.04.2020.
2. Dr. S. Balasundari, Dean has attended online training on "Different sample preparation approaches for food safety applications" conducted by Thermo Scientific on 23.04.2020.
3. Dr. S. Balasundari, Dean has attended online training on "Food & Beverage Fraud Identification" by IRMS conducted by Thermo Scientific on 02.05.2020.
4. Dr. E. Suresh, T.L.S. Samuel Moses Assistant Professor have attended online webinar on "Aquaculture Genetics: The Basics conducted by United States Aquaculture Society, USA" on 15.05.2020.
5. T.L.S. Samuel Moses, Assistant Professor has attended online training on "YSI Webinar on How Antifouling works" conducted by YSI, USA on 19.05.2020.
6. T.L.S. Samuel Moses and S.Aruna, Assistant Professors have attended online webinar on How aigal sensors work conducted by YST., USA on 26.05.2020.
7. Mrs. S. Vimaladevi, Assistant Professor has attended online training on "Integrated Pest Management: Protect Food Safety & Prevent the Spread of Pathogens" conducted by Food Safety Tech on 30.06.2020.
8. Dr. E. Suresh, Assistant Professor has attended online webinar on" Environmental DNA for Eco-Evo Monitoring of Aquatic Organisms in the New Era" conducted by Illumina, Australia on 15.07.2020.
9. T.L.S. Samuel Moses, Assistant Professor has attended online training on "USAS Webinar on Basic Aquaculture of Genetics" conducted by U.S. National Aquaculture Society on 05.08.2020.
10. Mr. T. Ravikumar, Assistant Professor & Head has attended online training on "Tuna trade and markets – Evaluation and opportunities" conducted by INFOFISH international on 05.08.2020.
11. Dr. S. Selvaraj, Assistant Professor has attended online training on "CRISPR/CAS9 Human Genome Engineering: Basics and Applications" conducted by University of West Minster, UK during 24.08.2020 to 29.08.2020.
12. Mr. S. Santhoshkumar and Dr. A. Subburaj, Assistant Professors and Mr. M. Mohammed Faizullah, Assistant Professor (C) have attended online training on "How to access Taylor & Francis journals" conducted by Taylor & Francis on 16.09.2020.
13. Dr. A. Subburaj, Assistant Professor and Mrs. V. Lakshme Gayathre, Assistant Professor (C) have attended online training on "Managing the Polar Oceans Sustainably" conducted by Science and Geopolitics of Himalaya-Arctic-Antarctica during 28.09.2020 to 29.09.2020.
14. Dr.J. Jaculine Pereira, Assistant Professor and Dr.M.Petchimuthu, Assistant Professor (C) have attended online webinar on Aquaculture Innovation and Technologies conducted by World Aquaculture Society-Asian Pacific Chapter on 30.09.2020.
15. Dr. J. Jaculine Pereira and Mr. S. Santhosh kumar, Assistant Professors and Dr.M.Petchimuthu, Assistant Professor (C) have attended online webinar on "Publishing in academic journals and how succeed with your publication" conducted by Taylor and Francis group on 05.10.2020.
16. Dr. S. Athithan, Professor and Head and Dr. C. Judith Betsy, Assistant Professor have attended online webinar on "Transformation of Enzyme Technology in Animal Nutrition (TET)" conducted by Kemin Industries,Inc., USA on 09.10.2020.
17. Mr. V. Vijayarahavan, Assistant Professor has attended online webinar on "Tune in to the TUNA Talk" conducted by IF Forum on 31.10.2020.
18. Mr. T. Anand, Assistant Professor has attended online webinar on "INFOFISH Technological Innovation Series 2021: Sustainable Aquaculture Technologies" conducted by INFOFISH on 20.01.2021.

SEMINARS / SYMPOSIA / CONFERENCES / WORKSHOPS / SUMMER / WINTER SCHOOLS / SHORT COURSES / TRAINING PROGRAMMES ORGANIZED

SEMINARS / SYMPOSIA / CONFERENCES / WORKSHOPS / SUMMER / WINTER SCHOOLS / SHORT COURSES / TRAINING PROGRAMMES ORGANIZED

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8.1. SEMINARS / SYMPOSIA / CONFERENCES

1. Recent Trends in "Fish Nutritional Research" (online mode) was conducted by IFPGS, Chennai on 03.07.2020 and 04.07.2020 This training was sponsored by TNJFU and 638 people participated in this training.
2. "Current Trends in Fish Biotechnological Research" (online mode) was conducted by IFPGS, Chennai on 09.07.2020 and 11.07.2020. This training was sponsored by TNJFU and 1055 people participated in this training.
3. "COVID-19 on the Aquaculture Sector – Challenges and Future (online mode)" was conducted by DAQ, FCRI, Thoothukudi on 10.07.2020. This training was sponsored by TNJFU and 100 people participated in this training.
4. Webinar on "Innovations in Sustainable Aquaculture" was conducted by DAQ, Dr.M.G.R. FCRI, Ponneri on 10.07.2020. This training was sponsored by TNJFU and 135 people participated in this training.
5. Webinar on "Scope and Challenges in Production, Value Addition, Marketing and Export of Spirulina in the Context of a Pandemic Like Covid-19"' was conducted by DAEM, Dr.M.G.R. FCRI, Ponneri on 18.07.2020. This training was sponsored by TNJFU and 176 people participated in this training.
6. A Futuristic view on "Contemporary Fish products, Packaging Technologies and Safety Guidelines" (online mode) was conducted by DFPT, Dr.M.G.R. FCRI, Thalainayeru on 21.07.2020. This training was sponsored by TNJFU and 134 people participated in this training.
7. Webinar on "Advances in Aquatic Animal Health Management" was conducted by DAAHM, Dr.M.G.R. FCRI, Ponneri on 27.07.2020. This training was sponsored by TNJFU and 113 people participated in this training.
8. Webinar on "Conservation and Management of Marine Fisheries Resources" was conducted by DFRM, Dr.M.G.R. FCRI, Ponneri on 28.07.2020. This training was sponsored by TNJFU and 262 people participated in this training.
9. Webinar on "Innovative Mission in the Future of Fish Processing" was conducted by DFPT, Dr.M.G.R. FCRI, Ponneri on 29.07.2020. This training was sponsored by TNJFU and 230 people participated in this training.
10. Webinar on "Status of Ornamental Fish Culture in Tamil Nadu during Pandemic" was conducted by DAQ, Dr.M.G.R. FCRI, Ponneri on 30.07.2020. This training was sponsored by TNJFU and 150 people participated in this training.
11. Webinar on "Business opportunities for Livelihood and Export Development during Post-Covid-19" was conducted by DFEES, Dr.M.G.R. FCRI, Ponneri on 30.07.2020. This training was sponsored by TNJFU and 250 people participated in this training.
12. Webinar on "Impact of COVID-19 on Marine Fisheries and Seafood Marketing" was conducted by DFTFE, Dr.M.G.R. FCRI, Ponneri on 06.08.2020. This training was sponsored by TNJFU and 220 people participated in this training.
13. Virtual Conference on "Oceans in the Wake of Climate: Challenges and Solutions" was conducted by DAEM, FCRI, Thoothukudi from 26.08.2020 to 28.08.2020. This training was sponsored by TNJFU and 100 people participated in this training.
14. Jio Meet on "Navigational Signals" was conducted by DIVF, Ramanathapuram & Reliance Foundation on 11.09.2020. This training was sponsored by TNJFU & Reliance Foundation and 20 people participated in this training.

