

ANNUAL REPORT 2019-2020



KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES

Panangad, Kochi- 682 506, Kerala, India

Phone: 0484 -2700964, 2700598, Fax: 0484-2703782

Website: www.kufos.ac.in



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KUFOS Annual Report 2019-2020

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Registrar, Kerala University of Fisheries and Ocean Studies, Kochi

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KUFOS Annual report is an In-house publication.

This is a report of activities of KUFOS during 2019-2020 period

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UNIVERSITY LOGO



This emblem signifies the mission, goals and motto of Kerala University of Fisheries and Ocean Studies. It symbolizes the co-existence of all forms of aquatic life and our responsibility to preserve the ecology and conserve the bio-diversity by judicious exploitation of aquatic resources for sustainable development.

The deep and light blue colours respectively represent the ocean and sky. The waves in the sea represent the dynamic nature of the sea with all its mystery and music. “All deep things are music” (Carlyle). The ocean is our planet's life belt. The very survival of the human species depends upon the maintenance of an ocean, clean and alive.

“For the sea lies all about us..... The continents themselves dissolve and pass to the sea.... In its mysterious past, it encompasses all the dim origins of life.... And receives in the end... the dead husks of that same life. For all at last return.... To Oceanus, the ocean river, like the ever-flowing stream of time, the beginning and the end” (Rachel L. Carson- The Sea Around Us, 1951).

FIAT PISCIS: Let there be fish. This is the literal translation of the Latin words “FIAT PISCIS”. The idea is to grow more fish with a view to ensuring food and nutritional security. As Lao-tsu, the Chinese philosopher, rightly said centuries ago: “Give a man a fish and you feed him for a day. Teach him how to fish, and you feed him for a lifetime”.

CHINESE NET: It is a passive gear operated by a group and it represents team work and co-operation, symbolizing the aspirations of the traditional fisheries sector.

SHIP: Used for exploring and exploiting oceanic resources, this fully equipped vessel symbolizes the modern sector, with its sophisticated technology.

NANSEN BOTTLE: Operated through a pulley and attached to the ship, it represents the concern for maintaining water quality and the need to contain water pollution.

SHRIMP: As a foreign exchange earner, this crustacean has tremendous importance in the fishery economy of Kerala.

PEARL SPOT: 'Karimeen' (*Etroplus suratensis*), the State fish of Kerala, represents the dainty delicacy of the State.

CONCH: A mollusc, the shell with its mathematical patterns, used for carrying holy water during rituals, is a sublime symbol with spiritual, aesthetic, artistic, rejuvenating and medicinal values.

OPEN BOOK: It symbolizes knowledge and it signifies disinterested search for truth by research and learning.



FROM VICE CHANCELLOR'S DESK

Prof. Dr. A. Ramachandran
Vice Chancellor

The financial year 2019-20 was really fruitful for Kerala University of Fisheries and Ocean Studies (KUFOS) in all sense. KUFOS has joined hands with more than 10 national and international institutions during the year for cooperation in the areas of research and academic. Memorandums of Understanding (MoU) have been signed with different organisations including Cochin Port Trust, Central Coastal Agricultural Research Institute (CCARI), Gender in Fisheries and Aquaculture (GFA), Kerala State Remote Sensing and Environment Centre (KSREC) and Swiss based organic food giant COOP. I am sure that the tie-ups with institutions of repute will open more avenues to students and researchers of KUFOS and give them more exposure in their area of study.

I am happy to share that KUFOS study on the Vembanad Lake, which revealed the presence of alarming levels of plastic in Kerala backwaters, has made positive impact to the society. The study reported in the 76.5 sq/km area of Alappuzha-Thannermukkom sector of Vembanad, the presence of 4,276 tonnes of plastic garbage in the bottom sediments, which works out to 55.9 tones per sq/km area. The resultshocked the planners, media and bureaucrats alike. This is one of the factors that triggered the Kerala Legislative Assembly's unanimous decision to enact a law, which came to force on 01, Jan 2020 to curb use of one time use plastic carry bags and similar plastic products.

Yet another major achievement of the KUFOS in 2019-20 was the successful hosting of the India's first Blue Economy Conference. The International conference on Blue Economy and Aquatic Resources -Aquabe 2019, which discussed the potential of development and growth of the economy through sustainable exploitation of sea and inland water resources, was held under the leadership of KUFOS during 28-30 November in Kochi. Around 500 stake holders representing various countries including researchers and policy makers took part in the conference.

Considering the importance of the India's first blue economy conference, the Ministry of External Affairs, Govt. of India and the Indian Ocean Rim Association (IORA), under the direct leadership of its Secretary General DrNomvuyoNokwe has organized the 2nd Somalia and Yemen Development Programme as a special session during AQUABE 2019 for the benefit of fisheries sector of Somalia and Yemen. The two day session was dedicated to capacity building of fisheries professionals from these two countries.

Another notable activity of KUFOS with public benefit orientation is a radio broadcast series, jointly executed with AIR Kochi FM, which is highly result oriented in creating public awareness on importance of blue economy as well as on the activities of KUFOS in the academic and research field. It is obvious that for development of science, not only the sincere efforts that matters, but also the exposure to the public and stakeholders in the concerned areas. I am immensely happy to mention that during this year, The All India Council for Technical Education (AICTE) has given its recognition to the B.Tech Food Technology course offered by the University.

I am also pleased to inform an International Centre for Mangroves is being established at Puduveyppu Campus during this year. This Station is enriched with virgin mangroves spread in about 50 acres and thickly populated with flora and fauna. This center would pave the way for scientists from all over the world to study and research on the various ecological aspects of this pristine and natural biological Treasure.

The School of Management and Entrepreneurship of this University is one of the best MBA study center in India and in this contest I am happy to mention that, KUFOS Management School will be elevated to a Centre of Excellence during the coming years. For this, the university has earmarked an amount of three crores rupees and three acres of land to construct an independent campus for the school.

In an effort to develop and accelerate aquaculture activities in the Malabar region, a Disease diagnosis lab with facilities for PCR based screening of pathogens have already started functioning in the KUFOS Regional Centre opened at Payyanur. The

farmers of the region will be immensely benefitted by the establishment, as at present they are depending on the laboratories at Cochin and Mangalore for testing shrimp seed for the presence of viral pathogens.

Considering the soaring demand for Indian prawns in the European food market, the KUFOS, Swiss based cooperative organic food giant COOP and the Indian Sea Food Exporters Association have reached a tri-party understanding for large scale organic farming of Black Tiger prawns in Kerala waters. Under this programme, KUFOS will extend technical know-how to the farmers on scientific organic farming with the technical and financial support of COOP for buying their Product

A protocol for the inland fisheries survey has been mooted to give scientific guidelines and methods for the yearly assessment of Inland Fisheries of Kerala. For this a collaborative survey and research will be conducted by scientists from KUFOS and Central Fisheries Institutes.

With a short span of about nine years KUFOS has identified the major research needs and gap to find a solution to the problems being faced by the fisheries and oceanic sector to improve the sustainability of these resources. A vibrant culture of research with various research projects are aimed at the integrated and sustainable growth of the fisheries sector, in partnership with the Government, industry, fish farmers and fisher folk.

I am also happy to inform that KUFOS has been operating 21 plan funded projects to the tune of Rs. 4 crores and 10 externally funded projects sanctioned by DST, NFDB, CMLRE and Kerala State Council are in operation with an outline of Rs.2 crores to enhance the aquaculture production, conservation of biodiversity and fish preservation and in value addition. I am much pleased to tell that The World Bank has accepted projects submitted by the faculty to the tune of Rs.18 crores in the area of Coastal Zone Management. A project worth of Rs.52 lakhs has been approved by UNDP for developing indigenous fisheries in a forest area with people's participation. 60 Research papers were published by the faculty during the the year 2019-20.



OUR HONOURABLE CHANCELLOR
SHRI. ARIF MOHAMMAD KHAN
HON'BLE GOVERNOR OF KERALA



OUR HONOURABLE
PRO-CHANCELLOR
Smt J MERCYKUTTY AMMA
Hon'ble Minister for Fisheries,
Harbour Engineering & Cashew Industry
Government of Kerala

INTRODUCTION



The Kerala University of Fisheries and Ocean studies (KUFOS) is an autonomous public funded institution established on 20th November 2010. The first Fisheries University in the country, KUFOS with its enchanting blue building stands in harmony with the greenery at Panangad, 12 km away from Kochi city, along the National Highway-66. It provides high quality instructional programmes in fisheries, ocean sciences and allied subjects. The University now has a sprawling campus of 75 acres in the headquarters at Panangad, brackish water and marine aquaculture area spanning 50 acres at Fisheries research station, Puduveypu and extensive 10 acres at Thiruvallom near Vizhinjam.

The College of Fisheries, Panangad under the Kerala Agricultural University was the only institution in the fisheries sector in the State imparting undergraduate professional degree programme. Kerala University

of Fisheries and Ocean Studies was established in November, 2010 by an Act of the Kerala State Legislative Assembly by delinking the College of Fisheries from the Kerala Agriculture University and started functioning on 01.04.2011. KUFOS was established for the development of manpower in fisheries and ocean studies and for ensuring proper and systematic instruction, teaching, training and research and extension exclusively in fisheries and ocean studies in the State of Kerala. This is the primary and principal institution of Kerala State for providing human resources with skills and technology required for sustainable developments as a Centre of Excellence for human resource development in Fisheries and Ocean Studies. It is the nodal agency to establish relationship with institutions at international level

KUFOS imparts quality education comparable with world class standards and giving significance to research oriented studies with effective meaningful and rewarding extension activities. With a view to producing technocrats of high calibre we provide highly qualified faculty, full fledged infrastructure facility and good linkages with reputed national and international institutes. The academic excellence is intended to be attained by undertaking graduate and post graduate teaching and research programmes in emerging disciplines of fisheries science. With a view to meeting the requirement of state and national priorities, we are introducing specialized courses in the needy areas thereby creating professionals and experts. Results of research emerging various disciplines leading to successful technologies need to be disseminated to the end users at the grass root level.

UNIVERSITY STATUTORY OFFICERS



VICE CHANCELLOR
Prof. (Dr.) A. Ramachandran



REGISTRAR (IN-CHARGE)
Dr. B. manojkumar

FINANCE OFFICER
Shri. Joby George P.



UNIVERSITY ENGINEER
Jayakrishnan P.S



CONTROLLER
OF EXAMINATIONS
(In-charge)
Dr. K.P.Subhashchandran



DIRECTOR
OF RESEARCH
Dr. T.V.Sankar



DIRECTOR
OF EXTENSION (I/C)
Dr. Daisy C. Kappen

THE UNIVERSITY

Kerala University of Fisheries and Ocean Studies (KUFOS) is an autonomous public funded institution established on 20th November 2010, and governed by the Kerala University of Fisheries and Ocean Studies Act, 2010. As per the Notification No.19540/Leg.II/2010/Law Dated 28.01.2011, the Government of Kerala have promulgated Act 5 of 2011 forming Kerala University of Fisheries and Ocean Studies (KUFOS).

KUFOS is the first Fisheries University formed in India and it comes under the Ministry of Fisheries. As per G.O. (P) No. 510/F & PD dated 10.05.2011 the Government of Kerala disaffiliated College of Fisheries, Panangad and Fisheries Station, Puduveypu from Kerala Agricultural University and these institutions became the part and parcel of the newly formed Kerala University of Fisheries and Ocean Studies w.e.f. 01.04.2011. The territorial jurisdiction of the University extended to the whole of the State of Kerala and the Headquarters of the University is at Kochi in Ernakulam District.

The Panangad campus, which is the Headquarters of the University, is 12 km away from Kochi city, along the NH 47 and sprawls in area of 85 acres. Fisheries Station, Puduveypu having an area of 50 acres is situated in Vypeen Island (90 58 – 100 N lat. and 760 10-760 12' E long.) on the North-Western bank of Cochin bar mouth, Cochin taluk. It is at a distance of about 2 km from Vypeen-Pallippuram Road. The Arabian Sea on the West and the Cochin barmouth on the South. Besides these campuses, the Govt. have allotted 10 acres of land at Thiruvallam, near Thiruvananthapuram for setting up a Regional Station.

Kerala University of Fisheries and Ocean Studies is the primary and principal instrumentality of Kerala State in providing human resources, skills and technology required for the sustainable development of Fisheries and Ocean Studies. It acts as a centre of excellence for human resource development in Fisheries and Ocean Studies and the nodal agency to establish relationship with institutions and universities functioning at National and International level. The mission of the University is to serve as a flagship University of higher learning through demonstrated and growing excellence in teaching, research, extension, training, scholarship and creative work in Fisheries and Ocean Studies, comparable with global standards that will benefit the country and the world at large.

His Excellency, the Governor of Kerala, is the Chancellor and the Hon'ble Minister for Fisheries is the Pro-Chancellor of the University. The chief executive body of the University is the University Governing Council. The Vice Chancellor is the principal executive officer who is assisted by the Pro-Vice Chancellor, Registrar, Deans of Faculties, Controller of Examinations, Director of Research, Director of Extension, Directors of Schools, Heads of Departments, and Finance Officer.

MISSION, VISION AND GOALS

Mission

The mission of the university is to serve as a flagship university of higher learning through demonstrated and growing excellence in teaching, research, extension, scholarship and creative work in fisheries and ocean studies, comparable with global standards that will benefit the country and the world at large.

Vision

- To produce professionally and technically competent manpower in Fisheries and Ocean studies to cater the needs of the fast developing sector.
- Develop entrepreneurship among the fisheries graduates by imparting hands on training and give opportunities to develop management skills through Fisheries Work Experience Programme.
- Undertake research and extension activities in the field of Fisheries and Ocean studies by undertaking research in frontier areas and by promoting interdisciplinary/ inter-departmental/ inter-institutional co-operation.

- Provide employment opportunities for the people especially fisher folk by imparting trainings on modern techniques of fishing, primary handling, preservation, production of value added fishery products, ornamental fish culture, hatchery production of seeds of various cultivable fin and shell fishes and their farming.
- Provide consultancy services so as to put into practice the technologies developed among the entrepreneurs and generate income for the institution.
- Achieve the mission and goals laid down by the University.
- Develop infrastructure facilities and inter-institutional co-operative programmes in order to make the campus the nucleus of the Fisheries and Ocean studies in the world.

Goals

- To further the advancement in learning and conduct research in fisheries, ocean studies and allied subjects .
- Impart education in fisheries and ocean studies and allied subjects.
- Formulate new courses and curriculum in fisheries and ocean studies sector in accordance with the technical advances in the respective fields
- Act as a nodal agency to establish relationship with institutions and universities functioning at national and international levels
- Act as a centre of excellence having leading role for HRD in Fisheries and Ocean studies
- Foster and encourage entrepreneurship in Fisheries and Ocean studies.

Objectives of the University

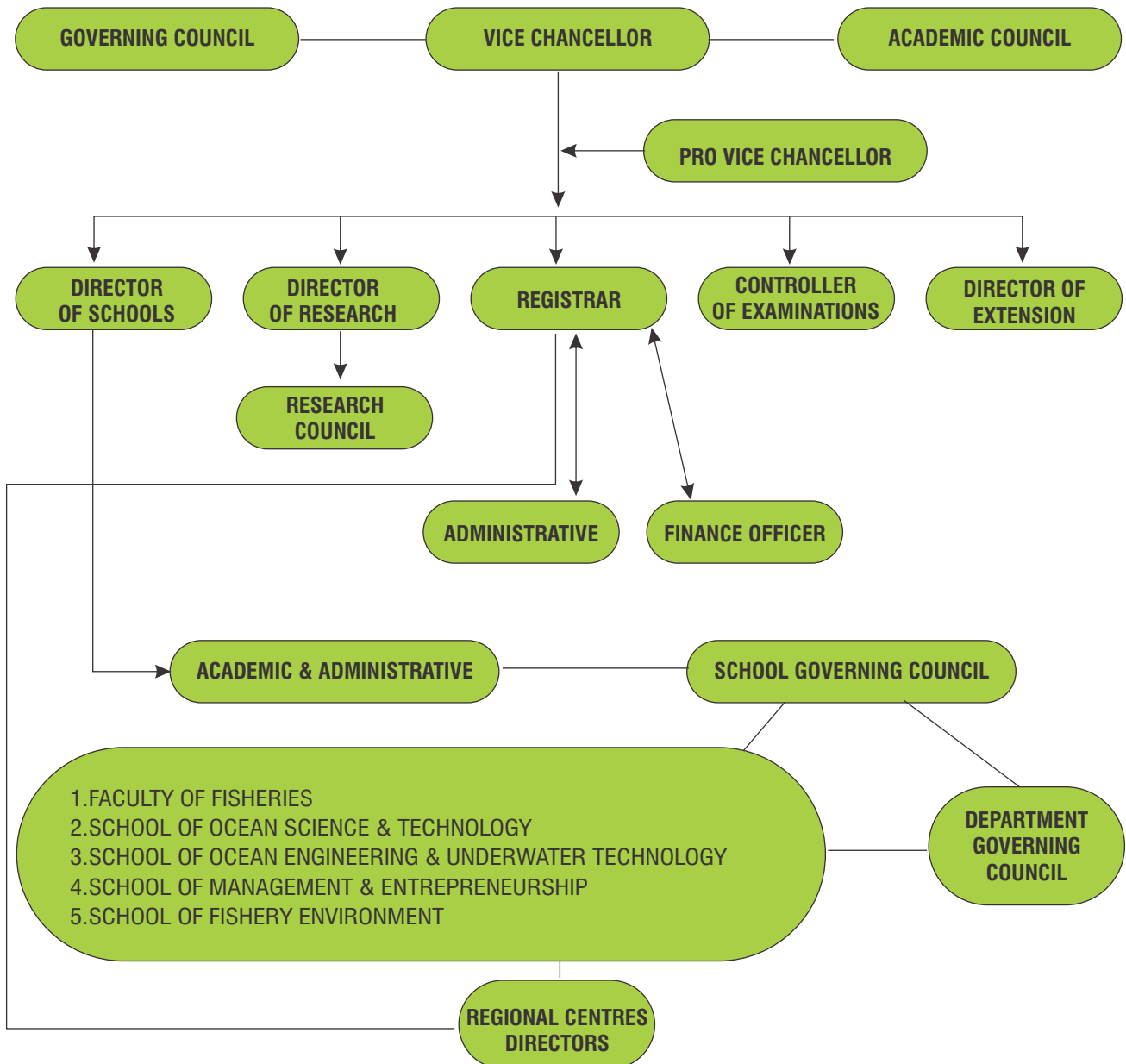
- (i) making provisions for imparting education in fisheries, ocean studies and other allied branches of learning and research scholarship;
- (ii) furthering the advancement of learning and conduct of research in fisheries, ocean studies and allied subjects;
- (iii) undertaking extension education programmes;
- (iv) to formulate new courses and curriculum in Fisheries and Ocean Studies sector in accordance with the technical advances in the respective fields;
- (v) to act as nodal agency to establish relationship with Institutions and Universities functioning in national and international level;
- (vi) to act as a centre of excellence having leading role for Human Resources Development in Fisheries and Ocean Studies sectors;
- (vii) to foster and encourage entrepreneurship in fisheries and ocean studies sector;
- (viii) to develop breeds and hybrids of ornamental fishes, prawns and oysters having features like production capacity, resisting power and good quality suitable to the environment of Kerala;
- (ix) to develop farming practices, fish feeds, fish disease control, resistant and vigilant steps suitable to the sustainable farming of ornamental fishes;
- (x) to preserve the fish bio-diversity of Kerala, to establish their intellectual property right to develop and utilize the possibilities of new technology like bio-technology;
- (xi) to conduct study and to record and preserve the study results relating to traditional fish technology, traditional knowledge, sustainable fish protection and to foster development;
- (xii) to strengthen research on fishing and related habitat and the relevant environmental factors; and
- (xiii) such other purposes as the University may deem necessary from time to time.

ORGANIZATION AND GOVERNANCE

Organizational Chart

The University is headed by the Vice Chancellor. The other officers of the University are the Pro Vice Chancellor, Registrar, Finance Officer, Controller of Examinations, Director of Research, Director of Extension, School Directors, University Engineer and University Librarian. The Governing Council is the supreme authority of the University, and the members of the Council are nominated by the Chancellor for a period of three years.

THE ORGANIZATIONAL CHART GIVEN BELOW GIVES AN OVERALL PICTURE OF THE SET UP



FUNCTIONING

The process involved in decision making starts at the level of the Department Governing Council. All permanent teachers of the concerned department are the members of the department governing council.

The Department Government Council shall design the syllabus and make proposal regarding the courses of study in the Department to the School Governing Council.

The Department Governing Council shall meet at least once in a month or as and when required to review the academic activities and to suggest need based curricular changes.

The School Governing Council functions above the Department Governing Council.

The Director shall carry out the decisions of the School Governing Council and co-ordinate the functions of the departments in the best interest of the School and the University.

The School Governing Council shall prescribe the qualifications of the examiners and approve the panel of examiners for external examinations.

The Director shall propose examiners for the conduct of external examinations.

The School Governing Council shall meet at least once in three months or as and when required to review the academic activities and to take decisions on need based curricular activities.

The School Governing Council shall have adequate financial powers for the functioning of the various departments under the School including power for strengthening the infrastructure, improving the teaching and research facilities and for maintaining and operating research vessel, if any.

Without prejudice to the provisions in sub-clauses mentioned above, the School Governing Council shall have the following additional powers, namely:-

- a) to propose the courses of studies in the institutions maintained by the University;
- b) to propose the qualifications of teachers in Schools and other institutions maintained by the University;
- c) to propose the qualifications of students for admission to the various courses of studies and to the examinations and the conditions under which exemptions may be granted;
- d) to make proposal for instruction and training in such branches of learning as it may think fit;
- e) to make proposal for the institution of Professorships, Readerships, Lectureships and other teaching and research posts required by the University;
- f) to propose schemes for the constitution or reconstitution of departments for teaching, research and extension education based on the proposals received from the Department Governing Council;
- g) to exercise such other powers and perform such other functions as may be conferred or imposed on it by the Act and Statutes, Ordinances and Regulations made thereunder.

The Research Council: Research Council shall consist of the following members, namely:

- (i) Director of Research who shall be the Chairman of the Council.
- (ii) Directors of all Schools;
- (iii) One senior faculty member who is a recognized guide from each School nominated by the Vice Chancellor;
- (iv) Director of each Regional Centre;

- (v) One representative of Indian Council of Agriculture Research;
- (vi) One representative of MOES;
- (vii) One representative of fishery industry nominated by the Vice Chancellor; and
- (viii) The Vice Chairman of the Planning Board, Government of Kerala or representative of the Board nominated by him.

(2) Research Council shall be responsible for formulating research policies, identifying thrust areas, advising possible funding agencies and monitoring and reporting the progress and quality of research to the Vice Chancellor from time to time.

The Academic Council

Subject to the provisions of this Act and Statutes, the Academic Council shall have the following powers, duties and functions.

- (a) To advise the University Governing Council on all academic matters;
- (b) Make regulations and to amend or repeal the same;
- (c) Approve the courses of studies in the institutions maintained by the University;
- (d) Approve the qualifications of teachers in schools and other institutions maintained by the University;
- (e) Approve the qualifications of students for admission to the various courses of studies and to formulate conditions under which exemptions may be granted;
- (f) Consider and approve proposals for the instruction and training in such branches of learning as it may think fit;
- (g) Consider and approve proposals for the institution of post of Professors, Associate Professors, Assistant Professors, Readers, Lectures and other teaching and research posts, required by the University;
- (h) Approve proposals for determining the degrees, diplomas and other academic distinctions that shall be granted by the University;
- (i) Decide which examinations of other Universities may be accepted as equivalent to those of the University and to negotiate with other Universities for the recognition of the examinations of the University;
- (j) Approve, modify or revise schemes for the constitution or reconstitution of departments for teaching, research and extension education based on the proposals received from the School Governing Council;
- (k) Maintain standards regarding post graduate teaching, research and extension education;
- (l) Give advice to the University in all academic matters and to submit feasibility report before the Governing Council regarding the academic programmes as recommended by the Senate in its annual meeting;
- (m) Exercise such other powers and perform such other functions as may be conferred or imposed on it by the Act and Statutes, Ordinances and Regulations made there under.

The GC and the Senate are the supreme decision making bodies in the University

4.1. Campuses of KUFOS



The campus at Panangad lies on the western side and eastern side of the National Highway. The total area of this campus is 87.73 acres. It includes the already developed area in which the administrative building, academic block, the quarters, hostels etc are located. Major portion of the campus is occupied by fish ponds and natural mangrove vegetation. The campus is bordered on the western side by the Vemband backwater system.

4.1.2. Fisheries Station, Puduveypu

The Fisheries Station is situated in Puthuveypu in the Vypeen island on the north-western bank of Cochin barmouth. It is at a distance of about 2 km from Vypeen-Pallippuram road and about 15 km away from the main campus. The Arabian sea on the west, the Cochin barmouth on the south and a canal emerging from the barmouth in the east form its main boundaries. On the northern side, the station joins the land proper of the main island. The Typical mangrove associations are characteristic of the area. This low lying area is subjected to the tidal influence of Cochin barmouth. The unique geographical position bestows on the station to embark on different aspects of fisheries research to open up new vistas. Major activities of this Station are teaching, research and extension. This Station also gives practical training in brackish water fish farming to B.F.Sc. and M.F.Sc. students of the University. The farm area is marshy, being daily inundated by saline and brackish water intrusions. Approved research programmes on commercially important fishes, shrimps and ornamental fish are being implemented. In addition, many awareness programmes are also given to entrepreneurs. The Station is also a centre for various varieties of mangrove and associated vegetation. The campus is covered by natural mangrove vegetation comprising about 18 acres and ponds. Administrative block, laboratory, hatchery etc. are located near the entry point of the campus.



4.1.3 Kannur Regional Centre , Payyanur

The University decided to start two regional centres one at north Kerala and another in the south Kerala. Accordingly university submitted plan proposals for the establishment of Fisheries Training, Extension and Research Centre at Kollam and Establishment of Aquaculture Training, Extension and Research Centre at Kannur during the year 2017-18. An amount of Rs 100 lakhs was allotted for each centre by the Government. On the basis of the request from Shri C. Krishnan, respected Member of Legislative Assembly representing Payyanur in the Kerala Assembly and Shri T.Purushothaman, President, kerala Aquafarmers Federation the Univeristy constituted a high level committee consisting of Dr K.Padma kumar, Pro Vice Chancellor, KUFOS as Chariman, Dr Suresh Kumar, GC Member, Shri Joby George, Finance Officer and Shri Jayakrishnan, University Engineer as members to inspect various places at Payyanur for the establishment of the Centre. The committee visited various locations in and around Payyanur and recommended establishment of the centre at Kandankali near Payyanur, The Univeristy requested the government to acquire the necessary land for the purpose.. Dr K.Padmakumar, Pro VC who was appointed as the special officer for the regional centre was relived from duties on 30/12/2017. The 50th Governing Council meeting held on 22nd December 2017 decided to appoint Dr.B.Manoj kumar, Associate Professor as the special officer. The committee for the centre was reconstituted with Dr S,Suresh kumar, Director, SOST, Shri Joby George, Finance Officer, Shri Jayakrishnan P.S, University and Dr B.Manoj kumar, Special Officer. This committee was authorized to make visits to suitable sites and also to identify suitable buildings for functioning of the Centre. An individual offered 10 acres of land free of cost for the establishment of the Centre at Payyanur. A committee consisting of Shri A.M,Shamseer, MLA and GC, Member, Dr S.Suresh Kumar, Professor and GC member, Dr S.M..Raffy, Assistant Professor and GC member and Shri Jayakrishnan P.S. University Engineer as convenor was constituted by the Vice Chancellor for inspecting the land. The committee inspected the land and found it unsuitable as it is a wet land and full of mangroves and the University will not be able to take up construction activity in that area. The Centre started functioning from **01/03/2018** in a rented building at Payyanur.

4.1.4. Regional Station, Kollam

The proposal for establishment of KUFOS Regional center at Kollam to the fund of Rs.100Lakh was approved by the Governing Council of the University under annual plan 2017-18.The main aim of the center is to extent academic, research and extension activities of KUFOS to the Southern Districts of Kerala.

During the years 2018-19 & 2019-20 Survey was conducted for locating suitable land for the purpose and two sites were identified. The site now under the occupance of ALIND, Kundara and the site under the possession of KSITIL were found preliminarily suitable for establishing the Kollam regional center. Several meetings and discussions were conducted with the said authorities for transferring the land to the University. The Hon. Fisheries Minister and Industries Minister Convened meetings with the head officers of KSITIL, ALIND, Revenue department, Survey department etc and finally the Government issued orders for transferring 10 acres of land under the custody of KSITIL to KUFOS for setting up the regional center of the University. A team of experts from the University constituted by the Vice Chancellor has visited the said site and approved the proposed building plan.

The land was then surveyed jointly by the Revenue and Survey department and the sketch of the proposed land was forwarded by the L. R Thahasildar, Kollam. The procedure for transferring the ownership is under way at present.

The civil works of the regional center were entrusted with the KSCADC and they have already invited tender for construction of the building.

In addition, a project of cage culture under KUFOS in Ashtamudi Lake of Manroe Island is also being implemented this year. The beneficiary groups were selected with the participation of the local body and the project is successfully going on under the technical and financial support of KUFOS.

5. ADMINISTRATION

The Vice-Chancellor is the Chief Executive Officer and the Registrar is the administrative head of the university. The Governing Council is the supreme authority of the University and that is supported by the Senate, Academic Council, Research Council, School Governing Council and Department Governing Councils. The day-to-day administration is carried out by the office of the Registrar under whom the Finance Officer, responsible for the financial management of the University functions. On the research side, the Directorate of Research, and on the extension side the Directorate of Extension coordinate the respective activities. Conduct and evaluation of examination and allied activities are vested with the Controller of Examinations. Academic activities related to the different Schools are controlled by the School Directors under whom the various Departments with the Heads of Departments function.

- KUFOS started functioning on 01.04.2011 with its Head Quarters at Panangad.
- The logo of KUFOS was released by Sri. K. Babu, the then Minister of Fisheries, Port & Excise, Govt. of Kerala, in a function organised at KUFOS on 20.06.2011.
- Two day National Consultative Workshop for Preparation of Vision Document and Strategic Plan of KUFOS was inaugurated by Sri. K. C. Venugopal, the then Union Minister of State for Power at International Hotel, Ernakulam on 28.07.2011. Dr. E. G. Silas, Former Vice Chancellor of Kerala Agricultural University launched the new website of the University during the function.
- The first Governing Council meeting of KUFOS was held on 28.03. 2012 at Thycaud Guest House, Thiruvananthapuram.
- The Certificate distribution function to distribute Provisional B F Sc Degree Certificates to the 2007 batch students, were held during the function. Sri. K. Babu, the then Hon'ble Minister of Fisheries & Ports had distributed the certificates.

5.3.1 Statutory Officers

Prof.(Dr.) A.Ramachandran	Vice Chancellor
Dr. B. Manojkumar	Registrar (In-charge)
Dr.K.P.Subhashchandran	Controller of Examinations (In-charge)
Dr. M.R.Boopendranath	Dean, Faculty of Fisheries
Dr. K Gopakumar	Faculty of Ocean Science and Technology Dean,
Dr.K.Vasudevan	Dean, Faculty of Ocean Engineering
Prof. (Dr.) KV.Thomas	Dean, Faculty of Climate Variability and Aquatic Ecosystem
Dr.S.Harikumar	Dean, Faculty of Management, Humanities and Social Sciences
	Dean, Faculty of Fisheries
Sri Joby George P	Finance Officer.
Dr.T.V.Sankar	Director of Research
Dr. Daisy C Kappen	Director of Extension (i/c)
Sri. P.S.Jayakrishnan	University Engineer

Authorities Of The University

The following are the authorities of the University

1. the Senate
2. the University Governing Council
3. the Academic Council

4. the Research Council
5. the School Governing Councils
6. the Department Governing Councils
7. the Faculties; and such other bodies as may specified by the Statutes.

Senate

The Kerala Government constituted the first Senate of the University as per Section 76 of KUFOS Act 5 of 2011. As per Section 10 of KUFOS Act, the Senate consists of Ex-officio Members (10 Nos.), Nominated Members (24 Nos.) and Elected Members (13 Nos.). The term of the Senate is five years from the date of its constitution by the Chancellor and the Chancellor shall reconstitute the Senate on expiry of its term. Senate shall meet at least twice a year on dates to be fixed by the Vice Chancellor and one of such meetings shall be called the annual meeting.

Members of Senate

- 1 The Principal Secretary to the Governor of Kerala, Kerala Raj Bhavan Thiruvananthapuram
- 2 Private Secretary to the Minister Fisheries and Harbor Engineering Room No: 532, 3rd Floor, South Sandwich Block Secretariat, Thiruvananthapuram
- 3 Adv. M.Swaraj MLA Tripunithura Assembly Constituency Tripunithura
- 4 Secretary to Govt. Fisheries Department Govt. Secretariat Thiruvananthapuram
- 5 Secretary to Govt. Higher Education Department Govt. Secretariat Thiruvananthapuram
- 6 Secretary to Govt. Finance Department Govt. Secretariat Thiruvananthapuram
- 7 Law Secretary to Govt. of Kerala Govt. Secretariat Thiruvananthapuram
- 8 Director of Fisheries Government of Kerala Vikas Bhavan Govt. Secretariat Thiruvananthapuram
- 9 Dr. K Gopakumar Dean, Faculty of Ocean Science and Technology
- 10 Dr. K Vasudevan Dean, Faculty of Ocean Engineering B1015, Satellite Township Kakkanadu, Kochi 682030
- 11 Dr. M R Bhoopendranath Dean, Faculty of Fisheries 18/1990-B "Manjusha", No. 10, 2nd Lane, Pratheeksha Nagar, Thoppumpady, Cochin-682005, Kerala
- 12 Dr. Devika Pillai Dept. of Aquatic Animal Health Management
- 13 Dr. K Dinesh Dept. of Aquaculture
- 14 Dr. M K Sajeevan Dept. of Fisheries Resource Management
- 15 Dr. K Ranjeet Dept. of Aquatic Environment Management
- 16 Sri. Mathew Sebastian Dept. of Fisheries Extension and Statistics
- 17 Dr. C D Suriyakala, Director School of Ocean Engineering and Underwater Technology
- 18 Sri. Arun Kumar M S Mannathumpattu House, Kallinmel P O, Mavelikkara, Alappuzha
- 19 Sri. P Vasudevan Arupathunazhi House, Vakirim Sulthanbathery, W
- 20 Adv. P K Khaleemuddeen Fathima Bhavan, Ponnani, Malappuram
- 21 Dr. V. Gabriel V M bhavan, Puthiyathura, Pulluvila PO Thiruvananthapuram- 695526
- 22 Smt. Vanaja KSreelekshmi, Elambichi, Thrikkariappur, Kasargode
- 23* Sri. T Peter Udayam, Valkiya Veli PO, Thiruvananthapuram
- 24 Sri. T Manoharan Manappattu, Neendakara PO, Chavara, Kollam
- 25 Sri. Sudheer M P Nayarassery House, Edavanakkad PO, Ernakulam
- 26 Adv. M K Uthaman Manappurathu House, Manappuram PO, Cherthala
- 27 Sri. B Sathyan, MLA Boys Land, ANRA 21A, Mattada, Thiruvananthapuram
- 28 Sri. K Dasan MLA Nikunjam, Muchukunnu PO, Kozhikode

Governing Council

As per letter No. GS 5-957/2011 dated 19.03.2012 of His Excellency the Governor of Kerala and Chancellor of KUFOS, the first University Governing Council was formed in accordance with the provisions contained in Section 76 of KUFOS Act 5 of 2011. The Governing Council is the supreme authority of the university and comprises of 23 members from among the category of Ex-officio Members (11 Nos.), Elected Members (4 Nos.) and Nominated Members (8 Nos.). At the outset, the Govt. have formed the KUFOS Governing Council by nominating 16 members. The University Governing Council shall be reconstituted every four years. The Governing Council shall meet at least once in a month on dates to be fixed by the Vice Chancellor after giving due notice to all members.

Members of the Governing Council (2016-2017)

The Vice Chancellor, KUFOS

Prof.(Dr.) A Ramachandran

0484 2703781 (Direct),
2700598, 2700964 ,
Fax:-91 484 2700337
vc@kufos.ac.in

Pro Vice Chancellor,
KUFOS

Prof.(Dr.) K Padmakumar

0484 2700596
pvc@kufos.ac.in

Secretary to Govt. of Kerala,
Fisheries Department, Govt. Secretariat,
Thiruvananthapuram

0471-2321129
0471-2333115 (Fax)
Prlsececy.port@kerala.gov.in

The Secretary to Govt. of Kerala
Higher Education Department,
Govt. Secretariat Thiruvananthapuram

(Mobile)
Fax – 0471-2332245
sec.higheredu.kerala@gmail.com

The Secretary to Govt. of Kerala
Finance Department
Govt. Secretariat Thiruvananthapuram

Tel.0471-2518292, 2327586
Fax 0471-2326990
prlsececy.fin@kerala.gov.in

The Law Secretary to Govt. of Kerala
Govt. Secretariat Thiruvananthapuram

Telephone – 0471-2518383
Fax-0471-2332955
secy@law.kerala.gov.in

The Vice President of
KeralaState Council for Science and
Technology and Environment
Sastra Bhavan, Pattom, Thiruvananthapuram.

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Dr. A.Gopalakrishnan
Director
CMFRI, Kochi

Tel No 0484 2394867
director@cmfri.org.in

Dr.N.R.Menon
Dean, Faculty of Climate
Vaiability and Aquatic Ecosystem, KUFOS

Tel No : 9847064322

Dr.M.R.Boopendranath
Dean, Faculty of Ocean Science and Technology
KUFOS

Tel No: 9447665875

Dr.M.S.Raju
Director, MSE, KUFOS

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Dr.|Anu Gopinath
Asst Professor, School of Fisheries Resource
Management & Harvest Technology, KUFOS

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anugowri@hotmail.com

Dr.S.M.Raffi
Asst Professor, School of Fisheries Resource
Management & Harvest Technolgy, KUFOS

Tel No : 9497393516

C.D.Suriyakala
Director, School of Ocean Engineering and
Under Water Technology, KUFOS

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Njarakkal,Ernakulam

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Sri Vidhu Rajan R
BFSC 2014 Batch Student, KUFOS

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Director, INCOIS, Hyderabad-500090

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Sri Manu C Pulikkal
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Cherthala- 688536

Tel No : 9447473349
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Sri Basillal
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Thankassery, Kollam

Tel No : 9446488320
Basillalhubert23@gmail.com

Sri Abraham John Tharakan
Shibumi, 11/814
Elphinistin Road
Fort Kochi

ajt@amalgamfoods.in

10 meetings of the Governing Council were held during 2017-18 Financial Year

Major Decisions of the Governing Council during the period

Academic Council

The Academic Council shall have general control over the academic matters of the University and be responsible for the maintenance of standards of instruction, education and examinations within the University and shall exercise such other powers and perform such other functions as may be conferred or imposed upon it by the Statutes. The Academic Council consists of 24 members from various realms. The Govt. constituted the first Academic Council. The following are the academic council members. 11 meetings have been conducted so far.

Academic Council Members

The Vice Chancellor, Chairperson	Prof.(Dr.) A.Ramachandran	0484 2703781 (Direct), Fax:-91 484 2700337
Director of Fisheries		0471-2303160 0471-2304355(Fax)
Director of CMFRI		0484-2394798
Director of CIFT		0484-2666880
Director of CMLRE		0484-2427790
Director of NIO		0484-2390814
Director of School of Fishery Environment & Head of Aquatic Animal Health Management	Dr. Devika Pillai	9446111033
Associate Professor and Head of Department of Processing Technology	Dr B.Manojkumar	9447525232
Director of School of Mgt. & Entrepreneurship	Dr. M.S. Raju	0484-2700598(Extn)30
Director of School of Ocean Engineering and Underwater Technology	Dr. C.D.Suriyakala	8281326577
Asst Professor, Department of Aquaculture	Dr.Binu Varghese	9447501644
Associate Professor and Head, Department of Aquaculture	Dr. K. Dinesh	9446032977
Associate Professor and Head, Department of Fisheries Resource Management	Dr.M.K.Sajeevan	9969651349
Asst Professor, Department of Aquatic Food Product and Technology	Dr.Safeena M.P	9995203185

Associate Professor, School of Management and Entrepreneurship	Smt.Alph Korath	9497793911
Associate Professor and Head, Department of Fisheries	Shri Mathew Sebastian	9495395305
Extension & Statistics	Akshaya Vijayan (FRM-2017)	9746429259
Students representatives	Ignatious Joseph (OST-2017)	7736460636

Research Council

The Research Council is responsible formulating research policies, identifying thrust areas, advising possible funding agencies and monitoring and reporting the progress and quality of research to the Vice Chancellor from time to time. The Research Council shall meet at least once in six months. Research Council has not yet been constituted during the reporting period.

Officers Of The University

As per Section 30 of KUFOS Act 5 of 2011, the following shall be the Officers of the University.

- i) the Chancellor
- ii) the Pro-Chancellor
- iii) the Vice Chancellor
- iv) the Pro Vice Chancellor
- v) the Deans
- vi) the Registrar
- vii) the Finance Officer
- viii) the University Engineer
- ix) the Librarian
- x) the Director of Research
- xi) the Director of Extension
- xii) the Controller of Examinations
- xiii) the Directors of Schools
- xiv) Heads of Departments

And such officers in service of the University as may be prescribed in the Statutes.

Faculties

There are five Faculties established in the University. The Faculties shall be the principal academic co-ordination authorities of the University in respect of studies and research in the subjects included on the Faculty and also in respect of studies and research in multi-disciplinary faculties. KUFOS has five Faculties and each Faculty comprises of the Dean, the Chairpersons of all Boards of Studies comprised in the Faculty, one member of each Board of Studies to be elected by the members of Boards of studies from among themselves out of whom at least one shall be a Post Graduate teacher and two subject experts preferably from outside the State, nominated by the Vice-Chancellor. The Dean shall be the Chairman of the Faculty. Various faculties were constituted as per the university order No.GA6/2265/15 dated 01.12.2015



I Faculty of Fisheries

Dean – Dr.M.R.Boopendranath ,Principal Scientist (Rtd), CIFT ,

Chairperson of all Board of studies comprised in the Faculty

1. Chairperson of Board of Studies of Dept. of Aquaculture and Biotechnology — Member
2. Chairperson of Board of Studies in Aquaculture Nutrition and Feed Technology - - Member
3. Chairperson of Board of Studies in Aquatic Animal Health Management Member
4. Chairperson of Board of Studies in Fisheries Resource Management –Member
5. Chairperson of Board of Studies in Fishery Hydrography - Member
6. Chairperson of Board of Studies in Preservation & Packing Technology – Member
7. Dr.T.V.Sankar, Director of Research, KUFOS
8. Dr.Suresh Kumar, Professor, Fishery Hydrography, KUFOS (Board of Studies Nutrition and Feed Technology) - Member
9. Dr.Mohamed Hatha, Professor and Head, Dept. of Marine Biology, CUSAT (Board of Studies : Aquatic Animal Health Management) - Member
10. Dr.K.Madhu, Principal Scientist, CMFRI, Kochi (Board of Studies ; Aquaculture & Biotechnology) - Member
11. Dr.K.Mohankumar Prof. Dept.of Meterology, CUSAT, Kochi (Board of Studies: Fishery Hydrography) - Member
12. Dr.Shivananda Murthy, Professor and Head, Dept. of Aquaculture, College of Fisheries, Mangalore - Member



II Faculty of Ocean Science and Technology

Dean - Dr.K.Gopakumar, DDG (Fisheries) Rtd., ICAR, Professor of Eminence, KUFOS

Chairperson of all Board of studies comprised in the faculty

1. Chairperson of Board of Studies in Applied Geo Science Member
2. Chairperson of Board of Studies in Biological Oceanography Member
3. Chairperson of Board of Studies in Physical Oceanography and Ocean Modeling –Member
4. Chairperson of Board of Studies in Food Science & Technology Member
5. Chairperson of Board of Studies in Marine Microbiology - Member
6. Chairperson of Board of Studies in Biotechnology and Bioinformatics - Member
7. Dr.T.V.Sankar, Director of Research, KUFOS
8. Dr.Kamalakshan, Kokkal, Joint Director, KSCSTE, Sasthra Bhavan (Board of Studies Geoscience) - Member
9. Dr.L.Harenduprakash, Director (Board of Studies in Physical Oeanography and Ocean Modeling)- Member
10. Dr.S.Girija, Director NIFPHATT, Kochi 17 (Board of Studies Food Science and Technology) - Member
11. Dr.K.V.Lalitha, Principal Scientist, CIFT, Kochi (Board of Studies Marine Microbiology) - Member

12. Dr.C.Justin David, Academic Consultant, Dept.of Biotechnology and Bioinformatics, KUFOS (Board of Studies Biotechnology and Bioinformatics) - Member
13. 14. Dr.Baban Ingole, Scientist F., NIO, Goa - Member



III Faculty of Ocean Engineering

Dean – Dr. K.Vasudevan, Emeritus Professor, Dept of Electronics, CUSAT

Chairperson of all Board of studies comprised in the faculty

1. Chairperson of Board of Studies of Remote Sensing Technology & GIS – Member
2. Prof.Sasikumar, Course Professor and Co-ordinator of PG Programme, K.M., School of Marine Engineering, CUSAT Cochin – 22 - Member
3. Prof.V.Sundar, Dept.of Ocean Engineering, IIT, Chennai - Member



IV Faculty of Climate Variability and Aquatic Ecosystem

Dr.K.V.Thomas, Scientist (Rtd), NATIONAL CENTRE FOR EARTH SCIENCE STUDIES (NCESS), AKKULAM, THIRUVANANTHAPURAM

Chairperson of all Board of studies comprised in the faculty

1. Chairperson of Board of Studies in Coastal Zone Management - Member
2. Chairperson of Board of Studies in Disaster Management - Member
4. Dr.Ramesh, Director, National Centre for Sustainable Coastal Management, Koodal Building, Anna University, Chennai -25 - Member
5. Dr.K.V.Thomas, Scientist F & Head of Marine Science (Rtd.), National Centre for Earth Science Studies, Thiruvananthapuram - Member



V Faculty of Management, Humanities and Social Sciences

Dean S.HARIKUMAR, Professor and Head, Department of Applied Economics, CUSAT

Chairperson of all Board of studies comprised in the faculty

1. Chairperson of Board of Studies in Economics & Statistics Member
2. Chairperson of Board of Studies in Legal Studies - Member
3. Chairperson of Board of Studies in Business Administration & Management - Member
4. Prof.K.R.Muraleedharan Nair, Former Dean, Faculty of Statistics, Cochin University of Science and Technology (Board of Studies ; Economic and Statistics) - Member
5. Dr.K.B.Balakrishnan, Associate Professor, NUALS, Kochi (Board of Studies ; Legal Studies) - Member
6. Prof. P. Sudarsanan Pillai, former Dean (CUSAT) (Board of Studies ; Business Administration and Management) - Member
7. Dr.P.T.Sreenivasan, Former Head, Dept. of Management Studies University of Madras - Member

Academic Programmes

KUFOS offers two under Graduate Programmes-B.F.Sc and B.Tch-Food Technology , 34 Post Graduate Programmes in various subjects and Ph.D Programmes in subjects related to Fisheries, Ocean Studies and Management under

- I. Faculty of Fisheries
- ii. School of Management and Entrepreneurship
- iii. School of Ocean Science and Technology
- iv. School of Fishery Environment and
- v. School of Ocean Engineering

Courses Offered

B.F.Sc

M.F.Sc

- a) M.F.Sc. Aquaculture
- b) M.F.Sc. Aquatic Animal Health Management
- c) M.F.Sc. Aquatic Environment Management
- d) M.F.Sc. Fish Nutrition and Feed Technology
- e) M.F.Sc. Fish Processing Technology
- f) M.F.Sc. Fisheries Engineering and Technology
- g) M.F.Sc. Fisheries Resource Management

M.Sc

- a) M.Sc. Biotechnology
- b) M.Sc. Climate Science
- c) M.Sc. Disaster Management
- d) M.Sc. Earth Sciences
- e) M.Sc. Environmental Sciences
- f) M.Sc. Food Science and Technology
- g) M.Sc. Marine Biology
- h) M.Sc. Marine Chemistry
- I) M.Sc. Marine Microbiology
- j) M.Sc. Physical Oceanography
- k) M.Sc. Remote Sensing and GIS
- l) M.Sc. Statistics

MBA

- a) MBA dual specialisation (Finance/ Marketing/ Human Resource Management/ Rural Management / Fisheries Business Management)
- b) MBA Energy Management

M.Tech.