15. Annual National Conference PONSHRIMP in the theme of "Soil & Water Quality Management for Sustainable Shrimp Farming" (online mode) was conducted by DAEM, Dr.M.G.R. FCRI, Ponneri on 23.09.2020. This training was sponsored by TNJFU and 170 people participated in this training.
16. International Webinar on "Advances in Aquaculture Nutrition (IWAAN) – 2020" was conducted by DIVA ON 24.09.2020 & 25.09.2020 (2 days) This training was sponsored by TNJFU & Reliance Foundation and 115 people participated in this training.
17. Jio Meet on "Hygienic Handing of Fishes" was conducted by DIVF, Ramanathapuram & Reliance Foundation on 28.09.2020. This training was sponsored by TNJFU & Reliance Foundation and 35 people participated in this training.
18. National Webinar on "Advances in Fish Vaccines and Prophylactics" was conducted by DFPHM, FCRI, Thoothukudi on 30.09.2020. This training was sponsored by TNJFU and 80 people participated in this training.
19. Jio Meet on "Safety at Sea" was conducted by DIVF, Ramanathapuram & Reliance Foundation on 30.09.2020. This training was sponsored by TNJFU & Reliance Foundation and 30 people participated in this training.
20. Webinar on "Covid-19 and its Impact on Food Security Among Marine Fisher folk" was conducted by DFEES, Dr.M.G.R. FCRI, Ponneri on 08.10.2020. This training was sponsored by TNJFU and 65 people participated in this training.
21. Fifth National Tamil Conference (Fisheries Engineering Chapter) (online mode) was conducted by Dr.M.G.R. FCRI, Thalainayeru on 09.10.2020 and 10.10.2020 This training was sponsored by TNAU & ASTS, New Delhi and 23 people participated in this training.
22. "Food Processing Technologies - Industry & Research Perspectives" (online mode) was conducted by CFNFT, Chennai on 6 days / (9.10.2020 – 15.10.2020). This training was sponsored by TNJFU and 154 people participated in this training.
23. Jio Meet on "Safety at sea and Marine Engine Maintenance" was conducted by DIVF, Ramanathapuram & Reliance Foundation on 10.10.2020. This training was sponsored by TNJFU & Reliance Foundation and 25 people participated in this training.
24. "Fisheries in COVID Times and After: Gender, Ground Truths and Growth" (online mode) was conducted by DFEES, Dr.M.G.R. FCRI, Thalainayeru on 12.10.2020 and 16.10.2020. This training was sponsored by TNJFU and 84 people participated in this training.
25. Jio Meet on "Safety at sea, Marine Engine Maintenance and Hygienic Handling of Fishes" was conducted by DIVF, Ramanathapuram & Reliance Foundation on 13.10.2020. This training was sponsored by TNJFU & Reliance Foundation and 25 people participated in this training.
26. "Aquaculture – Innovation, Sustainability and Beyond" was conducted by DAQ, FCRI, Thoothukudi on 18.11.2020 & 19.11.2020. This training was sponsored by TNJFU and 80 people participated in this training.
27. National Webinar on "Sustainable Management of Aquatic Resources for Fish Production and Conservation" was conducted by DFRM, FCRI, Thoothukudi on 21.11.2020. This training was sponsored by TNJFU and 120 people participated in this training.
28. Technical Session for 6th National Conference on Agricultural Scientific Tamil, (online mode) was conducted by Dr.M.G.R. FCRI, Thalainayeru on 22.12.2020 This training was sponsored by ASTS, New Delhi and 14 people participated in this training

8.2. SUMMER/WINTER SCHOOLS /SHORT COURSES (Nil)

8.3. TRAININGS

1. "Culture of Asian Seabass using Recirculating Aquaculture system" was conducted by DAQ, Dr.M.G.R FCRI, Ponneri between 14.02.2020 to 18.02.2020. This training was sponsored by NADP and 20 people participated in this training.

2. "Computer Skill Development of students" was conducted by CoFE, Nagapattinam on 21.02.2020. This training was sponsored by ICAR SC-SP and 20 people participated in this training.
3. "Mobile Application Development" was conducted by CoFE, Nagapattinam on 05.03.2020. This training was sponsored by ICAR SC-SP and 20 people participated in this training.
4. "Tutorial Classes for SC Students by visiting Eminent Experts for preparing National / International competitions" was conducted by CoFE, Nagapattinam on 11.03.2020. This training was sponsored by ICAR SC-SPand 93 people participatedin this training.
5. "Precautionary measures for Farm women at milk procurement center and Livestock management during COVID 19" was conducted by KVK, Sikkal on 01.05.2020. This training was sponsored by SOS International NGO and 30 people participated in this training.
6. "COVID19 Lockdown guidance Programme" to SHG women at milk collection point was conducted by KVK, Sikkal on 02.05.2020. This training was sponsored by SOS International NGO and 30 people participated in this training.
7. Krishi Jagran -Facebook Live Programme on "summer management in Livestock" (online mode) was conducted by KVK, Sikkal on 03.05.2020. This training was sponsored by Ministry of Agriculture, GOI and 2500 people participated in this training.
8. "Summer Management in Livestock and Lockdown guidance Programme to women farmer at milk collection point" was conducted by SOS International NGO on 05.05.2020. This training was sponsored by SOS International NGO and 32 people participated in this training.
9. "ICT in Fisheries" (online mode) was conducted by CoFE, Nagapattinam on 12.06.2020 and 13.06.2020. This training was sponsored by TNJFU and 200 people participated in this training.
10. Webinar on "Conservation and management of marine fisheries resources" was conducted by DFRM, Dr.M.G.R FCRI, Ponneri on 28.07.2020. This training was sponsored by TNJFU and 252 people participatedin this training.
11. "Data Analytics in Fisheries" was conducted by DFEES, Thalainayeru between 10.08.2020 and 03.09.2020. This training was sponsored by TNJFU and 237 people participated in this training.
12. A webinar series for "promoting innovation & start-up culture in marine products business sector and presented the advantages of EDII-MPBIF" was conducted by DFPT, FCRI, Thoothukudi on 28.08.2020. This training was sponsored by EDII, Chennai and 15 people participated in this training.
13. "Fisheries Engineering: A Carrier Opportunity" (online mode) was conducted by Dept of Aquaculture Engineering, CoFE, Nagapattinam on 09.09.2020. This training was sponsored by TNJFU and 170 people participated in this training.
14. Webinar on "Ocean Bounty Season 2020, Series 02" was conducted by DFPT, FCRI, Thoothukudi on 11.09.2020. This training was sponsored by EDII, Chennai and 15 people participated in this training.
15. "POSHAN MAAH-Nutri Garden Programme" was conducted bySOS International NGO on 17.09.2020. This training was sponsored by ICAR-ATARI and 42 people participated in this training.
16. Training programme for "Capacity building of Farmers/ Village Level Functionaries on Disaster management and drought mitigation measures" (was conducted by SOS International NGO on 24.09.2020. This training was sponsored by TNAU and Department of Revenue and Disaster Managementand 30 people participatedin this training.
17. "Aquaponics: Design, Construction and Management" was conducted by Dept of Aquaculture Engineering, CoFE, Nagapattinam on 24.09.2020. This training was sponsored by TNJFU and 44 people participated in this training.
18. Webinar on "Ocean Bounty Season 2020, Series 03" was conducted by DFPT, FCRI, Thoothukudi on 26.09.2020. This training was sponsored by EDII, Chennai and 25 people participated in this training.

19. "Fish Feed Preparation and Important Nutrient Testing" was conducted by IFPGS, Chennai on 28.09.2020 to 30.09.2020. This training was sponsored by NADP and 20 people participated in this training.
20. A webinar on "Freshwater Fish Culture" was conducted by DFEES, Dr.M.G.R FCRI, Ponneri on 14.10.2020 and 15.10.2020. This training was sponsored by TNJFU and 22 people participatedin this training.
21. Webinar on "Ocean Bounty Season 2020, Series 04" was conducted by DFPT, FCRI, Thoothukudi on 23.10.2020. This training was sponsored by EDII, Chennai and 25 people participated in this training.
22. The training on "Culture of Asian Seabass using Recirculating Aquaculture system" was conducted by DAQ, Dr.M.G.R FCRI, Ponneri on 02.11.2020 to 06.11.2020. This training was sponsored by NADP and 20 people participated in this training.
23. A webinar series for "promoting innovation and start- up culture in marine products business sector (Series- 05)" was conducted by DFPT, FCRI, Thoothukudi on 04.11.2020. This training was sponsored by EDII, Chennai and 33 people participated in this training.
24. "Biofloc Technology based Tilapia and Shrimp culture system" was conducted by DFEES and DAQ, Dr.M.G.R FCRI, Ponneri on 09.11.2020 to 11.11.2020. This training was sponsored by TNJFU and 27 people participated in this training.
25. "Freshwater Ornamental Fish Farming Technology" was conducted by ARTP, Madhvaram on 17.11.2020 to 19.11.2020. This training was sponsored by Jeevajothi NGO, Madhavaram and 15 people participated in this training.
26. A webinar series for "promoting innovation and start- up culture in marine products business sector (Series- 06)" was conducted by DFPT, FCRI, Thoothukudi on 19.11.2020. This training was sponsored by EDII, Chennai and 25 people participated in this training.
27. "Production, Packaging, Quality control, and Marketing of value-added fish and seaweed products" was conducted by DFPT, Dr.M.G.R FCRI, Ponneri on 19.11.2020 and 20.11.2020. This training was sponsored by NADP and 18 people participatedin this training.
28. "Culture of Asian Seabass using Recirculating Aquaculture system" was conducted by DAQ, Dr.M.G.R FCRI, Ponneri on 23.11.2020 to 28.11.2020. This training was sponsored by NADP and 20 people participated in this training.
29. "Freshwater Ornamental Fish Farming Technology" was conducted by ARTP, Madhavaram on 24.11.2020, 27.11.2020 and 28.11.2020. This training was sponsored by Jeevajothi NGO, Madhavaramand 15 people participatedin this training.
30. "Ornamental Fish Farming Technology" was conducted by ARTP, Madhavaram on 24.11.2020, 27.11.2020 and 28.11.2020. This training was sponsored by ATMA- scheme (AD,Agri, Rajakamangalam block, Kanniyakumari) and 40 people participated in this training.
31. Fish Based Bakery Product (online mode) was conducted by DFPT, FCRI, Thoothukudi on 28.11.2020. This training was sponsored by EDII, Chennai and 25 people participated in this training.
32. Online Demo on "HPLC for Marine Products analysis" was conducted by DFPT, FCRI, Thoothukudi on 04.12.2020. This training was sponsored by EDII, Chennai and 60 people participated in this training.
33. "Freshwater Ornamental Fish Farming Technology" was conducted by DFEES, Dr.M.G.R FCRI, Ponneri on 23.12.2020 and 24.12.2020. This training was sponsored by ATMA- scheme (AD, Agri Nemili Block, Ranipet District) and 33 people participated in this training.
34. "Safe handling of Pesticides" was conducted by SOS International NGO on 23.12.2020. This training was sponsored by NIPHM, Hyderabad and 32 people participated in this training.

35. "Culture of Asian Seabass using Recirculating Aquaculture system" was conducted by DAQ, Dr.M.G.R FCRI, Ponneri between 18.01.2021 to 22.01.2021. This training was sponsored by NADP and 20 people participated in this training.
36. "Popularisation of EDII – MPBIF to the Allied Departments" was conducted by DFPT, FCRI, Thoothukudi on 29.01.2021. This training was sponsored by EDII, Chennai and 100 people participated in this training.
37. "Culture of Asian Seabass using Recirculating Aquaculture System" was conducted by DAQ, Dr. M.G.R FCRI, Ponneri between 22.02.2021 to 26.02.2021. Thistraining was sponsored by NADP and 20 people participated in this training.
38. "Vannamei Shrimp Farming Technology" was conducted by DFEES, Dr.M.G.R FCRI, Ponneri between 25.02.2021 to 26.02.2021. This training was sponsored by TNJFU and 16 people participated in this training.
39. "Biofloc fish / shrimp farming - Basics, problem focus and possibilities for adaption" was conducted by Dept of Fisheries Science, CoFE, Nagapattinam on 26.02.2021. This training was sponsored by TNJFU and 107 people participatedin this training.
40. "Enhancing the income of the Fishermen of Pulicat through Advanced Long Line and Gill Netting Techniques" was conducted by DFTFE, Dr.M.G.R FCRI, Ponneri on 01.03.2021. This training was sponsored by TNJFU and 50 people participated in this training.
41. Training program on MATSYA MITRA "Value added fish and fishery products" was conducted by DFPT, FCRI, Thoothukudi on 17.03.2021. This training was sponsored by EDII, Chennai and 20 people participated in this training.
42. Three Days Online Training on "Scientific Writing" was conducted by Dept of Basic Sciences, CoFE, Nagapattinam on 24.03.2021 to 26.03.2021. This training was sponsored by TNJFU and 49 people participatedin this training.

8.4. WORKSHOPS

1. "Recent Advances in Fish Nutritional Research" (online mode) was conducted by IFPGS, Chennai on 03.07.2020 and 04.07.2020. This workshop was sponsored by TNJFU and 600 people participated in this training.
2. "Status of Ornamental Fish Culture in Tamil Nadu" was conducted by DAQ, Dr.M.G.R FCRI, Ponneri on 30.07.2020. This workshop was sponsored by TNJFU and 160 people participated in this training.
3. "Harnessing PMMSY for Aquapreneurship development in Tamil Nadu" (online mode) was conducted by DFEES, Dr.M.G.R FCRI, Ponneri on 10.09.2020. This workshop was sponsored by TNJFU and 150 people participated in this training.
4. "Adoption of COVID-19 safety protocols in sea food sector with special reference to Pre-processing centers, Fishing vessels and Fishing Harbours as per WHO & MPEDA guidelines" was conducted by KKPCeSA, Parakkai on 21.10.2020. This workshop was sponsored by TNJFU and 50 people participated in this training.
5. "E - Workshop on Role of TNJFU Women Professionals in Fisheries and Aquaculture Development of Tamil Nadu" (online mode) was conducted by Dr.M.G.R FCRI, Thalainayeru on 23.11.2020, between 01.12.2020 to 05.12.2020. This workshop was sponsored by TNJFU and 32 people participated in this training.
6. "Chola Aqua 2021 (Self Sufficient Aquaculture: Prism of Possibilities in the Present and Future)" (online mode) was conducted by Dr.M.G.R FCRI, Thalainayeru on 11.01.2021. This workshop was sponsored by TNJFU and 166 people participated in this training.
7. "Application of Statistics Using MS Excel in Research" (online mode) was conducted by DFEES, Dr.M.G.R FCRI, Ponneri on 29.01.2021 and 30.01.2021. This workshop was sponsored by TNJFU and 19 people participated in this training.