- a) M.Tech. Integrated Coastal Zone Management
- b) M.Tech. Ocean and Coastal Safety Engineering
- c) M.Tech. Coastal and Harbour Engineering

B.Tech- Food Technology

LLM

- a) LLM (Maritime Law)

Diploma

- a) PG Diploma in Aquarium Science and Technology
- b) PG Diploma in Industrial Aquaculture
- c) Diploma in Brackish water and Marine Aquaculture

Ph.D. Programmes

Doctoral degree programmes leading to Ph.D. are being offered by the five Faculties. The Faculties are

- a) Faculty of Fisheries
- b) Faculty of Ocean Science and Technology
- c) Faculty of Ocean Engineering
- d) Faculty of Climate Variability and Aquatic Ecosystem
- e) Faculty of Management, Humanities and Social Sciences

Post Doctoral Fellowship (PDF) Programmes

Offered by the five faculties. The faculties are

- a) Faculty of Fisheries
- b) Faculty of Ocean Science and Technology
- c) Faculty of Ocean Engineering
- d) Faculty of Climate Variability and Aquatic Ecosystem
- e) Faculty of Management, Humanities and Social Sciences

Degree Programmes (Admitted through NEET/KEAM)

- a) Bachelor of Fisheries Science (BFSc.)
- b) B.Tech. (Food Technology)

10. Certificate Programme

- a) Certificate course on Computer Aided Designing and Drafting (CADD)
- b) Certification Programme on Entrepreneurship Development

Directors Of Various Schools

Sl.No.	Name	School
1.	Dr.Devika Pillai (i/c)	School of Fishery Environment
2.	Dr.S.Suresh Kumar, Professor& Director (i/c)	Ocean Science & Technology
3.	Dr.M.S.Raju	Management and Entrepreneurship
4.	Dr.C.D.Suriyakala	School of Ocean Engineering and Underwater Technology

Staff Details

- a. Section wise details of
(I) Teaching staff (Regular, Academic Consultants, Professor of Eminence, Contract & Guest)

Heads Of Departments

Sl. No.	Name & Designation	Department
1.	Dr.K.Dinesh, Associate Professor	Dept.of Aquaculture
2.	Dr.B.Manokumar, Associate Professor	Dept.of Fish Processing Technology
3.	Dr.Devika Pillai, Professor	Dept.of Aquatic Animal Health & Mgt.
4.	Dr.M.K.Sajeevan, Associate Professor	Dept.of Fisheries Resource Management
5.	Dr.V.K.Venkitaramani, Academic Consultant	Dept.of Biological Oceanography and Biodiversity
6.	Dr.V.K.Venkitaramani, Academic Consultant	Dept.of Biotechnology
7.	Dr.V.K.Venkitaramani, Academic Consultant	Dept.of Coastal Zone Management
8.	Dr.Prasada Rao, Academic Consultant.	Dept.of Physical Oceanography and Ocean Modeling .
9.	Dr.S.Rajendran, Academic Consultant.	Dept.of Applied Geoscience
10.	Dr.S.Rajendran, Academic Consultant.	Dept.of Remote Sensing Tech.&GIS
11.	Dr.S.Rajendran, Academic Consultant.	Dept.of Disaster Mgt.
12.	Dr.K.Gopakumar, Prof.of Eminence	Dept.of Food Science & Technology
13.	Dr.V.Ambilikumar, Associate Professor	Dept.of Business Administration and Management

Regular Teachers working in various Departments

Sl. No.	Name & Designation	Discipline	School
1	Dr. M.S. Raju Prof. & Director of School	Economics	Management Studies and Entrepreneurship
2	Dr. S. Shyama, Professor	Aquaculture	School of Aquaculture and Biotechnology
3	Dr.V. Ambilikumar Asso Professor	Business Management	Management Studies and Entrepreneurship
4	Dr.S. Suresh Kumar Professor	Biological Oceanography	Fisheries Resource Management and Harvest Technology
5	Dr. Devika Pillai, Associate Professor	Aquaculture	School of Aquaculture and Biotechnology
6	Dr.B. Manoj Kumar Associate Professor	Fishing Technology	Fisheries Resource Management and Harvest Technology

7	Dr. Daisy C. Kappan Associate Professor	Fishery Extension	Management Studies and Entrepreneurship
8	Sri.Mathew Sebastian Associate Professor	Statistics	Management Studies and Entrepreneurship
9	Smt. V. Malika Associate Professor	Statistics	Management Studies and Entrepreneurship
10	Smt. Alphy Korath Associate Professor	Fishery Statistic	Management Studies and Entrepreneurship
11	Dr. K. Dinesh Assoc. Professor	Aquaculture	Fisheries Resource Management and Harvest Technology
12	Dr. Ranjeet K. Associate Professor	Biological Oceanography	Fisheries Resource Management and Harvest Technology
13	Dr M. K. Sajeevan Associate Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
14	Dr. K.R.Salin Assistant Professor	Aquaculture	Fisheries Resource Management and Harvest Technology
15	Dr. Anu Gopinath Assistant Professor	Chemical Oceanography	Fisheries Resource Management and Harvest Technology
16	Smt. Safeena M.P. Assistant Professor	Microbiology	Aquatic Food Products and Technology
17	Dr. Blossom K.L. Assistant Professor	Food Science & Nutrition	Aquatic Food Products and Technology
18	Dr. Prabhakaran M.P. Assistant Professor	Fisheries Oceanography	Fisheries Resource Management and Harvest Technology
19	Dr. Chiranjiv Pradhan Assistant Professor	Fish Nutrition	School of Aquaculture and Biotechnology
20	Dr. Punnedath Preetham Assistant Professor	Biochemistry	Aquatic Food Products and Technology
21	Dr. S.M. Rafi Assistant Professor	Biological Oceanography	Fisheries Resource Management and Harvest Technology
22	Dr. K Jayalakshmi Assistant Professor	Fish Biology	Fisheries Resource Management and Harvest Technology
23	Dr. Rajeev Raghavan Assistant Professor	Fish Taxonomy	Fisheries Resource Management and Harvest Technology
24	Dr. Linoy Libini Assistant Professor	Aquaculture	School of Aquaculture and Biotechnology
25	Dr. Abhilash Sasidharan Assistant Professor	Fish Processing	Aquatic Food Products and Technology
26	Dr. Binu Varghese Assistant Professor	Fish Breeding	School of Aquaculture and Biotechnology
27	Dr. Rejish Kumar Assistant Professor	Aquaculture	School of Aquaculture and Biotechnology
28	Dr. Swapna P. Antony Assistant Professor	Fish Pathology	School of Aquaculture and Biotechnology
29	Dr. Pramila S. Assistant Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
30	Dr. Anwar Ali P.H. Assistant Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
31	Dr. Mithun Sukumaran Assistant Professor	Aquaculture	School of Aquaculture and Biotechnology

Academic Consultants

Sl. No.	Name & Designation	Department	School
1	Dr. V.K. Venkataramani	Biological Oceanography	Ocean Science and Technology
2	Dr. G Sadasivan Nair	Maritime Law	School of Management and Entrepreneurship
3	Prof. S. Rajendran	Applied GeoScience	Ocean Science and Technology
4	Dr. C.V. K. Prasada Rao	Physical Oceanography	Ocean Science and Technology
5	Dr. Justin David	Biotechnology	Ocean Science and Technology
6	Dr. N. Rajendran	Microbiology	Ocean Science and Technology
7	Dr. Benny N. Peter	Coastal Zone Management	School of Ocean Engineering
8	P.T. Lakshmanan	Marine Chemistry	Ocean Science and Technology
9	Dr. K.V. Thomas	Disaster Management	School of Ocean Engineering

Professor of Eminence

Sl. No.	Name & Designation	Department	School
1	Dr. K. Gopakumar	Food Science & Technology	Ocean Science and Technology
2	Dr. K.S. Purushan	Pandit Karuppan Chair	School of Management and Entrepreneurship
3	Dr.D.D. Namboothiri	Food Science & Technology	Ocean Science and Technology

Teachers on contract basis

Sl. No.	Name & Designation	Department	School
1	Dr. Mariya T. Cheeran	Rural Management	Management Studies and Entrepreneurship
2	Dr.Sneha Susan Simon	Food Technology	Aquatic Food Products & Technology
3	Sri. Hamid Hussain. V	Fisheires	Fishery Environment
4	Dr. Suresh P.R.	Economics	Management Studies and Entrepreneurship
5	Sri. Mahesh J	Geosciences	Ocean Science and Technology
6	Dr.Rachanamol S.	Microbiology	Ocean Science and Technology
7	Dr.Raghul Subin. S.	Microbiology	Ocean Science and Technology
8	Sri.Sarath Prasanth S.V.	Geosciences	Ocean Science and Technology
9	Arun Kumar V.S.	Ocean Engineering	Ocean Engg. & Technology
10	Sri.Sreenal Sreedhar	Remote Sensing	„
11	Smt. Ashamol V.		Management Studies and Entrepreneurship
12	Mary Jisha Francis	Physical Oceanography	Ocean Sciences and Technology
13	Sandhya Lekshmi	Aquaculture	Aquaculture and Biotechnology
14	Sri. George Joseph	Human Resource Management	Management Studies and Entrepreneurship
15	Sri. Rajeeve G.K.	Marketing Management	Management Studies and Entrepreneurship
16	Sri. Shajeera K.A.	General Management	„School of Management and Enterprenuership
17	Smt. Sanu Jacob	Agricultural Post Harvesting Technology	„Faculty of Fisheries
18	Dr.Rachel Fernadez	Aquaculture	Faculty of Fisheries

Guest Lecturers

Sl. No.	Name		
1.	Anju K. Joshi	9.	Nellengol Kavitha Karunakaran
2.	Praveen Kurian Thomas	10.	Saranya P.
3.	George Basil	11.	Renjith T.A.
4.	Dr. K.M. Mathew, Professor (Rtd.)	12.	Adv. Jayaprakash
5.	Sri. Sudhir	13.	Dr. V.N. Sanjeevan
6.	Dr. Rachel Fernandez	14.	Sruthy Baby
7.	Dr. Sanu Jacob	15.	Adv. Syam Kumar
8.	Sri. Ankur Nagori	16.	Adv. Smitha Chathanarambath
		17.	Dr. V.S. Sebastian
		18.	Dr. Benjamin P.V.

(I) Non - teaching staff

Name & Designation

Section

GENERAL ADMINISTRATION

Sri.K.M. Mohammed, Deputy Registrar & P.S. to Vice Chancellor	Vice Chancellor's Office
Shri Cleetus P.J, Assistant Registrar	Administration,,
Sri. P.R.Sreekumar, Assistant Registrar	„Academic and Examination
Smt. Meera. T. M., Section Officer (FC& D)	Administration
Sri.Shaheer, Asst. Section Officer	„ Administration
Sri.Vijayshine. K. V, Asst. Section Officer	„Finance
Sri.K.K. Faizal, Asst. Section Officer	„ Administration
Sri.Muhammed Shanar, Asst. Section Officer	„ Administration
Smt. Ajitha T.C, O.S. (Hr. Gr.)	Administration
Smt. Litty Fernandez, Office Supdt.	Administration
Sr. T.M. Devassy, Asst. Section Officer	Fisheries Station, Puduveyypu
Sri. Raju Kurian. M, Asst. Section Officer	„Finance
Smt. Vinu C.V., Asst. Section Officer	„ Administration
Smt. Deepthi. V., Asst. Section Officer	„ Administration
Sri.Ajith Kumar K.L., Asst. Section Officer	„ Administration
Ms.Chandana Chandrasekharan, Assistant	Administration
Shri Akhil V.S.Assistant	Academic & Examination
Sri.Anu S, Assistant	Finance
Smt.Anusha P.V, Assistant	Academic & Examination
Smt. Dhanya, Typist Sr. Gr	„ Administration
Sri. C. Pradeep, Deputy Registrar	Finance
Sri.T.K. Deleep, Section Officer	„ Administration
Smt. Elizabeth Edward, Asst. Section Officer	„ Administration
Smt. Thressiamma John, Office Superintendent	Administration

Smt. Seema M.C., Sel. Gr. Computer Assistant	Academic
Smt. Dhanya, Sel. Gr. Computer Assistant	Administration
Smt. Priya M, Asst. Section Officer	„Administration
Sri. A.V. Thomas, Sel. Gr. Computer Assistant	„Registrar Office
Sri. Vijayan Office Superintendent	Office of Pro Vice Chancellor
Sri. N.B. Sudheer, Section Officer &PA to Registrar	Office of Registrar
Smt. Tessy K. Thomas, Computer Programmer	Computer Lab
Sri.Kunjumammed. V. S., Assistant Librarian	Library
Smt. P. V. Vijayalakshmi, Reference Assistant	Library
Smt. Ramya Raveendran, Technical Assistant	„
Smt. Padma Narayanapillai, Farm Superintendent	Farm Staff
Sri. K.K. Reghuraj, Farm Manager Gr. I	„
Smt. Bindumol Abraham, Farm Officer Sel. Gr.	„
Sri.K.K. Sreekumar, Pump Operator	„
Sri. P. M Beneesh	Lab Assistant
Smt. P. S. Surya	„
Smt. Rajamma K.M.	„
Sri. K. Surendran, HDV Driver	Transportation Wing
Sri. N.C., Jose, LDV Driver	„
Sri. A.T. Gheevarghese, LDV Driver	„
Smt.Girijamma G., Matron Sel. Gr.	Hostel
Sri.K.J. Jose, Dupli. Machine Operator Sr.Gr.	Office
Sri.Lineesh K.R.	Office Attendant
Sri. Arun K.J.	„
Sri. Renjith.A.R.	„
Smt.Sindhu Devi (On deputation)	„

Director of Public Relations and Publication – Shir Raju E Raphael (on contract)

(I) Contract staff –	External Aided Project / Plan Project		
1. Sri. Rajeeesh P.M.	Research Fellow	10. Smt. Syamala V.K.	„
2. Smt. Mekha Bose	Tech. Assistant	11. Smt. Remya L. Sundar	Research Fellow
3. Sri. Sanju K.	Research Fellow	12. Sri. S. Thiruvarasu	„
4. Smt. Resmi M.R.	Field Assistant	13. Smt. Maneeja Murali	„
5. Smt. Shiny Peter	„	14. Sri. Sreenath V.R.	Senior Research Fellow
6. Smt. Anju M.S.	„	15. Smt. Divya V. Haridas	„
7. Smt. Salini N.S.	„	16 Smt. Anu Remanan	Research Fellow
8. Smt. Henamol A.A.	„	17. Smt. Gilgi M.G.	Nursery Attendant
9. Smt. Hema A.A.	„	18. Smt. Surya A.B.	SRF
		19. Smt. Sreeja P.V.	Field Assistant

20. Sri. Vineeth kumar	„	Accountant
21. Smt. Gayathri P.V.	Project Scientist	
22. Smt. Fejila Agnes	SRF	
23. Smt. Sreeparvathy	SRF	
24. Sri. Sam Peter	SRF	
25. Sri. Vipin Das P.V.	SRF	
26. Sri. Silesh M.S.	SRF	
27. Sri. Viji V.	SRF	
28. Sri. Harish K.C.	SRF	
29. Sri. Akhil P.B.	SRF	
30. Smt. Divya A.S.	Tech. Asst.	
31 Smt. Rekha K.R.	Office Asst-cum-	
32. Smt. Geeji M.T.	SRF	
33. Smt.Sneha K.G.	SRF	
34. Sri. RakeshC.G.	SRF	
35. Smt. Neenu Prakash	SRF	
36. Smt. Aswathy	SRF	
37. Dr. Elizabeth Carolin	Project Scientist	
38. Smt. Devi.	SRF	
39. Sri.Arjunan	SRF	
40. Sri.Renjith	SRF	
41 Sri. Hareesh V.N.	Fieldman (F)	

(I)Daily wage staff

1	Sri. Babu Paul	Assistant, Academic
2	Smt. Reshma V.S.	„
3	Smt. Simi Sajeevkumar	„
4	Smt. Sunila M.	Assistant, Administration
5	Smt. Shamila P.H.	„
6	Smt. Sajila V.L.	„
7	Smt. Praveena A.P.	Assistant, Finance
8	Smt. Preetha V.N.	„
9	Smt. Sajila V.L.	„
10	Smt. Meharunnisa A.	„
11	Smt. Praveen C. Prasad	Assistant, Management Studies
12	Smt. Salini T.S.	Assistant, Processing Dept.
13	Smt. Bindhu P.P.	Assistant, SOST
14	Smt. Shabeera	Assistant, Directorate of Research
15	Smt. Sheela M.T.	Computer Assistant, Acad.
16	Smt. Sindhu K.S.	Class IV
17	Smt. Sreedevi Bijumon	„
18	Smt. Omana N.K.	„
19	Sri. Ramesh A.K	Driver cum Office Attended
20	Sri. Bijumon K.K.	„
21	Sri. Anoop G. Menon	„
22	Sri. Harikrishnan V.M.	„
23	Sri. Jayapalan K.P.	Bus Attendant
24	Smt. Swathylakshmi	Field Assistant, F.S.Puduveypu
25		Lab Assistant
26	Sri. Saneer N.S.	Field Assistant
27	Sri. Nazeer T.K.	Pump Operator
28	Sri. Sasidharan Pillai	Security Guard.



ADMINISTRATIVE BLOCK

SCHOOL OF OCEAN SCIENCE AND TECHNOLOGY

Staff strength

Teaching

1. Dr. S Suresh Kumar,	Professor & Director
2. Dr. K Gopakumar,	Professor of Eminence
3. Dr. V K Venkataramani,	Adjunct Professor
4. Dr. S Rajendran,	Adjunct Professor
5. Dr. D D Namboodiri,	Adjunct Professor
6. Dr. P T Mathew,	Adjunct Professor
7. Dr. M V Joseph,	Adjunct Professor
8. Dr. T. Pankajakshan,	Adjunct Professor
9. Dr. Basil Mathew,	Adjunct Professor
10. Dr. Maya Raman,	Associate Professor
11. Dr. Jenny Ann John,	Assistant Professor
12. Dr. Nevin K G,	Assistant Professor
13. Dr. V P Limnamol,	Assistant Professor
14. Dr. Phiros Shah,	Assistant Professor
15. Dr. K Manjusha,	Assistant Professor
16. Dr. S Sugunan,	Adjunct Faculty
17. Dr. P V Joseph,	Adjunct Faculty
18. Dr. Benny N Peter	Adjunct Faculty
19. Dr. CVK Prasada Rao	Adjunct Faculty
20. Dr. Justin David,	Assistant Professor on contract
21. Dr. Sirajudheen T K,	Assistant Professor on contract
22. Dr. Sruthi Thalayappil RS	Assistant Professor on contract
23. Ms. Sara Baker Fenn	Guest Lecturer
24. Ms. Vrindha P K	Guest Lecturer
25. Ms. Megha Dixon	Guest Lecturer
26. Ms. Haritha Y S	Guest Lecturer
27. Dr. Jincy Ann Jomy	Guest Lecturer
28. Dr. Sreena Raj	Guest Lecturer
29. Dr. Adithya V. S	Guest Lecturer
30. Dr. Honey H Das	Guest Lecturer

Non Teaching Staff

1. Mr. Shaheer S, Section Officer
2. Mrs. Divya Joy, Assistant on contract
3. Mrs. Anusree, Assistant on contract
4. Mr. Manu C M, Assistant on contract
5. Ms. Neethumol K K, Tech. Asst. on contract
6. Ms. Aarathi S., Lab Assistant
7. Ms. Athira T Rameshan., Lab Assistant
8. Ms. Rakhi O., Lab Assistant

Student strength

Sl. No.	Programme	I Year.	II Year	Total
1	Marine Biology	30	32	62
2	Physical Oceanography	9	11	20
3	Food Science and Technology	35	32	67
4	Marine Microbiology	24	24	48
5	Biotechnology	18	14	32
6	Earth Sciences	9	11	20
7	Marine Chemistry	15	14	29
8	Ph.D.	18		115

Plan for the current academic period

- Procurement of state-of-the-art food processing and analytical equipments to facilitate training for graduate, postgraduate and research students
- Conduct Industrial Advisory Board Meeting to upgrade and improve the syllabus. Also, to bridge the gap between industry and academia
- Conduct Board of Studies Meeting to upgrade and improve the syllabus. Also, to make it more practical.
- Conduct Industrial Visits/ R & D labs for students to get first-hand knowledge
- Conduct HACCP and other relevant training programmes
- Earth Science and Physical Oceanography Laboratories have to be developed further. More specimens for the Geological Museum have to be acquired. Equipment like Proton Precession Magnetometer (PPM) have to be procured for imparting practical knowledge in the geophysical field surveys.
- To have better collaboration with the National Centre for Earth Sciences Studies (NCESS), Trivandrum as KUFOS has MoU with NCESS. Likewise, it is proposed to have more collaborative work with INCOIS, Hyderabad also as per the MoU signed with them.

Programmes organized by the School

- Professor Georgy Shapiro from University of Plymouth, England visited the School during 2019 July 2019 and all the students from Physical Oceanography attended the seminar on NEMO ocean modelling provided by Professor Georgy Shapiro.
- Conducted Board of Studies meeting of all the subjects
- First PTA meeting to update the parents was organized on July 11, 2019
- Research study on classification of rice varieties based on its GI content undertaken as part of Ph.D programme of Ms. Febina, in collaboration with Dr. Tom Babu of Silverline Hospital, Cochin.
- Gurupur Sadananda Prabhu Award for Excellence in Food Science and Technology for the year 2018-19 was awarded to Anjana Besant (1st rank holder) by Honorable Vice Chancellor Prof. Dr. A. Ramachandran and Mr. Joby George on 19th August 2019.
- M.K.K. Nair Fellowship awarded to Ms. Hridya Narayan and Ms. Alphy G. Catherine for their academic performance by Honorable Registrar, Dr. B. Manoj Kumar and Director of Research, Dr. T. V. Sankar on 19th August, 2019
- Ms. Krishna K. was awarded for her highest merit in the entrance exam by Dr. S. Suresh Kumar, Director, SOST on 19th August 2019
- Physical Oceanography department conducted the Lecture Series at School of Ocean Science and Technology, KUFOS during August 2019 on the topics Vagaries in Monsoon: Role of Indian Ocean by Dr. M R Ramesh Kumar and Indian Monsoon Process & Variability by Dr. Pankajakshan Thadathil
- Ms. Akila P. James received cash prize by Honorable Vice Chancellor Prof. Dr. A Ramachandran and Dr. K. Gopakumar, Professor of Eminence, KUFOS (instituted by Dr. Balagopal, Research Manager, Sloane Katering Memorial Cancer Institute, New York in honor of his father Dr. K. Gopakumar, Professor of Eminence, KUFOS).
- Dr. Jenny John and Dr. P. T. Mathew, visited KSCADC, Kollam on 5th September 2019, to study the feasibility of installing a solar dryer on 250kg capacity at KUFOS.
- In connection with prevention of COVID-19 spread, SOST has prepared 50 litres of hand sanitizer in March 2020 and distributed to university employees and offices in all campuses under KUFOS. Chitosan, which has antibacterial and antiviral properties, was used as an ingredient of the sanitizer.
- Conducted National webinar on Emerging Technologies and Entrepreneurship in Dairy and Meat Sectors on 5th and 6th November, 2020, organized by SOST and CASRED, KUFOS.
- Conducted webinar on Practical essentials of ICP and selected chromatography techniques on 12 November, 2020.
- Conducted Inter-University Students' competitions to commemorate World Food Day on Oct 16, 2020.

- Workshop organized by AFST (I) Cochin Chapter, KUFOS and All Kerala Caterers Association, Ernakulam District Committee on 15th October 2019 on the topic Prospects and Challenges of Catering Industry in Kerala in connection with World Food Day Celebrations. Mr. V. K. Varghese was honored for his contributions.
- Aquabe 2019 Pre-Conference Workshop on VPA Kerala's Coast 2.0- Producing and using Visual Problem Appraisal (VPA) for Deliberative and Participatory Water Governance in Kerala, India was jointly organized by at Kerala University of Fisheries and Ocean Studies (KUFOS) and Van Hall Larenstein University of Applied Sciences, Han University of Applied Sciences, TU Delft University and Wageningen University and Research on November 26, 2019 (Dr. Maya Raman -Convener and Dr. Jenny John - member).
- Soft Skill Development and Career Orientation Programme organized by the Department on 16th January 2020. Mr. Saurab K. Pandey, ISAB, New Delhi provided the training.

Academic achievements of Faculty

- Dr. K. Manjusha Won best poster award in the category Environmental Science, Forestry and Wildlife in 32 nd Kerala Science Congress –Nefla.N, K. Manjusha, Anemol V.S and Sreedevi N. Kutty. 2020. Diversity of Yeasts from the mangroves of Mulavukadu: A pre and post Kerala floods study.
- Dr P T Mathew, Head of the Department was selected as a member of FSSAI Scientific Panel on Fish and Fish Products in January 2020.
- Dr. P. T. Mathew was an Expert for the Selection of professionals in the Dept. of Biochemistry & Nutrition, CIFT
- Chairman, ASRB has appointed Dr D D Nambudiri as Chairman, Assessment Committee for Technical Personnel of CIFT, W. Island, Cochin. He has chaired Assessment Committee meeting on 08.09.2020
- Chairman, ASRB has appointed Dr D D Nambudiri as a member of the Departmental Selection Committee for promotion of Scientists of CIFT, W. Island, Cochin. He has attended meeting on 27.10.2019.
- Dr. K Gopakumar served ad Chairman Research Advisory Committee of CIFE Mumbai , Deemed University of ICAR , New Delhi
- Dr K Gopakumar served as Member Management Committee of CIFE, Mumbai
- Dr K Gopakumar. Served as a Member of the Industrial Advisory Board, B. Tech. Food Engineering, St. Git Autonomous University (under UGC) Kottayam.
- Dr K Gopakumar served as Member Syllabus Revision committee of St Gits University Kottayam for Dept. Of Food Engineering., Kottayam.
- Dr. K Gopakumar Served as Jury of National Awards selection Committee of National Academy of Agricultural Sciences New Delhi for 9 (Nine) awards.

- Dr. K Gopakumar served as a Member of the Advisory Board of Industrial Fisheries , CUSAT, Cochin.
- Dr. K Gopakumar continue to Serve as Advisory member for Asha Bio Chem Kerala and Perma Pharmaceutical New Delhi.
- Dr K Gopakumar Served as Chairman for Assessment of Scientists in CIFT Kochi for all disciplines in Fisheries Technology for Agricultural Scientists Recruitment Board, New Delhi.
- Dr K Gopakumar served as a member for the first Board of Studies Meeting of the Department of Food Technology, Saintgits College of Engineering
- Prof. S. Rajendran, Head, Department of Earth Sciences has been included as one of the group-heads by KUFOS in the ‘Task Force to Study impact of rivers/dam flood inundation and to submit mitigation measures in Kerala river basin to the Government of Kerala’ since September 2018. Accordingly, a detailed work entitled, “ Recent Rainfall and Related Landslides of Kerala” was contributed in the elaborate report, “IMPACT ANALYSIS OF 2018 KERALA FLOODS” submitted by KUFOS to the Government of Kerala on 20-11-2019.
- Dr. Maya Raman-Mentor of YIP project. Students (4th Semester-Ms. Meenu and Ms. Srilekshmi) were selected for presentation at District and State Level.
- Dr. Maya Raman was appointed as Member of Board of UG Studies in Marine Sciences and Faculty of Marine Sciences, Cochin University of Science and Technology.
- Dr Jenny Ann John was appointed as Member of Board of Studies in Food Technology under the Faculty of Science, University of Calicut for a period of three years from 11th February, 2020
- Dr. Maya Raman, Mentor for students who received recognition for the International Student Competition (Foodfactory-4-Us) conducted by European ISEKI Food Association
- Dr. D. D. Nambudiri participated as an assessor in the one-day Training on FSSAI Advanced (Level 2) Certification Programme on Food Manufacturing for Food Safety Supervisors. Venue of the Training was Hotel “Span International” Rajaji Road, Ernakulam Cochin – 682306 on 30 Mar 2019 ,9 am to 6 pm
- Dr. K. Gopakumar participated as the scrutiny and award selection team for ICAR
- Dr. P.T. Mathew attended Board of Studies Meeting in Food Science and Technology, University of Calicut, June 13, 2019
- Dr. Maya Raman and Dr. Jenny John participated in 4-days (19-22 November, 2019) Laboratory Quality Management System & Internal Audit as per ISO/IEC 17025:2017 NABL requirement at IIQM, Jaipur.
- Research Guideship obtained by Dr. Jenny John and Dr. Maya Raman
- Dr. K. Manjusha was selected as the member of the Board of Examiners for PhD Thesis Adjudication Yenepoya (Deemed to be University, Mangalore

- Dr. Phiros Shah, Assistant Professor got selected as Academic Council Member of Kerala Institute of Hydrography and Advanced Studies (KIHAS).
- Dr. Phiros Shah, Assistant Professor got selected as Executive Committee Member of Alumni Association of Department of Physical Oceanography, CUSAT.
- Prof. S. Rajendran, Head, Department of Earth Sciences has been continuing as the Coordinator for the IIRS/ISRO, Dehradun Outreach Program in KUFOS.
- Dr. Maya Raman was the invited speaker for the 2nd webinar series conducted by Christ College, Saurashtra University. She delivered a talk on COVID-19: Food safety and Nutrition on 30th May, 2020.
- Dr. D. D. Nambudiri presented a research review paper on Recent Advancements in Food Flavours and Colours in the Five Days Online Faculty Development Program On “Recent Trends and Developments In Food Technology” on 14th August, 2020 at the Department of Food Technology Saint Gits College of Engineering, Kottayam,
- Research papers co-authored by Dr. Phiros Shah was presented in the “Sixth Biennial Conference of Ocean Society of India (OSICON 2019)” held at CMLRE, Kochi during 12 to 14 December 2019.
- Dr. D. D. Nambudiri chaired the technical session on World Food Day work shop held at SH College, Thevara on 16th October 2020-12-02
- Dr. K. Manjusha, conducted the PhD ViVa Voce Examination and Public defense of Ms. Sreeja Nair Title of the Thesis “Genotypic characterization and drug resistance profile of multi drug resistant Mycobacterium tuberculosis [MDR-TB] in a tertiary care hospital, Kerala” as External Examiner in Yenepoya (Deemed to be University, Mangalore 25th November 2019
- Prof. S. Rajendran was the examiner for a Ph. D Thesis submitted by Mr. K. Chandramohan, Madurai Kamaraj University during the month of July 2019
- Prof. S. Rajendran published a paper entitled, “ A Tentative Crustal model of the Central Indian Ocean Deformation as inferred from Spectral and Werner deconvolution techniques of Magnetic data, Current Science, November 2019, Vol. 119, No. 9, 10, pp 1526-1539”
- Prof. S. Rajendran presented a paper in the Aquabe 2019 International Conference a paper entitled, “Prospects and challenges in mining of the onshore and offshore mineral deposits of Kerala, the gas hydrates within the EEZ and the Manganese nodules beyond the EEZ” during the month of November 2019. The above international conference was organised by the Kerala University of Fisheries and Ocean Studies.
- Dr. K. Manjusha, Attended the 32nd Kerala Science Congress held at Yuvakshetra Institute of Management Studies, Mundur, Palakkad from 25-27th January 2020
- Dr. K. Manjusha, participated in the International Conference on Frontiers in Marine Sciences: Challenges and Prospects-MARICON 2019 organized by School of Marine Sciences, Cochin University of Science and Technology held from 16th_20th December 2020.

- Dr. K. Manjusha attended Silver Jubilee National Seminar Biospectrum 2020-Genomics, organized by PG and Research Department of Microbiology, Sree Sankara College, Kalady 27-28 February.
- Dr. K. Manjusha, attended MOOC course on Online learning and Content development organized by Directorate of Collegiate education and FLAIR Govt of Kerala from 18 April to 2nd May 2020
- Dr. K. Manjusha, attended Webinar on Fair use of copy rights in class rooms organized by the research promotion council and Innovation council of St. Xavier's College for Women, Aluva on May 14th 2020
- Dr. K. Manjusha, participated webinar on Molecular docking studies; A paradigm shift in anticancer research organized by Dept of Zoology, Morning Star College Angamaly on May 16th 2020
- Dr. K. Manjusha, attended a 5 days online FDP on How Can Teachers Make a Difference? Organized by Teaching learning Centre of IIT Madras and IQAC of Sree Sankara College Kalady sponsored by Kerala State Higher Education Council from 26th to 30th May 2020.
- Dr. Nevin KG attended a Two Weeks MOOC course on ONLINE LEARNING AND CONTENT DEVELOPMENT, Organized by FLAIR, Directorate of Collegiate Education, Government of Kerala from 18th April to 22nd May 2020.
- Dr. Nevin KG attended a Two Weeks MOOC course on Managing Online classes "MANAGING ONLINE CLASSES and CO-CREATING MOOCs:2.0, Organised by Ramanujan College, Delhi under the ministry of Human Resources, Government of India. From 18th may -3rd June 2020.
- Dr. Nevin KG attended a Live webinar on Higher education post Covid 19-Organised by Rungta Group of Institutions, Raipur, Bihar, 23rd May 2020
- Dr. Nevin KG attended a Webinar on Micro/nano system Technology and Processes-An Industry Perspective, Organized By Saint Gits College of Engineering, Kottayam, Kerala, 25 May 2020
- Dr. Basil Mathew and Dr. Phiros Shah from this department has participated in the International Conference on Aquatic Resources and Blue Economy 2019 (AQUABE 2019) during November 2019 at Kochi).
- Dr. Phiros Shah has participated in the International Conference on Frontiers in Marine Science: Challenges and Prospects (MARICON 2019), 16-20 December 2019, organized by School of Marine Sciences, Cochin University of Science and Technology, Kochi, India.
- Dr. Maya Raman attended FOSS workshop on instrumentation on May 07, 2019
- Dr Jenny Ann John participated in Winter School on 'Technological Advances in Functional Food Ingredients and Validation of their Claims' organized by Division of Dairy Chemistry at ICAR-National Dairy Research Institute, Karnal, sponsored by Agricultural Education Division, ICAR from Dec. 6-26, 2019

- Dr Jenny Ann John participated in 2-days Young Innovator’s Programme-Facilitators Workshop on ‘Design for Kerala’ conducted by ICT Academy of Kerala (ICTAK) in association with Kerala Development and Innovation Strategic Council (K-DISC) at YMCA Hall, Aluva from Nov 11-12, 2019
- Dr Jenny Ann John attended the 3 weeks UGC sponsored Faculty Orientation Programme conducted by Human Resource Development, Mizoram Central University from 28th July-17th August, 2020
- Dr. Maya Raman attended online Faculty Development Programme in July 2020 on Advanced Concepts for Developing MOOCS.
- Dr. P T Mathew attended a training programme on Food Safety Management System on 26th September 2019 in Food Quality Laboratory and Research Centre, GCDA, Marine Drive, Cochin as faculty for the trainers in food safety management system. He presented the different technologies used in fish processing technology for the production of safe food.
- Dr P T Mathew, Head of the Department attended scientific panel meeting of Fish and Fishery products of FSSAI held in Central Institute of Fisheries Technology, Cochin on 06th March 2020. This is the first meeting of the reconstituted scientific Panel.
- Dr Sruthi Thalayappil R S, Assistant Professor (on contract) worked as a resource person of “Steam Academy”, summer vacation E-camp for students organised by Kerala Sasthra Sahithya Parishad Palakkad Division during April –May 2020.
- Dr.V.K.Venkataramani served as Resource Person and given series of lectures and practicals for the Training on “General Principles and Techniques adopted in Fishery Biology” by College of Fisheries (S.V.V University), Nellore organized by National Agricultural Higher Education Project, ICAR New Delhi, 6th -8th May 2019
- Dr.V.K.Venkataramani served as Resource Person and given a lecture on “ ornamental Fish keeping and Maintainance at Nirmala College Muvattupuzha on 26th July 2019
- Dr.V.K.Venkataramani served as Resource Person and given lectures on the various topics in Population Dynamics and Stock Assessment for the faculty and students of CAS in Marine Biology, Annamalai University from 14th to 18th October 2019
- ASRB, NewDelhi nominated Dr.V.K.Venkataramani as Chairman for Department promotion Committee under Career Advancement Scheme for ARS Scientists of ICAR-CIFA, Bhubaneswar from 28th to 31st December 2019
- Dr.V.K.Venkataramani served as Resource Person and delivered a lecture on “ Upcoming areas in Biotechnology” in the International Conference on Recent Biotechnological Innovation in Aquaculture organized by Bharathiar University, Coimbatore during 27th – 28th February 2020

Publications

1. Brown, N., **John, J.A.** & Shahidi, F. (2019). Polyphenol composition and antioxidant potential of mint leaves. *Food Production, Processing and Nutrition* 1, 1
2. **Jenny A. John** and Fereidoon Shahidi (2019). Phenolic content, antioxidant and anti-inflammatory activities of seeds and leaves of date palm (*Phoenix dactylifera* L.). *Journal of Food Bioactives*, 5: 120-130.
3. Anusha CS, PrakashKumar B, Sini H, **Nevin KG**. Mechanism of protection of rat hepatocytes from acetaminophen - induced cellular damage by ethanol extract of *Aerva lanata*.. *Interdisciplinary Toxicology*, 2019; 12(4); 101-
4. **Raman, M.**, Dinakaran, A., Ravindran, A., Sankar, T. V., & Gopal, T. K. S. (2019). Dietary Supplementation of κ -Carrageenan to Improve the Physio-Chemical and Functional Properties of White Bread. *Food and Nutrition Sciences*, 10 (08), 997.
5. Mathew, S., Raman, M., Parameswaran, M. K., & Rajan, D. P. (2019). *Fish and Fishery Products Analysis: A Theoretical and Practical Perspective*. Springer Nature.
6. Maya Raman (2020). *Food Processing Technology*. Sasthragathy' magazine (Kerala Sastra Sahitya parishad publication).
7. Ravindran, A., **Raman, M.**, Babu, N., Dinakaran, A., Sankar, T. V., & Gopal, T. S. (2020). Diet Chocolates and Replacement of Cocoa Powder with Jackfruit Seed Powder. *Food and Nutrition Sciences*, 11(03), 220.
8. Rajeev R, **Limna Mol V. P**, John EM, Raj S, Balachandran S, George GJ, Sudarsan KS, Ranjeet K and Sankar TV (Eds). 2019. Book of abstracts. AQUABE 2019. International Conference on Aquatic Resources and Blue Economy. 206p.
9. Riyas, C.A., K.K. Idreesbabu, N. Marimuthu, **S. Sureshkumar*** (2019) Impact of the tropical cyclone Ockhi on ecological and geomorphological structures of the small low-lying Islands in the Central Indian Ocean. *Regional Studies in Marine Science* 33 (2020) 100963 . <https://doi.org/10.1016/j.rsma.2019.100963>
10. Nowshad, M.B., K.K. Idrees Babu, Usha V. P. and S. **Sureshkumar*** (2019) A new record of sea star, *Nardoa frianti* Koehler, 1910 (Echinodermata: Asteroidea: Ophidiasteridae) from the Arabian Sea, Western Indian Ocean. *J. Mar. Biol. Ass. India*, 60 (2): 18-22
11. Archana Ravindran and **Jenny Ann John** (2020). Processed banana inflorescence (*Musa paradisiaca*): Prospects as an ingredient if functional foods. Conference Proceedings in the International Web Conference on Food and Nutrition Security for Sustainable Public Health, Dept. of Food Science and Nutrition, Nehru Arts and Science College, Coimbatore. 22nd-23rd Oct, 2020, pp. 88-93. ISBN No. 978-93-80769-99-88.
12. Minnu Rose Joy and **Jenny Ann John** (2020). Development of herbal infusion in fruit juice using guava leaves: Nutritional and antioxidant properties. Conference Proceedings in the International Web Conference on Food and Nutrition Security for Sustainable Public Health, Dept. of Food Science and

Nutrition, Nehru Arts and Science College, Coimbatore. 22nd-23rd Oct, 2020, pp. 136-141. ISBN No. 978-93-80769-99-88.

13. **Jenny Ann John** (2020). Processed Foods: What is the purpose of food processing? (In Malayalam). Shasthragathy. January, 2020: 6-12.
14. Neema job, **Nevin KG** (2020). Phycobilins: Pigment Molecules with Potential Biological and Therapeutic Applications, In. "Advances in Biological Sciences and Biotechnology (Volume - 2)". Ed. Dr. Yogendra Singh Integrated Publications, New Delhi, pp-117-144.
15. DhanyaKrishnan R, Sunitha Mary Chacko, **Nevin KG**. HR-LCMS-MS analysis of methanolic extract of coconut kernel and its in vitro cytotoxic effect against human oral cancer cell line, 2020, 11(3), 213-219.
16. **Nevin KG**, Virgin Coconut Oil on Brain Health" in edited book titled "Research Trends in Food Technology and Nutrition (Volume - 13). Eds, Akinik Publishers, New Delhi, India 2020.
17. Sini H, **Nevin KG**, Recent Advances in *Solanum trilobatum* Research, Research Trends in Medicinal Plant Sciences (Volume - 7), eds. Dr. Manzoor Hussain, Akinik Publishers, New Delhi, India 2020 pp 97-109.
18. **Limna Mol, V.P.**, Abdulaziz, A., Sneha, K.G. Praveen P.J., Raveendran T.V. and Parameswaran P.S. 2020. Inhibition of pathogenic *Vibrio harveyi* using calamenene, derived from the Indian gorgonian *Subergorgia reticulata*, and its synthetic analog. 3 Biotech 10, 248.
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22. Zubair A. A., M. Razia Beevi and S. **Sureshkumar*** (2020) Prevalence of Multiple Antibiotic Resistant and Extended Spectrum Beta-Lactamase (ESBL) producing *Escherichia coli* in a traditional fishing harbour and surrounding water bodies in the south-west coast of India. Journal of Aquatic Biology and Fisheries (in Press)
23. Divya, K.R., Isamma, A., Schmidt, B.J., John, M.E., **Sureshkumar S.** and Sankar T.V., (2020) Improvement of nutritional quality of live feed for aquaculture: An overview. Aquaculture Research, 51: 1–17. DOI: 10.1111/are.14357

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25. Muhammad Shafeeque, A. N. Balchand, **Phiros Shah**, Grinson George, A. K. Joseph, Eldho Varghese, Subha Sathyendranath & Trevor Platt. (2020). Spatio temporal variability of chlorophyll – a in response to Oceanic Mesoscale processes in the South Eastern Arabian Sea. *International Journal of Remote Sensing and Remote Sensing Letters*. (Under Review).
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27. **K. Gopakumar** and Preetham Elumalai. (2020). A Laboratory Manual for Biochemical Analysis. NPH Publishing House New Delhi.
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29. K.Karuppasamy, P.Jawahar, S.DavidKingston, **V.K.Venkataramani** and V.Vidya 2019 Elasmobranch diversity, conservation and management along the Wadge Bank, South India *Indian.J.Anim.Res* May 2019 p 1-6

Conference proceedings

1. **Benny N. Peter** and Meenakshi Sreejith (2019) Variability of Western Boundary Currents in the Tropical North Pacific Ocean and Its Role in the Distribution of Dissolved Oxygen and Productivity. The Ninth International Conference on Earth Observations and Societal Impacts, Tainan, Taiwan June 2019.
2. **Benny N Peter**, Meenakshi Sreejith, Eko Siswanto (2019) Imprints of Indian Ocean Dipole on surface circulation and chlorophyll and oxygen distributions of the Arabian Sea- A remote sensing perspective. The 7th Asian/16th Korea-Japan Workshop on Ocean Color (7th AWOC/16th KJWOC), Bangkok, Thailand, December 2019.
3. Muhammad Shafeeque, Balchand A. N., **Phiros Shah**, Akash S., Grinson George, Shubha Sathyendranath and Trevor Platt (2019). Long-term Dynamics of Chlorophyll-a in the South Eastern Arabian Sea Using Satellite Observations. *Proceedings of OSICON - 19*, pp. 204- 206.

4. Akash S., Rojith G., Dhanya J., Sajna V. H., **Phiros Shah**, Muhammad Shafeeque, Roshen G. N., Grinson George and Zacharia P. U. (2019). Oceanic climate variability signatures on major small pelagic fishery over the south west coast of India. Proceedings of OSICON -19, pp. 190- 191.
5. Akash. S, **Phiros Shah**, Muhammad Shafeeque, Rojith. G, Dhanya Joseph, Sajna. V. H, Roshen. G. N, Grinson George and Zacharia. P. U. (2019). Variability of ENSO and IOD teleconnections on the dynamics of west coast of India. Abstracts Volume. International Conference on Frontiers in Marine Science: Challenges and Prospects (MARICON 2019), 16-20 December 2019, organized by School of Marine Sciences, Cochin University of Science and Technology, Kochi, India.
6. Muhammad Shafeeque, Balchand A. N, **Phiros Shah**, Grinson George, Eldho Varghese, Ajith. K. Joseph, Subha Sathyendranath, and Trevor Platt. 2019. Remote sensing of chlorophyll variability and associated mesoscale processes in the south eastern Arabian sea. Abstracts Volume. International Conference on Frontiers in Marine Science: Challenges and Prospects (MARICON 2019), 16-20 December 2019, organized by School of Marine Sciences, Cochin University of Science and Technology, Kochi, India.

Presentations in Seminars

1. Riyas C.A. Idreesbabu K.K. and **Sureshkumar S.** (2019). Status of Acropora spp. In Kavaratti Atoll of Lakshadweep. Abstract No 184 Paper Presented in MARICON 2019. International Conference on Frontiers in Marine Sciences Challenges and Prospects held at Cochin University of Science and Technology, Cochin 16-20 December 2019. ISBN: 978-81922264-3-9.
2. Shabeena M., Idreesbabu K.K. and **Sureshkumar S.** (2019). Seaweed Resources of Lakshadweep Abstract No 196 Paper Presented in MARICON 2019. International Conference on Frontiers in Marine Sciences Challenges and Prospects held at Cochin University of Science and Technology, Cochin 16-20 December 2019. ISBN: 978-81922264-3-9.
3. Mohammednowshad B. Idreesbabu K.K. and **Sureshkumar S.** (2019). Habitat wise variability in the diversity of Sea Cucumbers of Lakshadweep Archipelago Central Indian Ocean Abstract No 160 Paper Presented in MARICON 2019. International Conference on Frontiers in Marine Sciences Challenges and Prospects held at Cochin University of Science and Technology, Cochin 16-20 December 2019. ISBN: 978-81922264-3-9.
4. Mueenudheen C.N. Idreesbabu K.K. and **Sureshkumar S.** (2019). Diversity OF Triggerfishes (Family: Balistidae) IN Lakshadweep Archipelago, Indian Ocean Abstract No 195 Paper Presented in MARICON 2019. International Conference on Frontiers in Marine Sciences Challenges and Prospects held at Cochin University of Science and Technology, Cochin 16-20 December 2019. ISBN: 978-81922264-3-9.
5. Sreeja K., Preetham E.P., S. **Sureshkumar** (2019) Abstract No 76 Paper Presented in MARICON 2019. International Conference on Frontiers in Marine Sciences

- Challenges and Prospects held at Cochin University of Science and Technology, Cochin 16-20 December 2019. ISBN: 978-81922264-3-9.
6. Riyas C. A., Idreesbabu K.K. and **Sureshkumar S.** (2020). Benthic morphology of coral reefs of Suheli par, an uninhabited island of Lakshadweep Archipelago. Abstract No. MBA DP-39. Paper presented in MECOS 3; Marine Ecosystems Challenges and Opportunities Symposium, International Conference Held at Central marine Fisheries Research Institute, Cochin. 8-10 Jan 2020.
 7. Mohammednowshad B., Idreesbabu K.K. and **Sureshkumar S.** (2020). Diversity of the holothurians in Kavaratti atoll Lakshadweep Archipelago. Abstract No. MBA DP-45. Paper presented in MECOS 3; Marine Ecosystems Challenges and Opportunities Symposium, International Conference Held at Central marine Fisheries Research Institute, Cochin. 8-10 Jan 2020.
 8. Mariyambi P.C., Idreesbabu K.K. and **Sureshkumar S.** (2020). A survey of macrosymbionts of crinoids in the Lakshadweep Archipelago. Abstract No. MBA EP-.05. Paper presented in MECOS 3; Marine Ecosystems Challenges and Opportunities Symposium, International Conference Held at Central marine Fisheries Research Institute, Cochin. 8-10 Jan 2020.
 9. Mueenudheen C. N. Idreesbabu K.K. and **Sureshkumar S.** (2020). Distribution of triggerfish- a keystone species in the coral reefs of Lakshadweep Archipelago, Central Indian Ocean. Abstract No. MBA EP-.18 Paper presented in MECOS 3; Marine Ecosystems Challenges and Opportunities Symposium, International Conference Held at Central marine Fisheries Research Institute, Cochin. 8-10 Jan 2020.
 10. Shabeena M Idreesbabu K.K. and **Sureshkumar S.** (2020). Mapping of seaweed and seagrass resources in atolls of Lakshadweep archipelago, Central Indian Ocean. Abstract No. MBA DP-06. Paper presented in MECOS 3; Marine Ecosystems Challenges and Opportunities Symposium, International Conference Held at Central marine Fisheries Research Institute, Cochin. 8-10 Jan 2020.
 11. Sahadevan P. and **Sureshkumar S.** (2020) Diversity of fishes, crustaceans and molluscs in the traditional prawn filtration fields. Abstract No. MBA DP-06. Paper presented in MECOS 3; Marine Ecosystems Challenges and Opportunities Symposium, International Conference Held at Central marine Fisheries Research Institute, Cochin. 8-10 Jan 2020.