8. "MATLAB Fundamentals and its application in Fisheries" was conducted by Department of Basic Engineering, CoFE, Nagapattinamon 04.02.2021 and 05.02.2021. This workshop was sponsored by TNJFU and 20 people participated in this training.
9. "Data Analysis in Fisheries using MS Excel and SPSS" was conducted by DFEES, FCRI, Thoothukudi between 09.02.2021 to 11.02.2021. This workshop was sponsored by ICAR-DG and 70 people participated in this training.
10. "Engine maintenance and safety of fishermen at sea" was conducted by DIVF, Ramanathapuram on 29.03.2021. This workshop was sponsored by Animal Husbandry Dairying and Fisheries Department and 24 people participated in this training.
11. "Engine maintenance and safety of fishermen at sea" was conducted by DIVF, Ramanathapuram on 29.03.2021. This workshop was sponsored by Animal Husbandry Dairying and Fisheries Department and 24 people participated in this training.
12. "Instrumental analysis of biochemical constituents in food" was conducted by DFQAM, FCRI, Thoothukudi. This workshop was sponsored by TNJFU and 80 people participated in this training.
13. "Why Small Scale Fish Processing Matters" was conducted by Dept of Fish Process Engineering, CoFE, Nagapattinam. This workshop was sponsored by NADP and 18 people participated in this training.
14. "8th Scientific Advisory Committee meeting" was conducted by KVK, Sikkal. This workshop was sponsored by ICAR and 40 people participated in this training.
15. "Extension Education Council Meet (Hybrid mode)" was conducted by DEE, TNJFU, Nagapattinam. This workshop was sponsored by TNJFU and 60 people participated in this training.

EXTENSION EDUCATION ACTIVITIES

9 EXTENSION EDUCATION ACTIVITIES

9.1. Extension Education

Recording of various fisheries programmes was conducted by Dr. MGR FCRI, Ponneri in cooperation with All India Radio, Chennai during 16.11.2020 and 17.11.2020.

9.2. Training Programmes

Name of the programme organized	Dates and duration	No. of Participants
Loach fish culture and live feed culture (Organized for Dept. of Fisheries official)	31.07.2020	6
Carp fish farming in cages (Three day district level farmers training) (ATMA)	16.02.2021 – 18.02.2021	40
Loach Fish Culture	24.02.2021	13
Recent advances in Aquaculture	17.02.2021 – 19.02.2021	33

9.3. Exhibition

DFEES and DFPT of Dr.MGR FCRI, Ponneri represented TNJFU by exhibiting a stall with value added fishery products on Fish food festival at Theevuthidal, Chennai during 26-28 February, 2021.

9.4. Awareness Programmes

World Habitat Day

World Habitat Day was celebrated on 05.10.2020. Poster competition was conducted on the theme "Housing for all".

World Food Day

World Food Day was celebrated on 16.10.2020 through Google meet. Dr. Usha Antony, Dean and Dr. Brimapureeswaran addressed the students. Activity was assigned to the students on the theme "Grow, nourish, sustain, together. Our actions are our future."

World Fisheries Day

The World Fisheries Day was celebrated by Dr. MGR Fisheries College and Research Institute in a grandeur manner. The programme started with the World Fisheries Day address by Dr. B. Ahilan, Dr. MGR FCRI, Ponneri. In his address, the Dean conveyed his World Fisheries Day wishes to all the students and staff and briefed about the current status and scenario of Fisheries Aquaculture in the country, conservation of resources and mitigation through measures like species diversification. This was followed by a speech on "Future in the hands of fisheries" by S.Abirami of Second B.F.Sc. Then, there was a special talk by Dr.Sheela Immanuel, Principal Scientist on the topic "Social skills: A Sensitization for Fisheries graduates to empathize and serve the Fisher community".

Awareness programmes was conducted on the ocassion of World Fisheries Day celebrations held at Mallipattinam wherein a lecture was delivered on the importance of World Fisheries Day and Better Management Practices and disease prevention measures to be adopted to improve shrimp production was given.

The "World Fisheries Day" was celebrated at CFNFT through online platform (Google Meet Link) on 21.11.2020. The Chief Guest Mr. Joseph Ragunath, Managing Director, Danica Aqua Exports Private Limited, Vishakhapatnam who conveyed his wishes to everyone for world fisheries day and gave a lecture on "Seafood Processing and Industry Perspectives". He outlined the scope of the industry and highlighted the need to address the untapped potential of the sector. He also emphasized the need for qualified personnel who can develop the industry with innovation. An E poster competition was conducted for the 2018 – 19 and 2019 – 20 batch students of B. Tech. Food Technology, of the College who participated in the event on the theme "Fish for Human Health''. The three best posters were selected and E- certificates were issued to the winners.

Agricultural Education Day

In accordance with the directions of Indian Council of Agricultural Research (ICAR), 'Agricultural Education Day' was celebrated at CFNFT through online platform on 11.12.2020. An online quiz program on 'Agriculture', consisting of 2 rounds was conducted and the II and III year students of CFNFT actively participated in the event and certificates were issued to the winners.

Online Financial Awareness and Consumer Training Program

An online financial awareness and consumer training program was conducted for the students of CFNFT on 23.12.2020. Mr. Jayabalan, Trainer, National Centre for Financial Education, Mumbai presided over the 3 hours session which provided an insight about the topics such as identity theft protection, responsible use of credit card, education loan borrowing principles, how to avoid impulsive buying, cashless transaction and how to manage income. The program, thus served as a platform for the students to gain knowledge on managing finance in a responsible and safe manner.

National Voters Day

In order to encourage more young voters to take part in the political process, the Government of India has decided to celebrate January 25 every year as "National Voters' Day". 11th National voters Day was observed at College of Fisheries Engineering, Tamil Nadu Dr. J. Jayalalithaa Fisheries University, Nagapattinam on 25th January 2021. This day was celebrated to spread awareness regarding effective participation in the electoral process among voters. Dr. R. Rajendran, Dean (i/c), College of Fisheries Engineering presided the event at college premises along with the Teaching, non teaching staff and UG (Final year) and PG students of College of Fisheries Engineering with social distancing. The slogan 'No Voter to be left behind' has been coined to further emphasis the focus on inclusiveness and the new voters would be provided with a badge with its logo "Proud to be a voter - Ready to vote".