Equipment Purchased

1	Analytical Balance	Scale-tec	Marine Biology
2	Refrigerator	Whirlpool	Marine Biology
3	Fish Measuring Board- 1/1.5/2Meter		Marine Biology
4	Hot Air Oven	KEMI	Marine Biology
5	Occular Micrometer	Omega	Marine Biology

6	Stage Micrometer	Omega	Marine Biology
7	Analytical Balance	SHIMADZU	Marine Chemistry
8	Double Distillation unit	LAB-SIL	Marine Chemistry
9	Muffle Furnace	LABLINE	Marine Chemistry
10	ROTAVAP Model PBU 6	SUPERFIT	Marine Chemistry
11	Kjeldhal distillation unit	BOROSIL	Marine Chemistry
12	Alcohol Distillation Unit	BOROSIL	Biotechnology
13	Binocular Microscope CX21 I LED	OLYMPUS	Biotechnology
14	D Lab Rocker Shaker Model SK –R 1807-E	D LAB	Biotechnology
15	Heating Mantle		Biotechnology
16	High Speed Refrigerated Centrifuge	HEREAUS MULTIFUGE	Biotechnology
17	Liquid Nitrogen Tank	BA 20	Biotechnology
18	Micropipette Variable Volumes		Biotechnology
19	Microwave Oven 20 Ltr		Biotechnology
20	Refrigerator-324 Ltr	SAMSUNG	Biotechnology
21	UV Visible Spectrophotometer UV 1900	SHIMADZU	Biotechnology
22	Clinometer compass		Earth Science
23	Hot air oven	LABLINE	Earth Science
24	Petrological microscope		Earth Science
25	Test sieves with lid and pan		Earth Science
26	Autoclave	LABLINE	Marine microbiology
27	Biosafety Cabinet	LABLINE	Marine microbiology
28	Electrophoresis power supply	TARSONS	Marine microbiology
29	Laminar Air Flow	ROTEK	Marine microbiology
30	Magnetic Stirrer With Hot Plate X	EITEK	Marine microbiology

31	Membrane Filter Holder	TARSONS	Marine microbiology
32	Midi Submarine Electrophoresis Unit	TARSONS	Marine microbiology
33	Mini-dual Electrophoresis Unit	TARSONS	Marine microbiology
34	Oil free Vacuum Pump	ROCKER	Marine microbiology
35	Weighing Balance	SCALE TEC	Marine microbiology
36	Heating mantle with energy regulator	KEMI	Food Science and Technology
37	Autoclave with Digital Temp. indicator	LABLINE	Food Science and Technology
38	Equitron Autoclave Vertical Model	EQUITRON	Food Science and Technology
39	Hot Plate Rectangular with Energy Regulator	KEMI	Food Science and Technology
40	Semiautomatic double seamer	CANTECH	Food Science and Technology
41	Hot smoke Kiln	AQUATECH	Food Science and Technology
42	Centrifuge Labspin Model TC 450D	ELTEK	Food Science and Technology
43	Sausage filler and stuffer		Food Science and Technology

Achievement of students

1. Three students of M.Sc. Food Science and Technology won International recognition for their Research Concept Presentation in “FoodFactory4Us International Student Competition on Valorizing Food Biodiversity in your Country”. They are the sole team from India and one among the selected 10 International teams. The student members are Amala, Chitra and Ashwathy. Dr. Maya Raman, Associate Professor, SOST is mentoring the team. The team will be given training in sessions till February 2021.
2. Ms. Ginchu Mariyam Sunny, student of MSc Marine Chemistry batch 2018-20 was selected as one of the ten scholars for the NF-POGO Centre of Excellence in Observational Oceanography at Alfred-Wegener Institute, Germany
3. Jiji K of M.Sc. Marine Microbiology 2016-18 batch has obtained admission in National Taiwan Ocean University to pursue higher studies
4. Ms. Minnu Rose Joy, Ph.D. Scholar won best poster award for her poster entitled “Development of herbal infusion in fruit juice using guava leaves: nutritional and antioxidant properties” at International Web Conference on Food and Nutrition Security

for Sustainable Public Health, organized by Nehru Arts and Science College, Coimbatore, Tamil Nadu, India on 22-23 October, 2020.

5. Ms. Haritha Y S, student of MSc Marine chemistry batch 2017-2019 was awarded Ocean Society of India (OSI) Meritorious PG Dissertation award in Marine Sciences for the year 2018-2019 during the OSICON held at the Centre for Marine Living Resources & Ecology (CMLRE) Cochin on 12th December 2019.
6. A research paper entitled Carbon nanodots synthesized from chitosan and its application as a corrosion inhibitor in boat-building carbon steel BIS2062 was published in Applied Nanoscience on 27th September 2019 by Ms. A K Keerthana, student of MSc Marine Chemistry batch 2017-2019. The work was a part of her MSc dissertation under the guidance of Dr. P. Muhammed Ashraf at ICAR Central Institute of Fisheries Technology, Cochin.
7. Ms. Najji Josephine A J of 4th semester, MSc Marine Biology, SOST, KUFOS has cleared the NTA-UGC JRF/NET held in December 2019.
8. Mr. Jamshad, Mr. Rahul and Ms. Aswathy Ashokan, 3rd Semester of M.Sc. Food Science and Technology cleared UGC NET and Lectureship in December 2020.
9. Four students of 2018 batch M.Sc. Marine Biology, Ashitha Priya Shajan, Febin George, Shireen P. Mohammed and Sreelakshmi S. have obtained Aspire fellowship for carrying out the M.Sc. project work.
10. Ms. Anju and team of M.Sc. Food Science and Technology prepared a video presentation on simple and effective techniques to understand food adulteration. The video was released by Honorable Vice Chancellor (i/c) and Government Principal Secretary-Fisheries Ms. Tinku Biswal. The video was released on the occasion of World Food Day Celebrations on October 16, 2020.
11. Ms. Febina, PhD Scholar participated and presented the poster at International Web Conference on Food and Nutrition Security for Sustainable Public Health, organized by Nehru Arts and Science College, Coimbatore, Tamil Nadu, India on 22-23 October, 2020.
12. The students of Semester II MSc Marine Biology, SOST, KUFOS attended an international conference on “RECENT BIOTECHNOLOGICAL INNOVATION IN AQUACULTURE (RBIA)” held at Bharathiar University Coimbatore. It was a two days conference conducted from 27 February 2020 to 28th February 2020, organized by Unit of Aquatic Biotechnology and Live Feed Culture, Department of Zoology, School of Life Sciences, Bharathiar University, Coimbatore & ICAR National Bureau of Fish Genetic Resources Lucknow
13. The 2019 Batch M.Sc. Earth Science students took part in an intensive training programme in geology field work imparted by the Geological Survey of India, Hyderabad at Chitradurga mines for a period of two weeks. Dr. Honey H. Das lead the students for the above training programme.
14. The students of Semester II Msc Marine Biology, SOST, KUFOS attended a National seminar on “Coastal wetland in Kerala: significance, threats and conservation” held at Bishop Abraham Memorial college, Thuruthicaud, Pathanamthitta. It was a two days

seminar conducted from 23rd January 2020 to 24th January 2020 and was funded by the Directorate of Environment and Climate Change (DOECC).

15. MSc Marine Chemistry students Ms. Sruthy Kumar, Ms. Nithya Thulasedharan and Ms. Marwa Muhammed Shahid participated in the National training course on the topic “Prerequisites to Recent Advances in Catalysis” held by Central University of Kerala, Kasargod from 16th December 2019 to 20th December 2019.
16. Students from Physical Oceanography attended the Lecture Series at Nansen Environmental Research Centre (India) during January 2020 on the topics Indian Ocean Warming by Dr. Syam Shanker and Regional Frequency Analysis by Dr. G Muraleedharan
17. Ms. Amala David and Ms. Uma C, MSc Marine chemistry students of KUFOS has participated in Cruise NO 391 for Sagar Sampada as part of Centre for Marine Living Resources & Ecology (CMLRE) research programme from 1st November 2019 to 20th November 2019. The objective of the study was to analyse the sediment samples collected from different stations. The cruise was from Kochi to Vishakhapatnam and covered 1624 nautical miles.
18. Two students Ms Anitta Abraham and Ms Ciciliya Cyril from the second semester (2019-21) took part in the KITCO project on the “Biodiversity Study for Malanad Malabar Cruises Tourism project” from 17-21st February 2020 at Kannur
19. The students of Semester II M.Sc. Marine Biology, SOST, KUFOS attended a seminar on the topic “CLIMATE CHANGE” on February 5 2020 hosted by Cochin University of Science and Technology.
20. M.Sc. Marine Microbiology students attended following conferences webinars and seminars.
 - a) 14 students participated in the seminar “Recent Biotechnological Innovation in Aquaculture (RBIA)” organized by the Department of Zoology, School of Life Science, Bharathiar University, Coimbatore in association with ICAR from 27-28th February.
 - b) 5 students participated in the Silver jubilee National Seminar Biospectrum 2020- Genomics, organized by PG and Research Department of Microbiology, Sree Sankara College, Kalady 27-28 February
 - a) Molecular docking studies; A paradigm shift in anticancer research organized by Dept of Zoology, Morning Star College Angamaly on May 16th 2020- 6 numbers
 - b) MBRU community immunity Ambassador Program-‘Lets break the chain of Covid-19 infection’ March 29th – 1 number

- c) Respiratory virus, virus receptors, virus infections augmented bacterial receptors and secondary infection, Department of Zoology, Fathima Matha National College, Kollam , 27th May 2020- 1 number
 - d) Emerging Epidemic Diseases and Drug Repositioning, FMNC College- 25th may- 1 number
 - e) Biodiversity informatics & documentation through citizen science on the Indian Biodiversity Portal, St.Xavier's College for Women, Aluva- 25 th May – 1number
 - f) Viral Diseases, Organized by Dept of Zoology & Botany, Sri Paramakalyani College, Alwarkurchi-30th May-1 number
 - g) Covid 19 awareness quiz, 24th April , 2 numbers
 - h) All Kerala Environmental Literacy quiz, Bhoomithra Sena Club, Sree Sankara College, Kalady, 28th April- 4 number
 - i) Ms Abhaya Robinson of the second year attended a workshop on Molecular Biology Techniques, Avanz Bio Pvt LTD, Chennai from 20-21 September 2020
21. Marine Microbiology students went for their study tour to Goa . They visited National Institute Oceanography and National Centre for Polar and Ocean Research, there.
22. Department of Marine Chemistry organised an institutional visit for the MSc Marine Chemistry batch (2018-20) on 29th august 2019 to ICAR Central Institute of Fisheries Technology (CIFT), Cochin. The objective was to gain knowledge on the functioning of sophisticated analytical instruments that are used in the area of marine chemistry and to get an idea about the history and organisational structure of the institute.
23. The following are the Industrial Visits conducted for the M.Sc. Food science and Technology students for a practical exposure to the syllabus curriculum:
- a) Plant Lipids on 20 July 2019
 - b) Campco Chocolate Factory, Puttur, Mangalore, Karnataka on September 17, 2019
 - c) Achal Industries Pvt Ltd, Mangalore, Karnataka on September 17, 2019
 - d) Nirapara Rice Processing Plant- Visit on February 13, 2020
 - e) **22nd edition** of India International Seafood Show (IISS), 2020 organized jointly by the Marine Products Export Development Authority (MPEDA)

and the Seafood Exporters Association of India (SEAI) in Kochi, Kerala visited on 7th February 2020.

24. Students of the second semester M.Sc. Marine Microbiology and Dr.K.Manjusha made an Institutional visit to Central Marine Fisheries Research Institute (CMFRI), Kochi on February 4th 2020 their open day
25. Two students of MSc Marine chemistry batch 2018-20 have successfully completed their MSc Dissertation from ICAR Central Institute of Fisheries Technology, Cochin. One student from National Institute of Oceanography Head Quarters (CSIR-NIO) Dona Paula, Goa. Three students from NIO regional centre Visakhapatnam and two students from NIO Cochin. Two students from National Centre for Polar and Ocean Research (NCPOR) Goa. One student from national Centre for Earth Science Studies (NCESS) Trivandrum and one student from Centre for Marine Living Resources and Ecology (CMLRE) Ministry of Earth Sciences, Cochin. Two students from National Centre for Sustainable Coastal Management (NCSCM) Chennai and one each from National Institute of Technology Calicut and Kerala State Drugs and Pharmaceuticals Ltd. Alappuzha.
26. The students from the 2nd year batch carried out their dissertation work at different National Institutes. The list of students and details of the national institutes are furnished below.

Reg.No	Name	Institution Name	Guide Name
OST-2018-21-01	AADARSH JAYASANKAR	CENTRAL FOR MARINE LIVING RESOURCES AND ECOLOGY (CMLRE)	Dr. VENKATA RAMU CHERUKURI Project Scientist
OST-2018-21-02	AISWARYA S	INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)	Dr. ABHISEK CHATTERJEE Scientist D
OST-2018-21-03	AMRUTHA SADANANDAN	INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)	Dr. FRANCISP.A Scientist - F
OST-2018-21-04	ARYA JAYAKUMAR	INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)	Dr. B. PRAVEEN KUMAR Scientist-D
OST-2018-21-05	ARYA SANTHOSH V	NATIONAL CENTRE FOR POLAR AND OCEAN RESEARCH (NCPOR)	Dr. NUNCIO MURUKESH Scientist-D

OST-2018-21-06	GOPIKRISHNAN G S	INDIAN INSTITUTE OF TECHNOLOGY KHARAGPUR	Dr. JAYANARAYANAN KUTTIPPURATH Asst. Professor
OST-2018-21-07	KARTHIKA P S	INDIAN NATIONAL CENTRE FOR OCEAN INFORMATION SERVICES (INCOIS)	Dr. R. HARIKUMAR Scientist-D
OST-2018-21-08	NANDA KISHORE	CENTRAL FOR MARINE LIVING RESOURCES AND ECOLOGY (CMLRE)	Dr. RASHEED KUNJUMOHAMMED Scientist-E
OST-2018-21-09	PINTU SIMON	NATIONAL CENTRE FOR EARTH SCIENCE (NCESS)	Dr. E. A. RESMI
OST-2018-21-10	SIVAKRISHNAN K K	NATIONAL CENTRE FOR POLAR AND OCEAN RESEARCH (NCPOR)	Dr. SABU P Scientist-D

27. 22 of 24 students of MSc Marine Microbiology were able to get an opportunity to pursue their dissertation projects in premium research institutions like RGCB, NIIST, NIOT, CMLRE, CIFT, NCPOR, NIO and BioGenic Research Centre. Two students are carrying out their projects in KUFOS itself.
28. Ms. Cinderella, student of MSc Marine chemistry batch 2017-19 got selected as project assistant at National institute of Oceanography, Kochi
29. As part of the student training program, eight M.Sc. Marine Biology Semester II students (2019 batch) got an opportunity to participate in the cruise onboard MGS SAGAR, organized by National Centre for Polar and Ocean Research (NCPOR). The major objective of the cruise was to carry out multi-beam bathymetry survey in the Bay of Bengal region as part of Exclusive Economic Zone (EEZ) mapping program. Along with multi-beam survey, marine magnetic and Gravity survey and CTD operation are carried. The cruise started from Visakhapatnam, 29th January, 2020 and was completed on 10th February, 2020 (13 days onboard). The cruise team include Akshara C., Amina Majeed, Ayana S., Hency Maria Sunny, Meera M. Nair, Nimya S. Kumar, Ramshad T.S. and Rahul S. Krishnan.



M.Sc. Marine Biology Semester II students (2019-21 batch) onboard MGS Sagar

Field Trip:

“Beyond books, there is a world, where we get to learn real lessons about the life around us. We felt, we saw, and we touched, what was acknowledged from textbooks and classroom lectures”

In the words of M.Sc. Marine Biology 2019-21 batch

As part of the curriculum, the students of Second Semester M.Sc. Marine Biology undertook a field trip to southern coastal regions of Kerala on 20th and 21st February 2020. The visit was aimed to collect the flora and fauna of rocky and sandy shores and also to visit the aquarium of CMFRI Vizhinjam. Accordingly, they visited Thirumullavaram, Varkala, Vizhinjam harbour and landing area and CMFRI Vizhinjam aquarium. Specimens of rocky, sandy and inter-tidal organisms as well as marine finfishes were collected and preserved in appropriate media. The specimens were then analysed and taxonomically classified in the laboratory.



Specimens collected by M.Sc. Marine Biology students during field trip to Vizhinjam



Students of M.Sc. Marine Biology at Varkala beach as part of the field visit to sandy beach

Outreach activities

- a) Ms. Ardra, M.sc Biochemistry student, Pazhasiraja college, Pulpally, Wayanad on the Preliminary characterization and bioactivity of *Sargassum whitii*, 2020. (Supervising Guide-Dr. Nevin KG)
- b) Ms. Geeshma M.sc Biochemistry student, St Mary's College for women, Thiruvalla on the Preliminary characterization and antioxidant activity of *Chaetomorpha antennina*, 2020. (Supervising Guide-Dr. Nevin KG)
- c) Ms. Shilpa M.sc Marine Microbiology Student, KUFOS, Panangad" on Isolation and Preliminary Characterization of bioactive compounds from the marine sponge *Mycale Parishii*", 2020. (Supervising Guide-Dr. Nevin KG)
- d) Ms. Maroofa M.sc Biochemistry student, Pazhasiraja College, Pulpally, Wayanad on the Preliminary characterization and bioactivity of *Chaetomorpha antennina*, 2020. (Supervising Guide-Dr. Nevin KG).

Placement of students

As a partial fulfillment of MSc Food Science and Technology course, it is mandatory to undergo internship/ project work in reputed National Institute/ Organization to carry out the project work. The 4th batch had 24 students. Following are the establishments where students went for internship.

1. Defense Food Research Lab, Mysore	- 2 Students
2. CSIR-Central Food Technological Research Institute	- 2 Students
3. Spices Research Institute, Palarivattom	- 2 Students
4. KUFOS, Lab	- 5 Students
6. Coco-cola Industries Hyderabad	- 4 Students
8. Cardamom Research Institute, Myladumpara	- 3 Students
9. Central Plantation Crops Research Institute, Kasaragod	- 4 Student
10. NIIST, TVM	- 3 Student
11. Central Tuber Crops Research Institute, TVM	- 3 Students
12. Central Institute of Fisheries Technology, Kochi	- 4 Students

Placement Cell Bulletin

Student Name	Batch	Post	Name of Organisation/Institution of placement or higher studies
Dybin George	2018-20	Young professional II	CIBA, Chennai

Hanna Iqbal	2018-20	CB NAAT lab technician	Regional Public Health Laboratory, Ernakulam
Muhammed Suhail	2018-20	PCR technician	Regional Public Health Laboratory, Ernakulam
Abhaya Robinson	2018-20	Microbiologist	Novanym Trade Links
Nizam Ashraf	2018-20	Microbiologist	Medistream Diagnostic Company Trivandrum
Gopika K.S	2018-19	QC	Abad Sea Foods

Mr. Gopikrishnan G S, Physical Oceanography Student (2018-2020 batch) registered for Ph.D. at IIT Kharagpur.

Mr. Sivakrishnan K K, and Ms. Karthika P S, Physical Oceanography Students (2018 -2020 batch) joined for M.Tech in Atmospheric Science at Cochin University of Science and Technology (CUSAT).

Mr. Aadarsh Jayasankar, Physical Oceanography Student (2018 -2020 batch) selected as Junior Surveyor at Geoservices Maritime Pvt Ltd, Navi Mumbai.

Industrial visits:



Nirapara Visit on February 13, 2020



India International Seafood Show on 7th February, 2020



Plant Lipids Visit July 20, 2019



**Campco Chocolate Factory, Puttur, Mangalore,
Karnataka on September 17, 2019**



Achal Industries Pvt Ltd, Mangalore, Karnataka on September 17, 2019

SCHOOL OF OCEAN ENGINEERING AND UNDERWATER TECHNOLOGY

Staff strength

Professor	:	1 (Director)	Dr.Suriyakala C D
Associate Professor	:		
Assistant professor	:		
Adjunct faculty	:	1 for M Tech	Dr.Sivadas
			Dr.Prasad Rao (Service from SOST)
			Dr.Pankajaction (Service from SOST)
		B Tech Food Tech	Dr.Gopakumar (Service from SOST)
			Dr.D D Nambuthiri (Service from SOST)
			Dr.P T Mathews (Service from SOST)
Contract/Guest faculty	:	6(o/c) /	7(G)
		1.Er.George basil	1. Ms.Sowbhagya
		2.Er.RashidaRejuwa	2.Dr.Aishwarya Rao
		3.Er.Bhavya Francis	3.Dr.Subin
		4.Er.Mridhula Murali	4.Ms.Soumya
		5.Er.Solomon Francis	5.Dr.Deepak
		6.Dr.LinuSalim	6.Mr.Ananthanarayanan
			7.Er.Linda
Student strength		B.Tech – year wise	:2017(38),2018(44),2019(44)
		M Tech	:2018(17), 2019(05)
		PhD	:2016(2),2017(2),2018(01),2019(-)

Plan for the current academic period

- The AICTE approval has been given for the four-year B Tech (Food Technology) conducted by the School of Engineering and Underwater Technology of KUFOS. The AICTE has given permission to admit 60 students to the course, that was introduced in the academic year 2017-18.
- Setting up Engineering Laboratories
- Conducting FDP, Guest lecture required, Industrial visits and internships

Details of Departmental/school staff meeting conducted with agenda:

- 1.2019 April 22nd: Semester end Evaluation reg syllabus coverage , next sem workload distribution, B Tech 2017 Batch ELP to spices research organization
- 2.2019Aug Reg International Conf paper presentation, poster preparation discussion
- 3.2019 Nov 25th Regarding B Tech 17, 18 batch workload, TT discussion, Guest lectures, industrial visits, 2019 batch Syllabus completion and their semester examinations, AICTE sponsored workshop, school Organised FDP

4. Jan 20th 2020 BTech 2019 batch Univ exam sem1 , Internal exam dates, Guest lecture need etc
5. May 13, 2020 Regarding the reopening of sem 2 BTech, Online time table reg
6. July 20th 2020 Sem 7 and Sem 5 reopening reg workload, AICTE sponsored workshop
7. Aug Project discussion-how to proceed in this pandemic season- meeting with project guides
8. Nov 11th meeting with staff reg university exam evaluation- format of division of marks re-opening of semester 3 reg

Conference/Seminar/Workshop/Invited lectures organized by the School

1. Guest Talk on Spice Oleoresins :Dr. Mathew Attokaran,(former Director, Regional Research Laboratory (NIIST), Trivandrum, India) has taken a session for B.Tech Food Technology students (4th semester) on 19/2/19 on ‘Spice Oleoresins’
2. Industrial Visits to Dairy plants (PDDP- Kalady and CPD Milma-Alappuzhaon 22nd February 2019
3. The students also visited Central Product Dairy Milma, on 27th February, 2019. Various steps involved in milk processing and different machineries used were explained by the instructor
4. M Tech Coastal and harbor Engineering students at the end of 3rd semester visited munambam Harbour and the proposed site for the new port
5. A workshop arranged for B Tech Students organized on 28/1/2019 on the topic “Excellence”- To help the students to create a mindset of "Excellence", so that success becomes a natural outcome & also to make them sensitive to their role in achieving Excellence – session was by Mr. Ganga Mohan P N , COACH POINT(Developing people to deliver),Mumbai
6. A workshop on MIKE tool box is arranged in the mid of Jan 2019
7. has Organized a five days workshop on Internet of Things (IoT) during September 23rd to 27th 2019 at the School. It was an AICTE sponsored Faculty Development Programme(FDP)by the AICTE Training and Learning (ATAL) Academy.
8. B Tech, Food Technology students of KUFOS have visited Modern Bread, Ernakulum on 6th August 2019 as part of Industrial visit for the ongoing semester. In Modern Bread Production Unit they were introduced to sections like Dough making, Bread Baking and Bread Packaging
9. B.Tech Food Technology students made a visit to Unibiosys Biotech Reserch Lab, Cusat on 17 August 2019 and attended a full day training on various aspects of Biotechnology . The lab is a ISO 9001: 2008 certified contract research laboratory engaged in research and training of Biotechnology and Microbiology.
10. 3 Day Workshop on Recent Research and Application Trends in Underwater Sensor Technologies Dec 11th -13th 2019
11. FDP From November 23^d to November 27th 2020 on the recent developments in "Sensor Technologies" sponsored by AICTE Training & Learning Academy (ATAL)