S. No.	Title of the Programme	No. of Participants
1	World environment day	25
2	National Fish farmers day	15
3	Sadh Bavana Diwas Day	30
4	PoshanMaah – Nutri Garden	46
5	Makila Kisan diwas	35
6	Birth Anniversary of Gandhi	19
7	World Fisheries day	34
8	World Soil Day	162
9	National farmers day	30
10	Awareness in milk collection point during COVID 19	30
11	Summer management in livestock	32
12	Disaster management and drought mitigation measures	30
13	PoshanMaah – Nutri Garden	46
14	PoshanMaah – Nutri Garden	29
15	International Women Day	30

9.5. Advisory Services

A total of 1597 fish/shrimp farming related queries were received periodically from the farming community. The farm queries related to GIFT tilapia farming, vannamei farming, fish seed (carp) availability, training in fish culture, fish farming (carps), ornamental fish culture and live feed preparation, pangasius fish farming, fish and prawn pickle preparation, value added fish products, loach culture, aquaponics, backyard ornamental fish farming, feed preparation and management, spirulina culture were given for the benefit of the aquafarmers. Timely advices and technical guidelines were given by the staff of the university for the benefit of the farmers and fishermen. Technical consultancy and recommendation on disease diagnosis, treatment of fishes were also given to several farmers of the State. Subject on which the advisory was given and the number of farmers benefitted is represented in the following table:

Sl.No.	Subject	No. of farmers
1	Carp farming	473
2	Shrimp farming	52
3	Ornamental fish farming	182
4	GIFT Tilapia farming	494
5	Murrel farming	14
6	Loach farming	31
7	Biofloc based farming	107
8	Aquaponics	16
9	Open Sea Cage Culture	31
10	Live feed culture	5
11	Water quality management	103
12	Feed preparation and management	11
13	Disease management	29
14	Azolla cultivation	6
15	Value added fish products	35
16	Fish processing and packaging	8

9.6. Analytical Services

An amount of Rs.16,70,909/- was generated from the colleges and research stations of TNFU through analytical services. Dept. of Fish Quality Assurance and Management, FCRI, Thoothukudi generated a total income of Rs. 2,03,759/- was generated through analytical service of quality analysis of fish samples. Dept. of Aquatic Animal Health Management, FCRI, Thoothukudi generated Rs.23,200/- through sample analysis. Through soil and water quality analysis, Dept. of Aquatic Environment Management, Dr.M.G.R. FC & RI, Ponneri generated an income of Rs.5,400. A total number of 1410 samples were analysed in the self-financing scheme on "Establishment of shrimp disease diagnosis laboratory" and a total income of Rs.13,78,150/- was generated during the reporting period. State Referral Laboratory, Nagapattinam generated an income of Rs.39,800/- during the report period. Fish Processing Incubation Center, Keechankuppam generated Rs.7,500/- from its services. KVK, Sikkal generated an income of Rs.13,100 through soil and water quality analysis.

FINANCE

FINANCE 10

10.1 Finance and Accounts

During the year 2020-21, the grants totalling Rs. 6334.58 lakhs were received from the various sources as detailed below:

Sl. No.	Details	Amount (₹in lakh)
1.	Government of Tamil Nadu (Including TANII & NABARD loan assistance)	5357.62
2.	ICAR	116.21
3.	GoI	12.04
4.	NADP	732.50
5.	Other agencies	116.21
Total		**6334.58**

10.2. Revenue

State Government has released the following grants during the year 2020-21

Sl. No.	Details	Amount (₹ in lakh)
1.	Non – Plan Schemes	0.00
2.	Plan Schemes (State Expenditure)	4158.22
3.	Part – II Schemes	0.00
Total		**4158.22**

10.3. Indian Council of Agricultural Research

The ICAR has continued to support the University by releasing the following grants during thye reporting period

Sl. No.	Details	(₹ in lakh)
1.	100% Financed Schemes	19.90
2.	75% Financed Schemes	0.00
3.	Development Grants	96.31
4.	Others	0.00
Total		**116.21**

10.4. Government of India

Government of India has sanctioned grants for implementing various sponsored research programmed

Sl. No.	Details	(₹in lakh)
1.	GoI Schemes	12.04
Total		**12.04**

10.5. Other Agencies

Sl. No.	Details	(₹ in lakh)
1.	Other agencies	116.21
Total		**116.21**

10.6. Revenue Generated

S. No.	Details	(₹in lakh)
1.	Subscription of Meenvalachudarfrom Progressive Farmers / Visitors	0.10
2.	Training Fee	0.69
3.	Charges for Incubates (EDII-MPBIF)	0.07
4.	Skill development training fee (EDII-MPBIF)	0.13
5.	Quality analysis of fish samples (Sc. No: 45003)	2.03
6.	Photocopying charges and overdue charges	0.23
7.	Sale of vannamei	0.08
8.	Lab services	0.23
9.	University receipts (General fund)	26.29
10.	ARFF/PRFF receipts	3.21
11.	NADP – Kayalagam Receipts	0.08
12.	Transfer of funds	1029.54
13.	University Receipt	0.93
14.	Loans & Advances	1.71
15.	Deposit Receipts	43.65
16.	NABARD (Sc.No.19-101-02)	02.98

17.	NADP Scheme on State Referral Lab (Sc.No.19-10101)	00.98
18.	BBA (Fisheries Business Management (Self Finance) Sc.No.19-105	04.62
19.	MBA (Fisheries Entrepreneurship) (Self Finance) Sc.No.19-102	03.61
20.	Institute of Fisheries Biotechnology (Sc.No.19-103)	64.98
21.	TNJFU – Fisheries Business School (Sc.No.19-106)	20.52
22.	Sale of value added fishery products	0.11
23.	Fish Processing Incubation Facility	0.07
24.	TNJFU Referral Lab for Aquatic Animal Health, Nagapattinam	0.39
25.	Sale of Fish Feed	3.63
26.	Fish and shrimp sales	4.97
27.	Income generated through diagnostic services in the Self Financing scheme on Establishment of Shrimp Disease Diagnosis Laboratory (Sc.No.14020)	13.78
Total		**1229.61**

10.7. Expenditure

S. No.	Details	(₹ in lakh)
1.	Pay and allowances (Including Pension)	3292.87
2.	Recurring Contingencies	509.43
3.	Non- Recurring Contingencies (Including construction works)	754.73
4.	Others	0.00
Total		**4557.03**

MAJOR CONSTRUCTION WORKS

11 MAJOR CONSTRUCTION WORKS

S. No.	Name of work	Plinth Area	Amount (₹ in lakh)	Place	Name of the Scheme
1.	Construction of Co-working space	--	9.20	DFPT, FCRI, Thoothukudi	NADP
2.	Construction of Students Hostel (Boys and Girls) and canteen for Dr.MGR FCRI at Oradiyampulam, Thalainayeru	32527sq.ft.	715.00	Thalainayeru	Government of Tamil Nadu
3.	Construction of EB room for Dr.MGR FCRI at Oradiyampulam, Thalainayeru	732sq.ft.	20.00	Thalainayeru	Government of Tamil Nadu
4.	Construction of Wet Lab Building with Effluent water Treatment Plant to State Referral Lab	--	20.38	OMR, Vaniyanchavadi, Chennai	NADP
5.	Indoor Aquarium Facility at IFPGS	--	8.00	OMR, Vaniyanchavadi, Chennai	NADP
6.	Additional Amenities for Boys & Girls Hostel –Kitchen/cum Dining Hall of IFPGS	--	18.86	OMR, Vaniyanchavadi, Chennai	NABARD
7.	Fencing and Paver block works	1780 m	65.00	KVK, Sikkal	NABARD
8.	Goat farming Demo Unit	360 sq.ft.	1.38	KVK, Sikkal	NABARD
9.	Mushroom Production Unit	525 sq.ft.	1.50	KVK, Sikkal	NABARD
10.	Mushroom Production Unit	525 sq.ft.	2.10	KVK, Sikkal	ICAR & IIRR
11.	Institute of Paraprofessional Aquaculture Building	30000 sq.ft.	422.58	DIVA, Muttukadu	NABARD
12.	Establishment of Fisheries Training Institute at Mandapam	8000 sq.ft.	300.00	Ariyaman Beach, Mandapam, Ramanathapuram	NADP
13.	Establishment of Exhibition cum demonstration chambers	11 Exhibition chambers 802.5sq.ft.	9.00	CIVF, Thoothukudi	Government of Tamil Nadu
14.	Establishment of Deep sea Fishing Technology Training and Management Centre at Thengapatinam	800 sq.ft.	25.00	Fishing harbour, Thengapattinam	Government of Tamil Nadu
15.	Paraprofessional Institute of Fisheries College	6125 sq.ft.	150.00	Madhavaram milk colony, TNJFU campus Chennai	Government of Tamil Nadu

PUBLICATIONS

12 PUBLICATIONS

12.1.1. International

1. Palaniappan, A., U. Antony, and M.N. Emmamabux. 2021. Current status of xylooligosaccahrides: Production, characterization, health benefits and food application. *Trends in Food Science and Technology*, 111: 506-519. (NAAS Rating 17.08).
2. Arisekar, U., R. JeyaShakila, R. Shalini, and G. Jeyasekaran. 2020. Pesticides contamination in the Thamirabarani, a perennial river in peninsular India: The first report on ecotoxicological and human health risk assessment. *Chemosphere,* 267: 129251. (NAAS Rating 11.7).
3. Lidiya Wilwet., R. JeyaShakila, B. Sivaraman, B.B. Nayak, H. Sanath Kumar, A.K. Jaiswar and G. Jeyasekaran. 2021. Rapid detection of fraudulence in seven commercial shrimp products by species-specific PCR assays. *Food Control,* 124: 107871. (NAAS Rating 10.26).
4. Arisekar, U., R. JeyaShakila, R. Shalini, G. Jeyasekaran, B. Sivaraman and T. Surya. 2021. Heavy metal concentrations in the macroalgae, seagrasses, mangroves, and crabs collected from the Tuticorin coast (Hare Island), Gulf of Mannar, South India. *Marine Pollution Bulletin,* 163: 111971. (NAAS Rating 10.05).
5. Shalini, R., G. Jeyasekaran, R. JeyaShakila and U. Arisekar. 2021. Trace element concentrations in the organs of fish along the southeast coast of India. *Marine Pollution Bulletin,* 162 : 111817. (NAAS Rating 10.05)
6. Arisekar, U., R. JeyaShakila, R. Shalini and G. Jeyasekaran. 2020. Human health risk assessment of heavy metals in aquatic sediments and Fresh water fish caught from Thamirabarani River, the Western Ghats of South Tamil Nadu. *Marine Pollution Bulletin,* 159: 111496. (NAAS Rating 10.05).
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12.2. Technical Articles in Journals

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2. Manikandan, K., N. Felix, E. Prabu, G. Sathishkumar. 2021. Prebiotics and their role in aquafeeds, *Aquastar,* March, 87 – 92.

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16. Velselvi, R., S. Dasgupta, K.S. Vijay Amirtharaj, S. Bharathi. 2020. Biotic and abiotic stressors and its diagnostic methods in fishes. *Aqua Star,* October, 53 – 57.
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19. Puja Chakraborty, P.A. Muralidhar, K. Syamala, A. Malik, R. Somu Sunder Lingam. 2020. Captive breeding and farming of turtles. *Aqua International,* September, 52-56.
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23. Anix Vivek Santhiya, A., C. Lloyd Chrispin. 2020. Seed production and culture aspects of *Pangasius pangasius, Aquastar Magazine,* August, 46-47.
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26. Mariappan, S., R. Velmurugan, B. Ahilan. 2020. Artificial bait development for line fishing-A need and importance. *Aquastar,* May, 48-50.
27. Anix Vivek Santhiya, A., K.S. Vijay Amirtharaj, Cheryl Antony. 2020. Hormones used for induced breeding in cobia fish. *Kisan World,* April, 47 – 48.
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29. Lloyd Chrispin, C., S. Nirmala, A. Anix Vivek Santhiya, S. Agnes Daney Angela. 2020. Application of nanotechnology in aquaculture. *Aquastar Magazine,* April, 31-33.
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31. Somu Sunder Lingam, R., J. Stephen Sampath Kumar, P. Velmurugan, C. Lloyd Chrispin. 2020. Yolk Sac absorption in fish: a delicate stage in larviculture. *Aquastar Magazine,* March, 42-44.
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12.3. Research papers presented in seminars/ Symposium/Conference

12.3.1. International

1. Kesavan, D., S. Monikandon, M. Ramar, A. Hema. 2021. Natural dye-based bionano composite as halochromic sensor for monitoring the spoilage of packed fish. *International conference on Novel Engineering Materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
2. Deepika, A.M., K. Geetha, S. Monikandon, M. Ramar, D. Kesavan. 2021. Development of pocket-size colorimeter for on-Site determination of pH in aquaculture. *International conference on Novel Engineering Materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
3. Geetha, K., A.M. Deepika, S. Monikandon, M. Ramar, D. Kesavan, 2021. Portable Colorimeter for detection of copper in water samples. *International conference on Novel Engineering materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
4. Anbarasan, R., M. Balaji, S. Monikandon, D. Kesavan and M. Ramar. 2021. Eco friendly inhibitor for corrosion of TMT rod in marine environment. *International conference on Novel Engineering Materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
5. Ramar, M., D. Kesavan, S. Monikandon, S. Aarthi, R. Sabarmathi, 2021. Piezoelectric property from processed crustacean shells. *International conference on Novel Engineering Materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
6. Krishnakanth, M., R. Surendran, M. Ramar, D. Kesavan, S. Monikandon. 2021. Study on different metal coatings on shrimp shells. *International conference on Novel Engineering Materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
7. Surendran, R., M. Krishnakanth, M. Ramar, D. Kesavan, S. Monikandon. 2021. Study on piezoelectric properties of metal coated shrimp shells. *International conference on Novel Engineering Materials for Biomedical Energy, Environmental Sensing and other application* conducted by NIT Trichy, 11.03.2021 to 13.03.2021.
8. Kesavan, D., K. Madhan, S. Monikandon, M. Ramar, 2020. Development of pocket-size colorimeter water quality analysis. *Virtual National Conference on Recent Trends in Chemical Sciences*, SSN College of Engineering, Chennai, 26.11.2020 to 27.11.2020.
9. VinothiniVaz, M., D. Kesavan, S. Monikandon, M. Ramar, 2020. Real-time monitoring of spoilage of packed sardine fish using halochromic sensors. *Virtual National Conference on Recent Trends in Chemical Sciences,* SSN College of Engineering, Chennai, on 26.11.2020 to 27.11.2020.