Academic achievements of Faculty and Research scholars

1. Publishing Research findings (Annexure 1)

2. Conducting Guest talk in premier institutions

- Dr. Suriyakala C D invited speaker on the topic “Electronic monitoring and sensors in fisheries” on 20/11/2019 in ICAR sponsored Short Course on ‘Recent advances in post-harvest fisheries engineering’ during 13-22 November 2019 at CIFT Cochin
- Dr. Suriyakala C D invited speaker to conduct a session in Wireless Technology & RF Receivers Workshop for the best of talents from various BEL unit at Bharath Electronics Ltd, Bangalore
- MGM College of Engineering and Technology, Pampakuda, Ernakulam celebrated International Women's Day 2019. Dr.Suriyakala C D, Director, SOEUT, KUFOS inaugurated the programme with a talk on “Empowerment of Women through Technical Education”
- Inauguration of the IETE Student's Forum @ Mar Baselios Christian College of Engineering and Technology, Peermade, Kerala on Feb 27th 2019 by Dr.C.D.Suriyakala, Hon. Treasurer, IETE Kochi Center and gave a talk in the “Significance of Technical Society in professional Courses”
- Dr. T. K. Sivadas, Adjunct faculty of our school has been nominated by KSEB as an Expert Member of the technical committee for REAL TIME STRUCTURAL HEALTH MONITORING & EARLY WARNING SYSTEM (RTSHM&EWS) with the objectives of implementing electronic instruments for monitoring the various operational aspects of 12 projects associated with Idukki Hydrel Project and other associated dams from April 2019. His services were requested by KSEB, considering his contributions to many complex and interdisciplinary environmental sciences through development of new sensors and instruments which have become infrastructural facilities to more than 250 institutions in the country, including Dam safety and the related hydro-meteorological environment

Online webinar/Courses attended by Staff/Research Scholars

- Er.George Basil Asst.Professor of School of Ocean Engineering & Underwater Technology attended the online workshop “9011 IIRS Outreach Programme- “Basic Principles of Remote Sensing Technology
- Er.Merin Skariah Research Scholar has attended the Webinar on "Ensuring Water Security for Future" organized by KSCSTE, Trivandrum
- Dr.Linu Salim , Asst Prof of School of Ocean Engineering & Underwater Technology attended International webinar “How molecular evolution influences structure of proteins organized by SAFI Institute of Advanced studies, Malappuram, Kerala

- Er.NebuPulickal Research Scholar attended webinar”Introduction to RTOS” organized by NIELIT,Calicut
- Er.Basim Basheer Research Scholar attended webinar”Introduction to RTOS” organized by NIELIT,Calicut Er.NebuPulickal Research Scholar attended webinar ”Building IoT Solutions” organized by ER& DCI, Trivandrumon
- Er.Basim Basheer Research Scholar attended webinar ”Building IoT Solutions” organized by ER&DCI,Trivandrumon Er.MerinSkariah, Research scholar of School of Ocean Engineering & Underwater Technology attended the online workshop “9011 IIRS Outreach Programme- “Basic Principles of Remote Sensing Technology”
- Mr.Bibin John undergone a training in “Non linear wave structure models in off shore & Naval Industry “ at IIT Chennai from 27/3/19 to 2/4/19
- PhD Scholars Er.Basim Basheer &Er.NebuPulickal undergone 3 month training in the software R language with Python at oceanography dept at CUSAT campus
- Ms.MerinSkariah Completed a 12 week AICTE approved FDP Course on “Remote Sensing Essentials” by Dr. Arun K. Saraf, IIT Roorke through NPTEL Swayam .
- Ms.MerinSkariah Attended a Webinar on “Ensuring water security for future” organized by NIT Suratkal on May 8th 2020.
- Ms.MerinSkariah Attended a Webinar on “Research techniques and tips for Article writing” organized by Vidya Jyothi Institute of Technology, Hyderabad on July 3rd 2020.
- Ms.MerinSkariah Attended a Webinar on “Indigenous Knowledge in Disaster Management” organized by SFE KUFOS on 1st October 2020.
- Ms.MerinSkariah attended a 5 day FDP on “Sensor Technology” organized by ATAL and SOEUT, KUFOS from 23rd November to 28th November 2020.
- Er.Bhavya Francis :10 days training on Recent advances in Post-Harvest Fisheries Engineering- By ICAR-CIFT, Cochin during 13-22 November 2019
- Er.Bhavya Francis :Faculty development program -Recent Trends and Developments in food technology during 10th to 14th August 2020, organized by Department of Food Technology, Saintgits College of Engineering
- Er.Bhavya Francis :5 Days FDP on Internet of Things by AICTE Training and learning Academy at SOEUT, KUFOS from 23rd to 27th September 2019
- Er.Rashida Rejuwa :Faculty development program -Recent Trends and Developments in food technology during 10th to 14th August 2020, organized by Department of Food Technology, Saintgits College of Engineering
- Er.Jainy:“Ocean Modeling Workshop for students and research scholars (OSIMOD 19)”, held at KUFOS, Kochi during 11th-14th June, 2019
- Er.Jainy Sara babu:“Discovery and use of operational ocean data products and services”, jointly organized by the UNESCO/IOC IODE and INCOIS-ITCOcean at INCOIS, Hyderabad during 1st-5th July 2019
- Er.jainy Sara Babu:Recent research and Application trends in Underwater Sensor technologies, School of Ocean Engineering & Underwater Technology, KUFOS (11th-13th Dec, 2019)

- Er.jainy Sara Babu :Online FDP Program on Sensors Technologyorganised by AICTE Training and Learning (ATAL) Academy and School of Ocean Engineering &UnderwaterTechnology, KUFOS, Panangad from 23rd-27th November,2020

Academic achievement of Students

1M Tech student of School of Ocean Engineering and Underwater Technology Irshad Ali K C attended a workshop Training on “ Coastal Vulnerability Mapping & Analysis using QuantumGIS” at INCOIS Hyderabad during August 25-30, 2019.

2. During the winter vacation Nov 2018 our B Tech Food Technology students have undergone short term internships in the following Industries

- MilmaErnakulam ,Trichur Dairy
- Royal Malabar Foods,CSEZ,Kakkanad
- Thejus Foods Pvt.,Perumbavoor,Ernakulam
- Baby Manne International,Thoppumpady
- United Breweries Kanjikode West Palakkad
- Febin Sea Foods ,SnowyIcecream
- Food Quality lab
- Merrytime cream Foods Pvt.Ltd. ,Kakkanjeri,Malappuram

3.NPTEL-SWAYAM Achievements

- School of Ocean engineering & Underwater Technology Proudly announce that 14 students have scored more than 60 % Dairy and Food Process and Products Tech, innovation, Business models and Entrepreneurship, Fundamentals of Food Process Technology and Food Science and Processing the courses offered by NPTEL - SWAYAM

4. Fidha Siddique, Gopika S, Farhan H, Sneha G, JiyannaTomy won FSSAI, Eat right India &mygov quiz competition, December 2020

5. Fidha Siddique attended webinar on importance of millets in human nutrition and value addition through processing conducted by DadasahebMokashi College Of Food Technology

6.FidhaSiddique,won second prize National Level E-Quiz Competition conducted by HINDUSTAN INSTITUTE OF TECHNOLOGY & SCIENCE

7.Fidha Siddique, AthulyaBabu, Pavithra K PParticipation in webinar conducted by Lady Irwin College University Of Delhi on Novel Technologies for Sustainable Food Systems

8.Fidha Siddique, AthulyaBabuParticipation in webinar conducted by Lady Irwin College University Of Delhi on Green Perspectives in Food Processing.

9.Fidha SiddiqueSuccessfully completed National level e-Quiz competition in connection with WORLD FOOD DAY 2020, organized by College of Food Technology, Kerala Veterinary and Animal Sciences University in association with Indian Dairy Association (Kerala chapter

10.Fidha SiddiqueParticipation in the International e-Conference on "Novel Nutrition Approach and Emerging Opportunities to Sustain in Pandemic Scenario" organised by the Department of

Nutrition and Dietetics, Mount Carmel College Autonomous, Bengaluru in association with IITB Remote Centre, Women's Polytechnic College, Puducherry

11. Fidha Siddique, Participation in the National level webinar series on the topics “NUTRITIOUS VALUE OF SPIRULINA AS FOOD AND MEDICINE” and “IMPACT OF COVID PANDEMIC ON DAIRY AND FOOD INDUSTRY” conducted by College of Food Technology, Kerala Veterinary and Animal Sciences University in association with Indian Dairy Association (Kerala chapter)

12. Jamshiya A, Athulya Babu, Jumana Jaleel, Nashva CP, Pavithra K P : National level workshop on recent advances in Dairy and Food Engineering, Parul University, Vadodara on 15th September 2020

13. Athulya Babu, Jency Sunny: Webinar on “millets nutritional potential and challenge” by Mar Athanasios College, Thiruvalla, 8th October 2020

14. Jumana Jaleel: Seshasayee institute of technology, International webinar series on Micromagnetics of ferromagnetic nanostructures on 18/8/2020

15. Sandwana Sneethan: Training by Internshala on Android App Development From 15th May to 10th July 2020

16. Akshay Aji: Participation in seminar on prospects and challenges of catering industry in Kerala by KUFOS and AFSTI Cochin Chapter on 15th October 2019

17. Ms. Punya Appukuttan: National webinar on Fortification of Edible oil: From commitment to action, FOOD-CASIO National Nutrition Month, 2020 by Department of Food Technology, Hindustan Institute of Technology and Science, Chennai

Capacity building of Staff and Students

- **Training on Oceanographic instrumentation at SNOM of Navy, Willingdon Island visited Coastal Engg. Lab of KUFOS**

India Navy staff who were undergoing training on Oceanographic instrumentation at SNOM of Navy, Kochi, Willingdon island visited Coastal Engg. Lab of KUFOS to undergo training in indigenously developed ocean technological instruments, as part of their visits to other important oceanographic institutes. They operated different oceanographic instruments kept in live and operational conditions in the lab., and particularly “Portable MEDAS” (Marine Environmental Data Acquisition System) which is capable of acquiring 15 nos. different and important oceanographic parameters simultaneously during one single operation, making the coastal and harbor engg. survey much easier. They operated the instrument around the Panangad area under the guidance of Dr. T. K. Sivadas Visiting Faculty of both KUFOS and SNOM and acquired plenty data directly from the coastal waters.

- Full-fledged Computer laboratory with software (25 users i5 configuration)-organise workshop in this software every year by school staff
 - Mike 21 LABKIT – Class room license software
 - 3 days’ workshop on MIKE tool box is arranged in Jan 14-16, 2019

- Language lab with Digital Linguistic Mentor(DLM)
- MAT lab 2013 a

Academic/Research/Extension activities of Faculty outside the University

- Organizing FDP within university also attend outside universities
- Publishing papers of research findings

Meetings attended by faculty members outside the University

1. Faculty Members of School of Ocean Engineering and Underwater Technology George Basil and Rahul Krishna H attended a Faculty ththDevelopmentProgramme for student Induction Programme conducted by AICTE at MBITS,Kothamangalam during 13-15june 2019
2. Director of School of Ocean Engineering and Underwater Technology Dr.Suriyakala C D and Faculty Member Rahul Krishna H thundergone a one day training programme at IITChennai in “ SWAYAM-NPTELONLINE COURSES” on July 26,2019
3. M Tech student of School of Ocean Engineering and Underwater Technology Irshad Ali K C attended a workshop Training on “ Coastal Vulnerability Mapping & Analysis using QuantumGIS” at INCOIS Hyderabad during August 25-30, 2019
4. Dr.Linu Salim and Er.Bhavya Francis attended ICAR sponsored Short Course on ‘Recent advances in post-harvest fisheries engineering’ during 13-22 November 2019 at CIFT Cochin

Publications

1. Little Flower T.J and Beena Mary John, “Wave Attenuation by Mangroves – Numerical Analysis using SWAN Open Software”, Proceedings of International Conference on Aquatic Resources and Blue Economy 2019 - AQUABE 2019, KUFOS, pp. 172.
2. Arya Ravindran and Beena Mary John, “Sustainable Shore Protection Measures – A Review”, Proceedings of International Conference on Frontiers in Marine Science Challenges and Prospects - MARICON 2019, CUSAT, pp. 54.
3. Pooja prasanen, Suriyakala C D “An exploration of noise mitigation techniques for superior pre processing of image ” Proceedings of International Conference on Aquatic Resources and Blue Economy 2019 - AQUABE 2019, KUFOS, pp- 169
4. NebuPulickal, Suriyakala C D,”Ergonomics on intelligent underwater communication" Proceedings of International Conference on Aquatic Resources and Blue Economy 2019 - AQUABE 2019, KUFOS pp-175
5. Basim Basheer, Suriyakala C D,” "Underwater Safety " in Ocean Process and Environmental Impact” Proceedings of International Conference on Aquatic Resources and Blue Economy 2019 - AQUABE 2019, KUFOS pp-174
6. Merin Skariah, Suriyakala C D “An exploration on Flood Forecasting Techniques and their Applications”, Proceedings of International Conference on Aquatic Resources and Blue Economy 2019 - AQUABE 2019, KUFOS pp – 61
7. Krishnamoorthy Narasu Raghavan, Suriyakala C D,“Performance Analysis of Convolution Code with Variable Constraint Length in Shallow Underwater Acoustic Communication”,International Journal of ComputerNetwork and Information

Security,2019, 2, 13-20, Published online february 2019 in MECS (<http://www.mecspress.org/>)

8. Susmitha Thankachan, A S Kiran, Vijaya R, Suriyakala C D, "Coastal sediment transport studies along kalpakkam using sediment trend analysis and numerical modeling", International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-X, Issue-X (**Received the Best Paper Award**)
9. Blessan K Varghese, A S Kiran, Vijaya R, Suriyakala C D, "Coastal sediment transport studies along kalpakkam using sediment trend analysis and numerical modeling" International Journal of Innovative Technology and Exploring Engineering (IJITEE), ISSN: 2278-3075, Volume-X, Issue-X
10. Haritha, Sreenath K R, Joshi K K presented a poster in "Mapping Vulnerability of coastal villages of Kerala towards sea level rise" at World Brackish water Aquaculture Conference, BRAQCON 2019, CIBA, Chennai
11. Haritha, Sreenath K R, Joshi K K presented a paper titled Mapping Vulnerability of Coastal villages of Karnataka Towards sea level rise " in National Conference on Integrating Biochemistry & Ecosystem in a changing Ocean environment organized jointly by INCOIS-KUFOS, Panangad.

Few Photos of activities



▶ B.Tech 2019 Batch



Classes of B.Tech Food Technology 2019 Batch was started on August 19, with a one week orientation programme. Vice Chancellor Dr.A.Ramachandran inaugurated the Batch in the presence of Achal Industries Managing Director GiridarPrabhu, Registrar B Manojkumar, Finance Officer Joby George, Director of Research Dr. T.V.Sankar, Eminent Professor Dr.K.Gopakumar, SOST Director Dr.S.Sureshkumar and SOEUT Director Dr.Suriyakala C.D. The orientation programme was focused on subjects like Industrial expert talks for mentoring the students, Developing life skills, Youth Identity, Human values and ethical Human Conduct, The role of Food Technologists in the Food Industry and Entrepreneurial Awareness and Motivation".

SCHOOL OF FISHERY ENVIRONMENT

STAFF STRENGTH

Professor and Director i/c: 1

Professor of Eminence: 0

Associate Professor: 1

Assistant Professor: 2

Adjunct Professor: 0

Adjunct Faculty: 2

Assistant Professor (Contract): 1

Guest Faculty: 6

STUDENT STRENGTH

SL NO	PROGRAMME	1 ST YEAR	2 ND YEAR	TOTAL
1	MSc Remote Sensing & GIS	10	10	20
2	MSc Environmental Science	15	18	33
3	MSc Disaster Management	9	12	21
4	MSc Climate Science	10	-	10

PLAN FOR THE CURRENT ACADEMIC PERIOD

- To equip all the labs with sufficient equipment
- To furnish the classes and to develop smart class room with ICT

DETAILS OF DEPARTMENTAL MEETING CONDUCTED WITH AGENDA

School Governing Council 04.06.2019

Board of Studies Disaster Management 21.06.2019

ACADEMIC ACHIEVEMENT OF STUDENTS

- IEEE Geoscience and Remote Sensing Society Kerala Chapter Best Thesis Awards 2020 (Masters Category) is bagged by Ms. Shincy Francis (1st Prize) and Mr. Karun Jose (2nd Prize) of MSc Remote Sensing & GIS, 2018 Batch

CAPACITY BUILDING OF STAFF AND STUDENTS

1. Three Day Lecture Series in Disaster Management, Environmental Science and Remote Sensing & GIS was organised by SFE from 01-03 April 2019 at FS, Puthuveyppu Campus
2. One Day National Workshop on the “Development of Puthuveyppu Campus of KUFOS as a National/International Education Hub for Mangrove and Coastal Ecosystems” conducted at Fisheries Station, Puthuveyppu on 29-05-2019
3. Field visit was conducted by MSc. Disaster Management, Environmental Science, and Remote Sensing & GIS students on 12 June 2019 at Eriyad Village in Thrissur district to study the severe coastal erosion and flooding due to incessant rains
4. Visual Problem Appraisal Kerala’s Coast 2.0 – Interaction of Dr. Loes Witteveen and Dr. J.S Jeroen Rijke with Faculties and Students of Puthuveyppu Campus on Sep 2019
5. One Day visit of FORV SAGAR SAMPADA - India’s largest biological oceanographic research vessel. Academic community of SFE interacted with scientists/oceanographers on-board and acquainted with state-of-the-art oceanographic instruments such as CTD (Conductivity, Temperature, and Depth measuring instrument), Acoustic Doppler Current Profiler (ADCP), Echosounder, Autoanalyser, Automatic Weather Station etc. (2 October 2019)
6. One Day Seminar on Basic Geodesy and GNSS by Mr. Satheesh Gopi, Former Deputy Chief Hydrographer, Govt. of Kerala on 14-10-2019 at FS, Puthuveyppu
7. National Science Day Celebration at SFE on 3 March 2020. Chief Guest of this occasion was Prof. PK Raveendran, Former Principal, Maharaja’s College, Ernakulam

RESEARCH ACHEIVEMENTS AND PUBLICATIONS OF STAFFS & STUDENTS

1. Ashish K. Chaturvedi, U Surendran, **Girish Gopinath**, K Madhava Chandrana, Anjali N K and Mohamed Fasil CT (2019) Elucidation of stage specific physiological sensitivity of okra to drought stress through leaf gas exchange, spectral indices, growth and yield parameters, Agricultural Water Management, Elesiver, Vol.222,pp 92-104, DOI:[10.1016/j.agwat.2019.05.041](https://doi.org/10.1016/j.agwat.2019.05.041)
2. Surendrana, B Anagha, **Girish Gopinath** and E J Joseph (2019) Long-term Rainfall Analysis towards Detection of Meteorological Drought over Kozhikode

- District of Kerala, *Journal of Climate Change*, Vol.5,(2), pp 23-34
DOI:[10.3233/JCC190010](https://doi.org/10.3233/JCC190010)
3. **Girish Gopinath**, Nimmi S and Surendran U (2020) Landuse Classification of Hyperspectral Data by Spectral Angle Mapper and Support Vector Machine in humid tropical region of India, *Earth Science Informatics*, Springer, DOI: [10.1007/s12145-019-00438-4](https://doi.org/10.1007/s12145-019-00438-4).
 4. Swetha T V, **Girish Gopinath** and Reshmi T R (2020) Isotope mass balance estimation of groundwater recharge in a hard rock tropical river basin in Kerala, India *Journal: Groundwater for Sustainable Development*, Elsevier, DOI:[10.1016/j.gsd.2020.100422](https://doi.org/10.1016/j.gsd.2020.100422)
 5. Muscarella, R., Emilio, T., Phillips, O.L., **Joseph, S.** [together with 223 authors] (in press).The global abundance of tree palms. *Global Ecology and Biogeography*, DOI: 10.1111/geb.13123.
 6. Sajeev, T.V., Swamy, G.E., George, A., Vimod, K.K., Anitha, K., & **Joseph, S.** (2019). Avenue Tree Health Assessment in a Tropical City-A Case Study from Thiruvananthapuram Corporation, Kerala, India.*Climate Change and Environmental Sustainability*, 7, 199-207.
 7. **B Abish** and K Arun (2019). Resolving the weakening of orographic rainfall over India using a regional climate model RegCM 4.5. *Atmospheric Research*, 227, 125-139. (Impact Factor: 4.7) <https://doi.org/10.1016/j.atmosres.2019.05.003>
 8. **B Abish**, Annalisa Cherchi and Satyaban B Ratna (2018). ENSO and the recent warming of the Indian Ocean. *International Journal of Climatology*. 38, 203-214. (Impact Factor: 3.9) <https://doi.org/10.1002/joc.5170>

PLACEMENT CELL-SFE

Intern, Ernakulam DDMA – 4 students

Intern, Kollam DDMA – 1 student

Project Assistant, SIES-IIEM, Navi Mumbai -2 students

Project Assistant, Gujrat Institute of Desert Ecology – 1 student

SCHOOL OF MANAGEMENT AND ENTERPRENUERSHIP

Staff strength	Professor	: 3
	Associate Professor	:4
	Assistant professor	:2
	Adjunct faculty	: 4
	Contract/Guest faculty	:5/8
Student strength	MBA	: 41 & 48
	M.Sc. Statistics	; 22
	LLM	: 25
	PhD	: 12

Conference/Seminar/Workshop/Invited lectures/Industrial Visit organized by the Department

- a) School of Management and Entrepreneurship, KUFOS organized a two day National workshop on Research Methodology with a special emphasis on Statistical packages on 27th & 28th of February, 2020.
- b) As part of the World Investor week, we have organized a session for our PG students on the topics “Plan and Invest According to Your Needs and Goals” on 30th September, 2019 by Mr.Anadhu K Shaji, Deputy Manager, National Stock Exchange of India Ltd, Business Development Head, Kerala.
- c) MBA 2019 batch visited Lockhart Tea Museum, Munnar and Eastern ContimentsPvt Ltd, Adimali during the academic year.



Academic achievements of Faculty

- DrAfsal E.M. is serving as a Member of Review Panels of Advances in Economics and Business, Horizon Research Publishing, USA; Journal of Applied Economics, The University of Warwick, United Kingdom; and Amity Journal of Management Research (AJMR)
- DrAfsal E.M is serving as a Member, PG Board of Studies (Management and Business Studies), M. G University.
- Dr Rajesh K has served as a Resource Person for a Webinar and delivered a talk on “Farmers Story in India” jointly organized by the Department of Economics, S.H. College, Chalakkudy and the Department of Economics, AKI’s Poona College of Arts, Science and Commerce, Pune, Maharashtra on 23rd December, 2020.
- Dr Rajesh K has served as a Resource Person for a Webinar and delivered a talk on “Farmers Bills-2020” organized by the Department of Economics, Nirmala College, Muvattupuzha, Kerala on 8th October, 2020.
- Dr Rajesh K has served as a Resource Person at the One Day National Webinar on “India and its Neighbourhood in Contemporary Times: Economic and Political Perspectives” jointly organized by the Department of Economics and Department of Political Science, Christ College (Autonomous), Irinjalakuda on 28th August, 2020.
- Dr Rajesh K has served as a Resource Person for an International Webinar and delivered a talk on Impact of Covid 19 on Return Migration and the Foreign Remittance in India, organized by the Govt First Grade College, Vijayanagara, Bangalore on 15th June, 2020.
- Dr Rajesh K has served as a Resource Person for a national Webinar and delivered a talk on Post Covid 19 World Order: Uncertainties and Expectations, organized by the Payyannur College, Payyannur on May 27th 2020.
- Dr Rajesh K has served as a Resource Person for an International Webinar and delivered a talk on Impact of Covid 19 on Return Migration and the Foreign Remittance in India, with Special Reference to Kerala, organized by the Little Flower College, Guruvayoor on 20th May, 2020.
- Dr Rajesh K has served as a Resource Person for a talk on “Career Options for Economics Graduates”, at the PG Department of Economics, St Aloysius College, Elthuruth, on 24th February, 2020.
- Dr Rajesh K has delivered an extensionlecture on Union Budgetat the Department of Economics, Nirmala College, Muvattupuzha on 13th February, 2020.