10. Ramar, M., D. Kesavan, S. Aarthi. 2020. Effect of piezoelectric property from processed crab shell. *Virtual National Conference on Recent Trends in Chemical Sciences*, SSN College of Engineering, Chennai, 26.11.2020 to 27.11.2020.
11. Monikandon, S., S. Ravichandran and D. Kesavan. 2020. Mass balance of sediments and physico-chemical analysis of nutrients in Krishnagiri Reservoir. *Virtual National Conference on Recent Trends in Chemical Sciences*, SSN College of Engineering, Chennai, 26.11.2020 to 27.11.2020.
12. Monikandon, S. and S. Ravichandran. 2020. Role of Dam on nutrient flux and eutrophication in Krishnagiri Reservoir. *Virtual International Conference on Advances in Food and Agriculture Science and Technology*, Salem, 31.10.2020.
13. Kesavan, D., K. Madhan, S. Monikandon, M. Ramar. 2020. Portable device for aquaculture. *Virtual International Conference on Advances in Food and Agriculture Science and Technology*, Salem, 31.10.2020.
14. VinothiniVaz, M., D. Kesavan, S. Monikandon, M. Ramar, 2020. Halochromic chemical nose for monitoring of packaged fish spoilage. *Virtual International Conference on Advances in Food and Agriculture Science and Technology*, Salem, 31.10.2020.
15. Monikandon, S. and D. Kesavan, 2020. Role of integrated acclimation tanks on the survival rates of shrimp post larvae in grow out ponds. *Virtual International Conference on Advances in Food and Agriculture Science and Technology*, Salem, 31.10.2020.
16. Deepika, S., P. Padmavathy, A. Srinivasan, G. Sugumar and P. Jawahar, 2020. Toxicological effect of Triclosan (TCS) on protein content of the commercially important freshwater fish, *Labeorohita* (Hamilton, 1822). *Virtual conference on Aquaculture Techniques and Disease Management*, Sathyabama Institute of Science and Technology in association with College Dr.Jeppiaar Research Park - Centre for Ocean Research and Ministry of Earth Sciences – Earth Science and Technology Cell, 14.09.2020 to 17.09.2020.
17. Manimekalai, D., A. Srinivasan, P. Padmavathy, P. Jawahar, M. Rosalind George, A. Juliet Selvarani and P. Velmurugan. 2020. Persistent organochlorine residues in water and sediment samples collected from Thamirabarani River, South east coast of India. *Virtual conference on Aquaculture Techniques and Disease Management*, Sathyabama Institute of Science and Technology, 14.09.2020 to 17.09.2020.
18. Aswini, A., P. Padmavathy, V. Rani, R. Shalini, 2020. Pyrolysis of fruit peels: Assessing its efficiency in bioremediation of aquaculture waste. *Virtual conference on Aquaculture Techniques and Disease Management*, Sathyabama Institute of Science and Technology, 14.09.2020 to 17.09.2020.
19. Deepak, T., P. Padmavathy, V. Rani, D. Manimekalai, D. Inbakandan, 2020. Assessment of interrelation between water quality parameters and nutrient status for enhancing fish production in Manimutharu, Gadana and Vadakkupachaiyar reservoirs of Tamilnadu. *Virtual conference on Aquaculture Techniques and Disease Management*, Sathyabama Institute of Science and Technology, 14.09.2020 to 17.09.2020.
20. Subhashree Devasena, S., P. Padmavathy, D. Manimekalai, R. JeyaShakila, 2020. Simultaneous removal of inorganic nutrients and organic pollutants from aquaculture wastewater using fish scales as biosorbent. *Virtual conference on Aquaculture Techniques and Disease Management*, Sathyabama Institute of Science and Technology, 14.09.2020 to 17.09.2020.

12.3.2. National

1. Uma, A., P. Karthik, S. Ganagatharan, S. GaneshBabu and G. Rebecca. 2020. White spot disease caused by *Bacillus* sp. In *Penaeus vannamei* brooders. *Sixth National Conference to the Agricultural Scientific Tamil Society*, MSSRF, Chennai, 22.12.2020.
2. Saravanan, S. 2020. Gold Nano particles as potential tools for disease diagnosis. *Sixth National Conference to the Agricultural Scientific Tamil Society*, MSSRF, Chennai, 22.12.2020.

3. Velmurugan, R., S.Mariappan, M. Kalaiarasan. 2020. Design and operational procedures of long line in Pulicat coast. *Sixth National Conference to the Agricultural Scientific Tamil Society*, MSSRF, Chennai, 22.12.2020.

4. பார்த்திபன், பா.ழு கோ. சுகுமார்ழு க. மாசிலன், நா. முரளிதரன், து. சுகுமார் மற்றும் நீ.நீதிச்செல்வன் **2020.** கடற்பாசி தொகுப்பு சர்க்கரைகளாலான ஆல்ஜினேட் மற்றும் கராஜீனனில் இருந்து மக்கும் நெகிழி தயாரித்தல் மற்றும் இயற்பியல், வேதியியல் பண்புகளை மதிப்பீடு செய்தல். *Sixth National Conference to the Agricultural Scientific Tamil Society*, MSSRF, Chennai, 22.12.2020.

5. Ravikumar, T., N. Neethiselvan and B. Sundaramoorthi, 2020. தூத்துக்குடி கடலோரபகுதியின் மொட்டைக் கோபுரம் பகுதியில் பயன்படுத்தப்படும் மோட்டார் படகுகளிலிருந்து வெளியேறும் கரிமலவாயு மதிப்பீடு. *Sixth National Conference on Agricultural Scientific Tamil*, MSCRF, Chennai 22.12.2020.

6. ArulOli, G. 2020 Participatory adoption on Gender specific fish farming technologies among the rural fisherfolk of Tirunelveli. *Sixth National Conference to the Agricultural Scientific Tamil Society*, MSSRF, Chennai, 22.12.2020.

7. Uma, A., S.Ganesh Babu, S.Ganagatharan and G.Rebecca. 2020. Tilapia Lake Virus (TiLV) and *Proteus mirabilis* infection cause mass mortality in Tilapia farm (Tamil). *Sixth National Conference to the Agricultural Scientific Tamil Society*, MSSRF, Chennai, 10.10.2020.

8. பார்த்திபன், பா, க. சுரேஷ்குமார், சு. பாலசுந்தரி, து. சுகுமார்மற்றும் கோ. சுகுமார். **2020.** விளமீன் புரதமாவின் மூலம் பலப்படுத்தப்பட்ட ரொட்டிகளில் ஏற்படும் ஊட்டச்சத்தின் மதிப்பு மற்றும் நுகர்வோர் ஏற்றுக் கொள்ளும் தன்மை. Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

9. Ravikumar, T., B. Sundaramoorthi and N. Neethiselvan, 2020. தூத்துக்குடி கடலோரபகுதியின் இனிகோ நகரில் பயன்படுத்தப்படும் மோட்டார் படகுகளிலிருந்து வெளியேறும் கரிமலவாயுமதிப்பீடு. Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

10. Santhakumar,R.2020.Womenentrepreneurship in fish trade. Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

11. Shalini, R. 2020. தூத்துக்குடி கடற்பகுதி மீன்களில் உள்ள கனஉலோகங்கள் பற்றிய ஆய்வு. Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

12. கீர்த்திகா. க., பா. பத்மாவதி, வே. ராணிமற்றும் ரா. ஜெயஷகிலா. **2020.** தூத்துக்குடி கடலோரப் பகுதிகளில் இருக்கும் நுண்நெகிழிகள் பற்றிய ஆய்வு. Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

13. சுபஸ்ரீ தேவசேனா, சு.இ பா. பத்மாவதி, து. மணிமேகலை மற்றும் ரா. ஜெயஷகிலா. **2020.** விளமீன் செதில்களின் மூலம் இறால் பண்ணை கழிவுநீரின் சுத்திகரிப்புதிறன் பற்றிய ஆய்வு. Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

14. கதிரேசன், க., வே. ராணி, பா. ஜவஹர், பா. பத்மாவதி மற்றும் வி. விஜயராகவன். **2020.** விற்பனைக்கு பயன்படாத கலசல் மீன்களைப் பயன்படுத்தி நொதித்தல் முறையில் தயாரிக்கப்பட்ட திரவஉரத்தின் மூலம் கடல் நுண்பாசி குளோரெல்லா மெரைனா–வின் வளர்ச்சி பற்றிய ஆய்வு Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.via virtual mode.

15. அஸ்வினி, அ., பா. பத்மாவதி, து. மணிமேகலை மற்றும் ரா. சாலினி **2020.** இறால் பண்ணை கழிவுநீர் சுத்திகரிப்பில் பழத்தோல்கள் மற்றும் தேங்காய் நாரின் பயன்பாடு.Paper presented in *Agricultural scientific Tamil Society- 5th National conference*, 10.10.2020.

16. Muruganantham, M., A. Mathivanan and R. Uthyakumar. 2020. Evaluation of halophyte incorporated fish cutlet. *5th Tamil Conference on ASTS - Technical Session for Fisheries*, FCRI, Thoothukudi, 05.10.2020.

17. Arul Oli, G., Utilization level of ICT tools for fishing by the fishermen of Tamil Nadu Coast. *ASTS – 5th National ConferenceFisheries Science*, FC&RI, Thoothukudi, 10.10.2020.

18. Balasundari, S., R. Hinduja and S. Manikandan. 2020. Development and evolution of calamari protein based beverage mix as a functional food. *Second National e conference of Society of Krishi Vigyan*, New Delhi, Online, 26-28 September 2020.

19. Balasundari, S. and M. Praveen Raja. 2020. Immunity augmenting high protein beverage supplement formulated from marine food source in view of COVID -19 pandemic, (Book of Abstract: pp: 54). Sustainable Development: Challenges and Challenges post COVID-19, St. Aloysius Institute of Technology, Jabalpur, (*e-Conference*), 01-02, July 2020.

12.4. Research papers published in Proceedings of Seminars/Symposia/Conferences - Model is given below:

1. Athithan, S., 2021. Iron frame cage culture practice for lobster fattening in the open sea at Tharuvaikulam Under Institution - Progressive Farmer Tie Up Method (Success Stories) *Virtual National Workshop (CHOLA AQUA 2021)* on Self Sufficient Aquaculture: Prism of Possibilities for the Present and Future, S. Balasundari, S. Athithan, M. Menaga, Dr MGR FC&RI, TNR, 23 – 2.
2. Sunil Kumar S. Ail., DayalDevadas, C. Sudhan, C. K. Misra, AjitKeshavChaudhari, AshaLandge, KiranDube, B.B. Nayak, LathaShenoy.2021. Plankton diversity and dominance in three undrainable village pond aquaculture systems. *Proceedings of the National Academy of Sciences,* India Section B: Biological Sciences 91. Online First Articles
3. Sudhan, C., S.D. Kingston, P. Jawahar, S. Aanand, H.S. Mogalekar and Ajith Stalin, 2021. Length-weight relationships of six threatened freshwater fish species of southern Tamil Nadu, India, *Hydrobiology and Fisheries (Vol. 2)*. Dr. Vishwas BalasahebSakhare, Dr. Ashwini DnayndeoChalak, Dr. ShivajiGyanbaJetithor, Discovery Publishing House Pvt. Ltd., New Delhi (India), 20-30.
4. Sudhan, C., S.D. Kingston, P. Jawahar, S. Aanand, H.S. Mogalekar and Ajith Stalin, 2021. A Study on the Classical and Taxonomic Diversity Indices of Fish Fauna in Pechiparai Reservoir, Southern Tamil Nadu, *Hydrobiology and Fisheries (Vol. 2)*. Dr. VishwasBalasahebSakhare, Dr. AshwiniDnayndeoChalak, Dr. ShivajiGyanbaJetithor, Discovery Publishing House Pvt. Ltd., New Delhi (India), 40-63.
5. Ezhilrani, R., and Cheryl Antony, 2021. Impact on online social media information resources in academic libraries for digital environment. *Proceedings of International Conference on Management of Knowledge Resource Centres in the Networked Digital Environment: Trends, Challenges and Opportunities.* Rathinasabapathy, G., K. Veeranjaneyulu and V. Srinivasa, University of Agricultural Sciences GKVK. Bengaluru (Karnataka), 180-185p.
6. Manimehalai, N., P. Gurumoorthi, P. Rajkumar and R. Viswanathan, 2020. Optimal foaming condition for the preparation of Tamarind (Tamarindus indica) Fruit Pulp Foam: A computational approach with experimental validation, In*: Proceedings of International Conference on Recent Trends in Food Process Engineering Sector, December 10th & 11th,* Nagamaniammai, G. and P.Gurumoorthi, SRM Institute of Science and Technology,127-130.
7. Manimehalai, N., P. Gurumoorthi, R. Viswanathan and P. Rajkumar, 2020. Foam mat drying of tamarind (*Tamarindus indica* .L) Fruit Pulp: A comparative analysis of performance of two different foaming additives, In*: Proceedings of International Conference on Recent Trends in Food Process Engineering Sector, December 10th & 11th,* Nagamaniammai, G. and P.Gurumoorthi, SRM Institute of Science and Technology,127-130.
8. Manivel, K., N. Manimehalai, P. Karthickumar and K. Rathnakumar, 2020. Comparative analysis on dry and wet packing of ready to cook shrimp in retort pouches, In*: Proceedings of International Conference on Recent Trends in Food Process Engineering Sector, December 10th & 11th,* G. Nagamaniammai and P. Gurumoorthi, SRM Institute of Science and Technology,127-130.
9. Babiyola, D., 2020. Detection of fish freshness using artificial intelligence. *Proceedings of National Online Seminar on ICT in Fisheries*, June. Dr.A.Srinivasan, Dr.S.A.Shanmugam, Dr.R.Rajendran, Er.C.Mercy Amrita, CoFE, Nagapattinam, 13-16.
10. Mercy Amrita, C., 2020. IOT based monitoring system in aquaculture industries. *Proceedings of National Online Seminar on ICT in Fisheries*, June, Dr.A.Srinivasan, Dr.S.A.Shanmugam, Dr.R.Rajendran, Er.C.Mercy Amrita, CoFE, Nagapattinam, 3-5.
11. Durairaja, R., N.Jayakumar P. Jawahar and Ahilan, B. 2020. Length-weight relationship and condition factor of grey mullet, Mugilcephalus Linnaeus, 1766 from pulicat lake, Tiruvallur (dt), Tamil Nadu.*Proceedings of 5th Tamil conference organized by Tamil Nadu Agricultural Scientific Society.*
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