- Dr Rajesh K has delivered an extension lecture on Union Budget at the PG and Research Department of Commerce and Management Studies, of C.Achuthamenon Govt College, Thrissur on 10th February, 2020.
- Dr Rajesh K has delivered an invited talk on Union Budget 2020-21 at the Department of Economics, St Mary's College, Thrissur on 5th February, 2020.
- Dr Rajesh K has delivered an extension lecture on Union Budget 2019-20 at the Department of Economics, Christ (Autonomous) College, Irinjalakuda, on 3rd February, 2020.
- Dr Rajesh K has delivered a talk on "Prospects and Challenges of Blue Economy with a Special Reference to India", at MES Asmabi College, Kodungallur on 27/01/2020.
- Dr Rajesh K has delivered an extension lecture on the topic, "Dynamics of Indian Economy and the Growth Slowdown", at Sree Narayana College, Nattika on 17/01/2020.
- Dr Rajesh K has delivered an extension lecture on Union Budget 2019-20 at the Department of Economics, Dr B.R. Ambedkar Memorial Govt Arts and Science College, Balussery, Kozhikode on 1st August, 2019
- Dr Rajesh K has delivered an extension lecture on Union Budget 2019-20 at the Department of Economics, University of Calicut, Dr John Matthai Centre, Aranattukara, Thrissur on 12th July, 2019.
- Dr Rajesh K has participated in the Five Day Faculty Development Programme in Behavioral Economics, organized by the Department of Economics, St Berchmans College, Changanassery, Kerala in collaboration with the Kerala State Higher Education Council on August 22 to 26, 2020.
- Dr Rajesh K has participated in a Refresher course on Research Methodology for Faculty of Social Sciences organized by the Human Resource Development Centre (HRDC), University of Hyderabad during 20th July 2020 to 1st August, 2020 and obtained grade 'A'.
- Dr Rajesh K has participated in a Faculty Development Program conducted by the Entrepreneurship Development Institute of India at Kerala Forest Research Institute (KFRI) from 21.12.2019 to 03.01.2020.
- Dr Anoop K.K. has attended a three day National Level workshop on SPSS and its application; at the Nodal office of Christ deemed to be University, Thiruvananthapuram, from 14th to 16th November, 2019.
- Dr Anoop K.K. has served as a Resource Person for a Webinar and delivered a talk on "Changing Landscape of retail business" organized by the Department of Management

studies, Co-operative Arts and Science College, Madayi, Kannur, Kerala on 24th November, 2020.

- Dr. Anoop K.K served as the Subject expert for the Guest Lecturer interview for Management Subject (for BBA Course) on 29/06/2020.
- Dr. Anoop K.K., deputed as Sector Magistrate in Kumbalam village for reinvigorating monitoring and enforcement of Covid containment activities.
- Dr. Anoop K.K, presented a paper titled “why mobile learning apps are the future of education: investigating the propelling factors” at the Future of learning conference 2020, Learning to learn, Unlearn and Relearn: Flourishing in the age of Disruptions and innovation, 3-4 January, 2020
- Dr. Anoop K.K, presented a paper titled” Digital ecosystem and policy intervention: A digital storytelling approach in the digital era” at the Future of learning conference 2020, Learning to learn, Unlearn and Relearn: Flourishing in the age of Disruptions and innovation, 3-4 January, 2020
- Dr. Anoop K.K, presented a paper titled “Adoption of mobile learning apps among students: An application of technology acceptance model (TAM)” at the Young Scholars Congress, organised by AKG Centre for study and Research Thiruvananthapuram, on 17th March 2019.
- Sri.Mathew Sebastian, Associate Professor and the students of MSc (Statistics) attended a Webinar on “Diagnostics and Remedial Measure for Common Errors in Application of Statistics” organized by the Department of Agricultural Statistics, College of Agriculture, Navsari Agricultural University, Gujarat during 20 – 21, October 2020.
- Sri.Mathew Sebastian, Associate Professor participated in the International Conference on Aquatic Resources and Blue Economy (AQUABE 2019) organized by KUFOS during 28 – 30, 2019.

Academic achievement of Students

The following students of the Department of Business Administration and Management, SME were qualified in the UGC NET examination



SNEHA STANLY Ansiya Haneefa Rohit T

B) Students paper presentations

- AnandakrishnaDayal K &Geeja K.J of MBA 2018 Batch, presented a paper titled “ Adoption of Google pay among youth: An application of Technology Acceptance Model (TAM)” at 6th National Conference on Banking and Finance (NCBF-2019) On 15th October, 2019 organized by Marian International Institute of Management, Kuttikanam, Kerala.
- AnandakrishnaDayal K and Geeja K.J of MBA 2018 Batch, presented a paper titled “why mobile learning app are the future of education: investigating the propelling factors” at the Future of learning conference 2020, Learning to learn, Unlearn and Relearn: Flourishing in the age of Disruptions and innovation, 3-4 January, 2020.
- Vishnu K.B, Yadhukrishnan K of MBA 2018 Batch, presented a paper titled “Digital ecosystem and policy intervention: A digital storytelling approach in the digital era” at the Future of learning conference 2020, Learning to learn, Unlearn and Relearn: Flourishing in the age of Disruptions and innovation, 3-4 January, 2020.
- Sarath , Amalkumar M.P., and Geeja K.J of MBA 2018 Batch, presented a paper titled “ Attitude of women towards entrepreneurship in the One day National seminar on “ Innovation, Entrepreneurship and Development: Empowerment of Tribes , Women and Small farmers organized by the Research and PG Department of Commerce, Marian College Kuttikanam(Autonomous) Peerumadu, Kerala, held on 23rd January 2020.
- Geeja K.J, AnandakrishnaDayalK and Nandhu G., of MBA 2018 Batch, presented a paper titled “ Internet banking service quality and its effect on e-customer satisfaction; An application of E-SERVQUAL model” in the National Seminar on “ PSU Bank Mergers: A Gambler’s Gimmick or a Synergistic Revamping? Held on 10th January 2020 at the Research and Post Graduate Department of commerce, St. Dominic’s college, Kanjirapally.
- Vishnu K.B, Yadhukrishnan K and Adarsh S., of MBA 2018 Batch, presented a paper titled “Customer Relationship Management practices and its effect on bank’s customer satisfaction and loyalty” in the National Seminar on “PSU Bank Mergers: A Gambler’s Gimmick or a Synergistic Revamping? Held on 10th January 2020 at the Research and Post Graduate Department of commerce, St. Dominic’s college, Kanjirapally.
- Mr. Bejoy Joseph, who is a research scholar under the guidance of Prof. Dr. V.Ambilikumar at SME KUFOS has presented a paper at International Research Symposium on Service Management, organized by International Journal of Service Management. This journal is published by Emerald. This event was hosted by Murdoch University, Dubai. He received the Young Service Researcher Award with cash prize of 500 Dollars. The event was held from 6th of October and wrapped up with



presentation of awards on 9th of October 2019

- Four Ph.D. Scholars, Asha Vijay T., Dhanya T. S., Fiona Sheenu Francis and Liya Peter, attended five days International Workshop on Research Methodology in Social Sciences: Multivariate analysis using SPSS and AMOS jointly organised by Department of Commerce, Economics and Statistics, Government College, Tripunithura, and sponsored by Directorate of Collegiate Education, Government of Kerala, during 26th to 30th, November 2019.
- Mr. Jithin Benedict, research scholar, under the guidance of Dr M.S.Raju, SME, received the Best Paper Award for his presentation on "The Influence of Price Consciousness on the Purchase Intention of Online Luxury Products." at the National Conference on Invasion of Technology in Marketing and Society 2019 organized by Viswajothi School of Management Studies, Vazhakulam.

Ph.D. Awarded

Thesis Title	Name of the student	Name of the supervising Faculty Member
Study on Influence of online advertisements on the buying behavior of FMCG Consumers in Kerala	Ambili K.P.	DrV.Ambili Kumar
The Impact of Psychological Contract Breach among Bank Employees in Ernakulum District, Kerala	Mr.Sabu Varghese	DrM.S.Raju
Perception of online consumers towards luxury products: A Study with reference to young professionals in Kerala	MrJithin Benedict	DrM.S.Raju

Research achievements and publications of Staff

Ambili K.P. and Ambilikumar, V (2019), a study on preference of women consumers towards online advertisements with special reference to Kerala, International Journal for Scientific Research and Development, Vol.7, Issue 6, August 2019, ISSN 23210613, pp.375-379.

S.Anjali, V.G., Avinash andAnoop K.K., (2019), Adoption of mobile learning Apps among students: Journal of advanced research in dynamical and control systems, Vol-11, 04-Special Issue, ISSN 1943-023X, (**Scopus**).

GopakumarSwathy, Nair M.B. Bhadra andAnoop K.K., (2019).Impact of Celebrity endorsement

on surrogate advertisement among Youth in Kerala, *Indian Journal of Public health research & development*, Vol-11, Issue (5), ISSN – 0976-0245 (**Scopus**)

P. Panjami, L.Lakshmi and Anoop K.K., (2019), Impact of service quality dimensions on customer satisfaction in retail banking, *Journal of Advanced Research in Dynamical & Control Systems*, Vol- 11, 04- Special Issue, ISSN 1943-023X, (**Scopus**).

Jithin Benedict and M.S. Raju, (2019), Mediating role of perceived risk on relationship between Perception towards online luxury shopping and online purchase intention: A study with reference to young professionals in India. *Asian Review of Social Sciences. Special Issue ICMAS-1, Vol.8, No.S1. ISSN: 2249-6319*. P 36-41.

Sabu Varghese and M.S. Raju, (2019), Psychological contract breach and organizational outcomes: Moderating effect of tenure. *Asian Review of Social Sciences. Special Issue ICMAS-1, Vol.8, No.S1. ISSN: 2249-6319*. P 46-50.

Jithin Benedict and M.S. Raju, (2019) Are Online Consumers Price Conscious? A study with reference to India Youth on Price Consciousness and Purchase Intention of Online Personal Luxury Products. *International Journal for Research in Engineering Application & Management (IJREAM).ISSN: 2454-9150 Vol-4 Issue 12, P 263-270*.

Jithin Benedict and M.S. Raju (2019), Rich, Extravagant and Hedonistic: A Study with Reference to Indian Youth on Perceived Hedonism and Purchase Intention of Online Personal Luxury Products. *International Journal of Advance and Innovative Research). ISSN: 2394-7780 Vol-6 Issue 2, P 96-104*.

Asha Vijay T. and M.S. Raju (2019), Marketing and Exchange of Farm Products in Facebook Groups: A Case Study. *Indian Journal of Marketing, ISSN 0973-8703 Vol.49 Issue 10, P58-68*.

Raju M.S., T.V. Amrose and Mathew Sebastian, (2019), Seafood export from Kerala: Trends and Future Prospects. International Conference on Aquatic Resources and Blue Economy (AQUABE 2019) 28-30 November , Organized by Kerala University of Fisheries and Ocean Studies, Kochi, Kerala. Book of Abstracts P 184. 2019.

Afsal E.M.(2019), ‘Blue Economic Resources: Prospects and Challenges for India and ASEAN States’, International Conference on Aquatic Resources and Blue Economy, AQUABE 2019 organized by KUFOS at Kochi during 2019 November 28-30.

Afsal E.M.(2020), Technology Adoption, Growth and Human Resource Accumulation: A Study of Banks, Seventeenth AIMS International Conference on Management organized by AIMS International - The Association of Indian Management Scholars International and Indian Institute of Management Kozhikode at IIM Kozhikode during 2020 January 2-4 .

Afsal (2020), Linkages among Corporate Governance, Intellectual Capital and Firm Performance: Literature Review, *International Journal of Disaster Recovery and Business Continuity*, 11(2), 299-311, 2020

Afsal E.M (2020). Volatility and Information Behavior: A Study on Shariah Index and General Index. *Journal of King Abdulaziz University – Islamic Economics*, 7383-1018, 33(1)

Afsal E.M. (2020), Star Rating: Role of Sales Person at Retail Outlets in Promoting the Benefits, Seventeenth AIMS International Conference on Management, pp. 1231-1233, ISBN: 978-1-943295-14-2.

Afsal E.M. (2020), A Study on Entrepreneurial Intention and Career Mobility: Among MSME Entrepreneurs in Kerala, Seventeenth AIMS International Conference on Management, pp. 413-416, ISBN: 978-1-943295-14-2

Rajesh K., (2020), ‘Regional Comprehensive Economic Partnership Negotiations and India-Do we really miss the opportunity’? *Southern Economist*, (ISSN: 0038-4046), pp.7-8, Vol.58, No.17, January 2020.

Rajesh K (2020), “*KovidanandharaKeralam*”, (Kerala: Post Covid 19), (ISBN: 9789354081613), pp.162-168), 2020 in a Malayalam book entitled as “*KovidKalam: Anubhavam, Vicharam, Vicharana*”, edited by Ashraf P.C. and Jaleel Padanna, Sahora Books, Padanna.

Rajesh K (2020), “*Marunna Indian KarshikaMekhala: OruSamakalikaAvalokanam*” (Changing Indian Agriculture Sector: A Contemporary Analysis” (ISBN:9788194696308), pp.44-58, 2020 in the Malayalam book entitled as “*Marunna India: Nayangal, Parishkarangal*” edited by Jomon Mathew and Pradeep C., Cormetrics Technologies, Thiruvananthapuram.

DrAnoop K.K. has attended a three day National Level workshop on SPSS and its application; at the Nodal office of Christ deemed to be University, Thiruvananthapuram, from 14th to 16th November, 2019.

DrAnoop K.K has served as a Resource Person for a Webinar and delivered a talk on “Changing Landscape of retail business” organized by the Department of Management studies, Co-operative Arts and Science College, Madayi, Kannur, Kerala on 24th November, 2020.

Dr. Anoop K.K served as the Subject expert for the Guest Lecturer interview for Management Subject (for BBA Course) on 29/06/2020.

Dr. Anoop K.K., deputed as Sector Magistrate in Kumbalam village for reinvigorate monitoring and enforcement of Covid containment activities.

Dr. Anoop K.K, presented a paper titled “why mobile learning app are the future of education: investigating the propelling factors” at the Future of learning conference 2020, Learning to learn, Unlearn and Relearn: Flourishing in the age of Disruptions and innovation, 3-4 January, 2020

Dr. Anoop K.K, presented a paper titled” Digital ecosystem and policy intervention: A digital storytelling approach in the digital era” at the Future of learning conference 2020, learning to learn, Unlearn and Relearn: Flourishing in the age of Disruptions and innovation, 3-4 January, 2020

Dr. Anoop K.K, presented a paper titled “Adoption of mobile learning apps among students: An application of technology acceptance model (TAM)” at the Young Scholars Congress, organised by AKG Centre for study and Research Thiruvananthapuram, on 17th March 2019.

b) Popular Press articles

Rajesh K, (2020) ,“*AdrishyakarathinuShakthiPakaranOruSmithianAparatha*” (Union Budget Analysis), appeared in the editorial page of Maathrubhumi News Paper on 3rd, February, 2020.

Rajesh K , (2020), “*AayasarahithaJeevithamSadhyamavumo*” (Is it Possible to be Hustle free life), appeared in the editorial page, Mathrubhumi News Paper on 6th July, 2019

Rajesh K,(2020), “*MarendeThiranjeduppuNadathippu*” (Don’t we need to change the Election Procedure?), appeared in the editorial page, Mathrubhumi News Paper on 17th May, 2019.

Rajesh K , (2020), ‘KIIFB’s Masala Bond Issue: A Derailed Debate’, Madhyamam English Online edition, dated May 4th 2019

Rajesh K,(2020), “*Virus Akramanam: NavalokaNirmithikkuVaathilThurakkumbol*” (Virus Attaach: Opportunity for a New World Order”, pp. 12-14, Mathrubhumi GK & Current Affairs, (Mal.), May, 2020.

Rajesh K, (2020), “*VipanikkuShakthiPakarumbol*”, (Strengthening the Financial Market), pp.28-30, Mathrubhumi GK & Current Affairs, (Mal.), March, 2020.

Rajesh K,(2020), “*Prathisandhikkalathe Bank Layanam*”, (Bank Merger during the time of Economic Turmoil), pp.10-14, Mathrubhumi GK & Current Affairs, (Mal.), October, 2019

Rajesh K, (2020), “*AvasaramKaathuCheruppakkarudeRajyam*”, (Youngster’s Country is Waiting for Opportunities”, pp.16-18, Mathrubhumi GK & Current Affairs, (Mal.), July,

FACULTY OF FISHERIES

College of Fisheries, Panangad, Kochi which accommodated the Faculty of Fisheries was the third college established in India to impart professional fisheries education in the State. Faculty of Fisheries was established in 1979 under the Kerala Agricultural University with a student intake capacity of 30 per annum. The College along with the research station at Puduveyypu was elevated to the status of the Kerala University of Fisheries and Ocean Studies in 2010. The Faculty of Fisheries has seven departments with the Office of the Dean that coordinates and administers the academic, financial and administrative activities of the Faculty.

The Faculty offers different academic programmes such as Bachelor of Fisheries Science (BFSc), Master of Fisheries Science (MFSc) in seven disciplines and PhD programme in all the departments under the ICAR stream. The intake capacity of BFSc was 50 till 2016, which was raised to 80 students in 2017. The undergraduate programme was conducted in two batches of 40 each to provide adequate hands-on experience in the practical and field-oriented activities to the students. All the departments conduct research and extension programmes in various aspects of fisheries, aquaculture, health management, environmental studies, fish processing, fishing technology and fisheries extension, economics, statistics and management. The Faculty has been accredited by the ICAR for a period of 5 years from 2017 to 2022. Various research programmes under disciplines such as aquaculture and fish nutrition, aquatic environment and health, microbiology and biotechnology, biodiversity assessment and conservation, pollution monitoring programmes, impact of climate change, eco-toxicology, water quality management in fish/shrimp cultural systems, environmental biotechnology, fish processing technology, product development and quality control are also undertaken by the staff members of the Faculty. The research programmes are carried out under external funded research projects as well as institutional funds under plan programme. All faculty members are also undertaking extension activities of the respective departments in addition to the teaching and research work to disseminate the technologies developed and research leads to the beneficiaries directly or to the officials in the inline department (Fisheries department of Govt of Kerala)

The Staff Members of the Faculty has proficiency in aquaculture, aquatic animal health, fisheries resource management, aquatic environment, fishing

technology, fish processing, freshwater and marine ecosystem studies, fisheries economics, statistics, management and extension. The faculty has a Board of Studies for undergraduate programme and department level Board of Studies for each department to take care of the postgraduate education.

Aim and Objectives of the Faculty of Fisheries

- To promote quality education in Fisheries and allied subjects (UG, PG & Ph.D)
- To undertake the contemporary research in aquaculture, aquatic animal health, aquatic environment management, fisheries resource management, fishery engineering, fish processing technology and fisheries economics, statistics and extension.
- To develop farmer friendly technologies and packages for improving the farmers income and solving the field level problems associated with aquaculture, fisheries management and fish processing sector
- To conduct training programmes on the above aspects to the students, farmers, fishermen, officials of the government departments, technologists and other stake holders.

COURSES OFFERED

Undergraduate Programme

- a. Bachelor of Fisheries Science (B.F.Sc) has an intake capacity of 80 seats with 15 % of the seats reserved for students from all across the country through a competitive national level test and admissions conducted by ICAR. Two seats are also reserved for students from Lakshadweep. Specific quota of 16 seats (20%) are also earmarked for children of fishermen

The BFSc programme is conducted in 8 semesters covering 180 credits with 61 courses of 140 credits in six semesters and Student Ready Programme with Experiential learning programme of 40 credits in two semesters of the final year.

Summary of Credit Load			
Sl. No.	Department	No. of courses	Credit load
1	Aquaculture	12	29(18+11)
2	Fisheries Resource Management	9	23(14+9)
3	Department of Aquatic Animal Health Management	7	18(11+7)
4	Aquatic Environmental Management	8	20(12+8)
5	Fish Processing Technology	9	21(13+8)
6	Fisheries Engineering	6	14(8+6)
7	Management Studies	8	15(9+6)
8	Comp. Non-credit courses (Swimming & Phy. Edn)	2	-
	Sub total	61	140(85+55)
	Student READY In-Plant Attachment Programme	1	10(0+10)
	Student READY Rural Fisheries Work Experience Programme	1	8(0+8)
	Study Tour (in and outside State)	1	2(0+2)
	Student READY Experiential Module	1	17(0+17)
	Project Work	1	2(0+2)
	Seminar	1	1(0+1)
	Total	06	40(0+40)
	Grand Total	67	180(84+96)

The Student READY Experiential Module introduced newly in the BFSc programme in 2016 that provides the students the actual experience to implement the knowledge they gained in the courses in the field. The ELP is introduced with view to develop necessary skills in the graduates who in turn will be Field Ready and also entrepreneurial. Our first of BFSc graduates who underwent the Student READY modules have passed out in June 2020.

Postgraduate Programmes

Seven postgraduate programmes are offered in six departments with the total intake capacity of 50 students per annum. In all the disciplines, 25% of the seats are reserved for ICAR quota.

- a. MFSc Aquaculture (8 seats)
- b. MFSc Fish Nutrition and Feed Technology (5 seats)
- c. MFSc Fisheries Resource Management(8 seats)

- d. MFSc Fish Processing Technology (8 seats)
- e. MFSc Aquatic Environment Management (8 seats)
- f. MFSc Aquatic Animal Health Management(8 seats)
- g. MFSc Fish Engineering Technology(5 seats)

The MFSc students undergo course work of 34 credits spread over two semesters, 20 credit of research work of two semesters and one credit seminar to be completed in the third semester. The syllabus proposed by ICAR nationally for the courses are followed in each discipline of MFSc offered. At the end of the research work each student has to submit a thesis of the work done which would be evaluated by an External Examiner followed by a Viva voce conducted by the Advisory Committee.

Ph.D Programmes

Doctoral degree programmes leading to Ph.D. are offered by all the seven Departments under the Faculty of Fisheries. The programme is conducted in six semesters with two semesters of course work with 28 credits and 2 credit seminars. Four semesters are set aside for research having 45 credit load.

In addition, two PG diploma programmes (1. PG Diploma in Aquarium Science and Technology and 2. PG Diploma in Industrial Aquaculture) and one diploma course (Diploma in Brackish water and Marine Aquaculture) is also offered by the faculty.

Scholarships, fellowships and stipend

Students admitted under ICAR quota are eligible to receive national talent scholarship for the undergraduate and postgraduate programmes. For PhD, two disciplines are awarded with senior fellowship by ICAR. University also offers scholarships and fellowships to meritorious students admitted to the undergraduate and postgraduate programmes. Students in receipt of any other scholarship, fellowship or financial assistance from any other source during the period will not be considered for the award of KUFOS fellowships. ICAR and Govt of Kerala jointly offers stipend to the BFSc students who undergo Rural Fisheries Work Experience under the Student READY programme.

There are seven Departments working under Faculty of Fisheries.

FACULTY OF FISHERIES –Dept of Aquaculture

Department: Department of Aquaculture

Staff strength	Professor	: Dr. Shyama
	Associate Professor	: Dr. K. Dinesh,
	Assistant Professor	: Dr. Chiranjiv Pradhan
		: Dr. Binu Varghese
		: Dr. Rejish Kumar V J
Adjunct faculty	:	
Contract/Guest faculty	: Dr. Rachel Fernandez	
Student strength	B.F.Sc / B.Tech – year wise	: 1 st year-
		: 2 nd year-
		: 3 rd year-
		: 4 th year-
	MFSc/ M Sc (I year)	:
	MFSc/ M.Sc (II year)	:
PhD	: 02	

Details of Departmental meeting conducted with agenda

1. Allocation of funds to various labs
2. Inputs for ICAR report
3. Discuss the online classes for students in COVID-19 pandemic.
4. Discuss the conduction of online exam for students.

Conference/Seminar/Workshop/Invited lectures organized by the Department

- Organized a One Day Seminar on “New Thoughts in Aquaculture” in association with Department of Aquaculture on 10-07-2019.
- Aqua Farmers conclave-30-11-2019
- International conference on Aquatic resources and Blue economy- Aquabe-2019.
- Depart of Aquaculture has organized one day webinarfor farmers of Kerala ‘Distant dynamic interactive series in aquaculture’ on 01-06-20
- Depart of Aquaculture has organized one day International webinarfor farmers of Kerala ‘Environment friendly aquaculture on 05-06-20
- Depart of Aquaculture has organized one day International webinarfor farmers of Kerala “Aquaculture in urban metabolism of major cities” on 12-06-20
- Distant dynamic interactive series for farmers- Pearl spot farming and challenges on 15-06-20

- Depart of Aquaculture has organized one day webinarfor farmers of Kerala ‘Culture of *Penaeus vannamei*’ on 19-07-20
- Depart of Aquaculture has organized one day webinarfor farmers of Kerala ‘Biofloc culture systems suitable for Kerala’ on 26-07-20
- Awareness programme on Mangrove based organic shrimp farming for farmers on 27/06/20.
- Awareness programme on Ecological significance of mangroves for local fisheries folks on 28/06/20
- Awareness programme on Need of conserving mangroves for children on 30/06/20.
- National level Essay competition on Mangrove and Environment for college students.
- State level Drawing competition on “Ecological significance of Mangroves” for school students up to 12 level.
- Depart of Aquaculture has organized one day webinarfor farmers of Kerala ‘Potential of cage culture’ on 03-07-20
- Depart of Aquaculture has organized one day webinarfor farmers of Kerala ‘Culture of Tilapia’ on 10-07-20
- Depart of Aquaculture has organized one day webinarfor farmers of Kerala on ‘Culture of freshwater prawn’ on 17-07-20
- Depart of Aquaculture has organized one day webinar in association with COOP on Organic aquaculture on 15-09-20
- Agricultural Education Day webinar organized by Dept. of Aquaculture in association with Directorate of Extension on 03-12-20

Academic achievements of Faculty

1. **Dr. Dinesh K:** Certificate of Appreciation from College of Veterinary Medicine, Department of Anatomy, Physiologyand Pharmacology, 2019, Auburn, USA.
2. **Dr. Dinesh K:** Certificate of Appreciation from School of Fisheries, Aquaculture and Aquatic Sciences, , 2019, Auburn, USA.
3. **Dr. Chiranjiv Pradhan** have successfully completed 126th orientation course which was held from 2nd November to 29th November 2018 by UGC-HRDC Pondicherry University and obtained gradeA.
4. **Rejish Kumar V. J,** Chandhini S, Varsha C. Mohanan, Bushra Trumboo, Anvar Ali P. H, Rachel Fernandez (2019) Transcriptome analysis of *Etroplus suratensis*: Identification of Growth, Reproduction and Immune-related genes and Microsatellite Markers, presented in World Brackishwater Aquaculture Conference (BRAQCON 2019) held at CIBA, Chennai on 23-25th January 2019 .(**Best Poster Award**)
5. Delivered lecture on “Live feeds used in hatcheries and brood stock management” to foreign delegates of M/S Aker Biomarine on 5.12.2019 at KUFOS, Kochi.
6. **Dr. Binu Varghese**, has conducted a session on “Ornamental Fish Culture” for entrepreneurs at ICAR-CIFRI, Kochi on 12.12.2019 funded by NFDB
7. **Dr. Binu Varghese** has delivered lecture on “Scope of Pearlsport culture and protocols” to SC community Capacity building programme of ICAR-CCARI, Goa on 4.11.2019.

8. **Dr. Binu Varghese**, has delivered lecture on “Breeding and Rearing of Aquarium Fishes” in Fish Farming and Recent Technological Development. organised by KUFOS, 18 to 20 February 2020.
9. **Dr. Binu Varghese** has conducted a session on “Aquaculture potential of freshwater fishes” organized for aquafarmers of North Kerala by ADCOS, at Tirur, Malappuram. March 2020.

Academic achievement of Students

1. Three students got Eras-Mundus Scholarships for post-graduation.

Capacity building of Staff and Students

1. **Dr. Rejish Kumar V.J** has attended hands-On Training on “Next Generation Sequencing and Analysis” (Genomics, Metagenomics and Bioinformatics) jointly organized by Adelbert Innovation Research and Bengaluru Genomics Centre (BGC) held at Kerala University of Fisheries and Ocean Studies (KUFOS), Cochin from November 04-07,2019 (4days)
2. **Dr. Binu Varghese**, has attended ‘Orientation Programme’ at UGC-HRDC, University of Kerala from 26.4.2019 to 23.5.2019.
3. **Dr. Binu Varghese** has participated in 5-day training programme on “Developing Winning Research Proposals on Digital Solutions in Agricultural” organized by National Academy of Agricultural Research Management, Hyderabad during 19-23 November 2019.
4. **Dr. Binu Varghese** has attended ISRO-NICRA programme on ‘Transfer of wetland mobile app and wetland demonstration’ by Space Applications Centre (SAC) – ISRO at ICAR – CMFRI on 30.09.2019

Research achievements and publications of Staff and Students

1. **Dinesh K**: Mangrove ecosystem and coastal livelihood with special reference to Indian scenario. Spring 2020 Issue 30: 24-27. (2020), *Journal of the Commonwealth Human Ecology Council*
2. Nilima Priyadarshini^{1*}, **Dinesh Kaippilly**, Chiranjiv Pradhan and Marco Saroglia: Effect of Guar Sprout Meal on the Growth, Nutrient Utilization and Hematological Characteristics of Genetically Improved Farmed Tilapia (GIFT) Fingerlings. *Int.J.Curr.Microbiol.App.Sci.* 9(7): 3587-3599. (2020)
3. Nilima Priyadarshini, **Dinesh Kaippilly** and Marco Saroglia: Digestive enzyme activities in Nile tilapia, *Oreochromis niloticus* fed diet supplemented with guar sprout meal. *JEZS* 2020; 8(5): 2181-2186 (2020)
4. **Dinesh K**, Geeji Madathil, Kavin Duraisamy (2020): Mullet culture in India: present status and future prospects. International Book Chapter.] Eds. Ichiu Liao and Eduardo Leano (2020)

5. **Pradhan C.**, Gopinath, D.B., Namitha D., Nikhila P., Sankar, T.V (2020). Replacement of soybean meal with cashew nut meal as an alternative protein source in the diet of tilapia, *Oreochromis mossambicus*. *Aquaculture Research*. Doi: 10.1111/are.14512.
6. **Pradhan C.**, Giri, S. S., Mohanty, T. K., Mohanty, S. N (2020). Feeding a diet containing plant ingredients at different levels influenced growth performance, carcass composition and blood biochemical parameters in Indian major carps grown in polyculture earthen ponds. *Tropical Animal Health and Production*. 52, 1769–1777. doi:10.1007/s11250-019-02184-7.
7. **Pradhan C.**, Das, D.R., Mohanty, T. K., Giri, S. S. (2020). Evaluation of nutritive value, fatty acid composition and lipid quality indices of freshwater catfishes and murels. *Journal of Aquaculture and Marine Biology*. 9 (3), 80-85.
8. **Pradhan, C.**, Giri, S.S., Mohanty, S.N., Rajendran, N. (2019). Effect of different feeding levels of plant ingredient-based feed on fillet fatty acid profile, carcass trait and sensory characteristics of Indian major carps reared in polyculture ponds. *Journal of World Aquaculture Society*. 50(2): 374-389
9. **Pradhan, C.**, Giri, S.S., Mohanty, S.N., Nayak, K.C. (2020). Influence of fishmeal replaced diet on nutrient digestibility, digestive enzyme activity and whole-body fatty acid profile of Indian major carp, *Cirrhinus mrigala*. *Journal of Basic and Applied Zoology* (Accepted)
10. Sasidharan, A., Michu, V. J. **Pradhan, C.** Sabu S. (2020). Utilisation of isoelectric precipitation to recover fish protein isolate from seafood processing waste. *Indian Journal of Fisheries* 67(3): 99-105. DOI: 10.21077/ijf.2020.67.3.88426-11.
11. Nilima P., Dinesh K., **Pradhan, C.**, Saroglia M. (2020). Effect of Guar Sprout Meal on the Growth, Nutrient Utilization and Hematological Characteristics of Genetically Improved Farmed Tilapia (Gift) Fingerlings. *Int.J.Curr.Microbiol.App.Sci*. 9(07): 3587-3599. doi: <https://doi.org/10.20546/ijemas.2020.907.419>
12. **Pradhan, C.** and Sasidharan, A (2020). Sensory characteristics: a novel way of evaluation of food fishes. "Sasthra-The Indian Journal of Science and Technology" (Accepted)
13. Preena P.G, Arathi D, **Rejish Kumar V.J** and Raja Swaminathan T, 2020. Plasmid-mediated antimicrobial resistance in motile aeromonads from diseased Nile tilapia (*Oreochromis niloticus*). *Aquaculture Research*. <https://doi.org/10.1111/are.14886>
14. Sneha K.G. Robin P, **Rejish Kumar V.J** and Devika Pillai , 2020. Investigating the impact of hospital antibiotic usage on aquatic environment and aquaculture systems: A molecular study of quinolone resistance in *Escherichia coli*. *Science of the Total Environment*, 748, 141538.
15. Sneha K.G, Rahul K, **Rejish Kumar V, J**, Robin P. Philip M and Devika Pillai, 2020. Detection of New Delhi Metallo-β-lactamase 1 and Cephalosporin Resistance Genes Among Carbapenem-Resistant Enterobacteriaceae in Water Bodies Adjacent to Hospitals in India. *Current Microbiology*, 77: 2886-2895.
16. Tincy Varghese, **Rejish Kumar V.J**, AmruthaGopan, Rajendran K.V, Sajina K.A, Mishal P and Asim K Pal, 2020. Dietary arginine modulates nonspecific immune

- responses in Indian Major Carp, *Cirrihnusmrigala* exposed to hypoxia. *Aquaculture*, 529: 735613
17. Preena PG, Swaminathan TR, **Rejish Kumar V.J** and Singh ISB, 2020. Unravelling the menace: Detection of antimicrobial resistance in aquaculture. *Letters in applied microbiology*. 71: 26-38.
 18. Jose D, Preena, PG, **Rejishkumar VJ**, Philip R, Singh ISB, 2020. Metaproteomic insights into ammonia oxidising bacterial consortium developed for bioaugmenting nitrification in aquaculture systems. *Biologia*. <https://doi.org/10.2478/s11756-020-00481-3>. (Impact factor 0.81)
 19. Preena PG., Swaminathan TR, **Rejish Kumar VJ**, Singh ISB, 2020. Antimicrobial resistance in aquaculture: a crisis for concern. *Biologia*. 75:1497-1517.
 20. Chandhini S, Sneha Varghese, SibyPhilip and **Rejish Kumar VJ**, 2020. Deciphering the mitochondrial genome of Malabar snakehead *Channadiplogramma* (Teleostei; Channidae). *Biologia*75, 741–748
 21. Tincy Varghese, **V.J Rejish Kumar**, Garima Anand, Subrata Dasgupta and Asim Kumar Pal, 2019. Dietary GABA enhances hypoxia tolerance of a bottom dwelling carp, *Cirrhinusmrigala* by modulating HIF-1 α , thyroid hormones and metabolic responses. *Fish Physiology and Biochemistry*. 46: 199-212
 22. Chandhini S, Yamanoue Y, Yokobori SI, Thampy S and **Rejish Kumar V.J.** 2019. Mitogenome analysis of dwarf pufferfish (*Carinotetraodontravancoricus*) endemic to southwest India and its implications in the phylogeny of Tetraodontidae. *Journal of Genetics*.98: 105
 23. Chandhini S and **V.J. Rejish Kumar**, 2019. Transcriptomics in aquaculture: current status and applications. *Reviews in Aquaculture*. 11(4): 1379-1397.
 24. P.G.Preena, CiniAchuthan, **V. J. Rejish Kumar**, R.Boobal, Deepa.G.D, JayeshPuthumana, SunithaPoulose, I.S.Surekhamol and I.S. Bright Singh, 2019. Community composition of marine and brackishwater ammonia-oxidizing consortia developed for aquaculture application. *Water Science and Technology*. 79(5): 1017-1028.
 25. Chandhini S, Arjunan V.M, Anvar Ali P.H, Rajeev Raghavan, Devika Pilli and **Rejish Kumar V.J**, 2019. Complete mitogenome analysis of endangered Malabar Mahseer(*Tor Malabaricus*). *Conservation Genetics Resources*. 11(2): 185-189.
 26. Preena P.G., **Rejish Kumar V.J**, Achuthan C., George R., Boopal R., Nair R.R and I.S. Bright Singh, 2018. Diversity of marine and brackish water nitrite-oxidizing consortia developed for activating nitrifying bioreactors in aquaculture. *International Journal of Environmental Science and Technology*. 15(11): 2399-2410
 27. **Dr. Binu Varghese** has successfully bred Malabar Dwarf Puffer, *Carinotetraodontravancoricus* the most exported endemic ornamental fish from India. The first known captive breeding success in the country.
 28. **Dr. Binu Varghese** has achieved successful captive breeding of endemic fish *Prestolepisrubripinnis* having good ornamental as well as aquaculture potential.
 29. **Dr. Binu Varghese** has successful in the production of all male pearlspot, *Etroplussuratensis*.

Book Chapter

1. **Pradhan, C.**, Rachel F., Namitha D., Nikhila P. 2019. Farmers hand book on “Farm made feed and feeding of some important cultured fish species of Kerala”. Kerala University of Fisheries and Ocean Studies.
2. **Pradhan, C.**, Nikhila, P., Namitha, D. 2020. Nuts as dietary source of fatty acids and micronutrients in human health. Nuts and Nut Products in Human Health and Nutrition. Intech Open. DOI: 10.5772/intechopen.94327.
3. Benson K.V, **Rejish Kumar V.J** and Preetha R (2020). Nucleic acid based molecular techniques in microbial food safety. In: Devaraj T, Leo M.L.N, Saher I, Jeybalan S (Eds). Sequencing Technologies in Microbial Food Safety and Quality (ISBN:978-0-367-35118-2). CRC Press, Florida, USA. (in Press)
4. Preena. P. G, SunithaPoulose, I. S. Surekha mol, **V.J. Rejish Kumar** and I.S.Bright Singh (2019). Microbial genetic diversity of nitrogen fixing community. In. Modern trends in agriculture (ISBN 978-81-934009-6-8). Scire Science Publishers, Kochi, Kerala, India.

Academic/Research/Extension activities of Faculty outside the University

- **Dr. Rejish Kumar V.J** invited as a resource person and delivered a talk on ‘Water quality management in sustainable aquaculture production systems’ in the **National workshop on water quality management for aquaculture** organized by National Institute of Puducherry, Karaikal on November 16, 2020.
- **Dr. Rejish Kumar V.J** delivered a talk on “Recent advances in sustainable aquaculture production system” in the **International conference on Innovative and Sustainable Aquaculture** organized by Mar Athanasius College, Kothamangalam on February 3-4. 2020.
- **Dr. Binu Varghese** has participated in live interactive Radio Programme on “Prospects of Ornamental Fish Culture” on 31.1.2020 in KadalKadalolamAkashvani, Kochi.
- **Dr. Binu Varghese** has organized public awareness programme “Vibrant Vembanad Campaign” to cleanup plastic waste from Vembanad Lake by engaging 250 volunteers on 16.10.2019 at Marine Drive, Kochi.
- **Dr. Binu Varghese** has coordinated Radio Programme (Yuvavani) regarding Vembanad cleanup programme. Recorded and broadcasted as two parts in AIR, Kochi.(with repeat broadcast). 18/11/2019, 21/11/2019 & 8/12/2019 & 26/12/2019.
- **Dr. Binu Varghese** has organised ‘Blood Donation Camp’ at KUFOS Amenity center, Madavana in association with Ernakulam General Hospital on 16.1.2020.
- **Dr. Binu Varghese** has organised ‘Eye Checkup Camp’ in association with Lotus Eye Care and Research, Kochi for public on 24.9.2019
- **Dr. Binu Varghese** has organised ‘Cochin Fisheries Harbour cleanup and Plastic pollution awareness at Manassery Fishing Village’ in association with NETFISH-MPEDA as part of 150th year of Mahatma on 2nd October 2019.
- **Dr. Binu Varghese** has organised World Environment Day 2020 by planting saplings at KUFOS and National Highway in association with NHA on 5th June 2019.

- **Dr. Binu Varghese** has conducted AIDS and Drug Abuse awareness programme in association with District Health Department on 18.12.2020
- **Dr. Binu Varghese** has organized in associated with Lakeshore Hospitals in the Cancer awareness programme on World Cancer Day Feb 4th 2020.

Meetings attended by faculty members outside the University

1. Nithin, J., Namitha, D., Nikhila, P., Pillai, D., ***Pradhan, C.** (2019). Effect of Cassia roxburghii as a plant-based feed additive on growth performance, nutrient utilisation and health status of Oreochromismossambicus. World Brackishwater Aquaculture conference (BRAQCON), CIBA, Chennai, 23-25 January.pp 143.
2. Balagopinath, D., Namitha, D., Nikhila, P., **Pradhan, C.**, (2019). Replacement of soybean meal with Cashew Nut Meal (CNM) as an alternative protein source in the diet of tilapia, Oreochromismossambicus. World Brackishwater Aquaculture conference (BRAQCON), CIBA, Chennai, 23-25 January.pp 149
3. **Dr. Binu Varghese** has attended Kerala Innovation Day 2020 organised by K-DISC at Thiruvananthapuram on 23.1.2020

FACULTY OF FISHERIES –Dept of Aquatic Animal Health

Staff strength

Professor	: 1
Associate Professor	:
Assistant Professor	: 1
Adjunct faculty	:
Contract/Guest faculty	:6

Student strength

B.F.Sc / B.Tech – year wise

MFSc/ M Sc (I year) : 5

MFSc/ M.Sc (II year) : 9

PhD :10 (Four PhD scholars registered with Faculty of

Ocean Studies and one PhD scholar registered with MG University working in the Department of AAHM under the supervision of Professor & Head, AAHM, five PhD scholars with Faculty of Fisheries, AAHM department)

Details of Departmental meeting conducted with agenda: Weekly meetings held with the research staff.

Conference/Seminar/Workshop/Invited lectures organized by the Department:

Sl No	Sem/Conf/Training/Workshop	National/International/State level/Regional	Title of the event, date/duration	Faculty-in-charge of the program and Department	Funding agency and amount	Total No of participants – National & International
1	Awareness program	Regional Chettupuzha , ThrissurDist	Emerging diseases in aquaculture. And their management through best management practice 05/04/201	Dr. Devika Pillai AAHM NSPAA D	NFD B	50

			9			
2	Awareness program	Pattanakad , Alappuzha Dist.	Emerging diseases in aquaculture. And management through best management practice 05/02/2020	Dr. Devika Pillai AAHM NSPAA D	NFD B	50
3	Awareness program	Kozhenchery , Pathanamthitta	Emerging diseases in aquaculture. And management through best management practice 14/02/2020	Dr. Devika Pillai AAHM NSPAA D	NFD B	80

- Conducted two daysworkshop on **R-programming in Data analysis**, 27-28 May, 2019 for post graduate students, researchers and scientists. The workshop was led by Dr. Deepak George Pazhayamadom, Research Officer, Paspaley Pearling Company, Australia
- SujaAarattuthodiyil from Thad Cochran National Warmwater Aquaculture Centre, Delta Research and Extension centre on ‘Enteric Septicemia of Catfish-Management Aspects’ on 5 December, 2019
- Organized training programme on WHONET on 06-03-2020 for researchers, scientists and faculty working on Antimicrobial Resistance. Faculty from Government Medical College, Thiruvananthapuram were the resource persons.

Academic achievement of Students:

- 7 students successfully completed MFSc programme in AAHM
- Asha Gopan (MFSc2019 batch) secured the first rank and won the Gold Medal for MFSc in AAHM.
- **Cleared UGC-NET:** - Ardhra Vijayan (June 2019), Bini C Das (Dec 2019)
- **Cleared ICAR-NET:** Keerthana K M (Jan 2020)

Capacity building of Staff and Students

- **Keerthana K M & Asha Gopan** attended R-Programming in Data Analysis, 27-28 May, 2019.
- **Dr. Vineetha V.P (PDF) and Ms. Sneha K.G. (SRF)** attended Expert consultation and workshop for agriculture experts' organized by ReAct Asia Pacific on June 29, 2019.
- **Sneha KG & Keerthana KM** attended National Seminar on "AMR in Indian Fisheries: Measures of Mitigation" conducted by ICAR-CIFT, Kochi 7th -8th November 2019.
- **Keerthana KM & Asha Gopan** attended International seminar on Aqua India 2020: The changing face of Indian Aquaculture Jan 31-Feb 1, 2020.

Research achievements and publications of Staff and Students:

Sneha K G presented a paper "Prevalence of Antimicrobial resistance in environmental isolates in the vicinity of selected hospitals and adjoining aquaculture farms of Kerala" (**Sneha KG & Devika Pillai**) in "Action on Antibiotic resistance" conducted by ReAct, Asia-Pacific at Kochi 28th -29th July 2019

Asha Gopan, MFSc Student won third prize for Oral Presentation for the paper entitled "Ashwagandha: an effective medicine for TiLV" Authors: **Asha Gopan, Vineetha V P, Devika Pillai** in International workshop and conference on nutraceuticals, herbals supplements and nano formulations (ICNH – 2019) held at Kottayam, Kerala, India during 13-15th September 2019.

Invited lecture by **Dr. Vineetha V.P.** on "Efficacy of *Tinosporacordifolia* in circumventing nano-TiO₂ induced oxidative stress in Nile tilapia (*Oreochromis niloticus*)" in International workshop and conference on nutraceuticals, herbals supplements and nano formulations (ICNH – 2019) held at Kottayam, Kerala, India during 13-15th September 2019.

Dr. Vineetha V.P. chaired Plenary Session on oxidative stress and medicinal plants in International workshop and conference on nutraceuticals, herbals supplements and nano formulations (ICNH – 2019) held at Kottayam, Kerala, India during 13-15th September 2019.

Regina K.B., PhD student won the **Second Prize for Best Oral Presentation** for the paper entitled “ Bacterial mixture from seafood processing effluent as a biocontrol agent against parasitic isopod” in National Conference on Molecular tools and Disease Diagnosis” in Sahrdaya College of Engineering and Technology, Kodakara, Kerala, October 3-5, 2019

Sneha K G presented a paper entitled “Identification of carbapenem and extended-spectrum β -lactamase resistance genes in *Klebsiellapneumoniae* and *Escherichia coli* in public water bodies in Kerala, India: evidence of horizontal spread of antimicrobial resistance” Authors: **Sneha KG & Devika Pillai** in AQUABE- 2019 28th-30th November 2019.

Bini C Das presented a poster entitled “Recent EUS outbreak in the flood affected fish farms of Kerala” (**Bini C Das, Nithin Jacob, Divya V Haridas, Arunendhu Ramakrishnan, PH Anvar Ali and Devika Pillai**) in AQUABE- 2019 28th-30th November 2019.

Divya V Haridas presented a poster entitled N-acylhomoserine lactone-degrading *Bacillus* strains isolated from fish culture pond soil” (**Divya V Haridas, & Devika Pillai**) in AQUABE- 2019 28th-30th November 2019.

Divya V Haridas presented a poster entitled “Characterization of quorum quenching soil bacteria *Bacillus thuringiensis* QQ17 and evaluation of its probiotic activity in *Carassiousauratus* (**Divya V Haridas, & Devika Pillai**) in Kerala Science Congress- 2020 conducted on 25th-27th January 2020.

Sneha K G presented a paper entitled “Identification of multidrug resistant *mecA* gene positive *Staphylococcus aureus* isolates in aquatic environment”. (**Sneha KG & Devika Pillai**) in Kerala Science Congress- 2020 conducted on 25th-27th January 2020.

Dr. Vineetha V P presented a poster entitled “Toxicity and oxidative stress induced by nano-TiO₂ in Nile tilapia (*Oreochromis niloticus*) and its modulation by dietary supplementation of *Tinosporacordifolia* extract”(**Vineetha V.P & Devika Pillai**) in Kerala Science Congress- 2020

conducted on 25th-27th January 2020.

Keerthana K M presented paper on ‘Detection of multidrug resistant *Enterococcus faecalis* from aquaculture pond using poultry waste in Kerala, India. Authors: **Keerthana K M, Sneha K G, Devika Pillai** International conference on Recent Biotechnological innovations in Aquaculture (Live-aqua2020) at Bharathiar University, Coimbatore, during 27-28th February, 2020.

Dr. Vineetha V P presented paper entitled “Nano-TiO₂ induced oxidative stress in Nile tilapia (*Oreochromis niloticus*) and its modulation by dietary supplementation of *Tinosporacordifolia* extract”(Vineetha V.P & Devika Pillai) in International conference on Recent Biotechnological innovations in Aquaculture (Live-aqua2020) at Bharathiar University, Coimbatore, during 27-28th February, 2020.

Asha Gopan presented paper on *Withania somnifera* enhance the haematological parameters and antioxidant enzyme activity of *Oreochromis mossambicus* affected by TiLV (**Asha Gopan, Vineetha V P & Devika Pillai**) in International conference on Recent Biotechnological innovations in Aquaculture (Live-aqua2020) at Bharathiar University, Coimbatore, during 27-28th February, 2020.

Papers published:

1. Sneha Kalasseril Girijan, Robin Paul, Rejish Kumar V.J., **Devika Pillai** (2020). Investigating the impact of hospital antibiotic usage on aquatic environment and aquaculture systems: A molecular study of quinolone resistance in *Escherichia coli*. Science of the Total Environment 748, 141538.
2. Sneha Girijan Kalasseril, Rahul Krishnan, Rejish Kumar Vattiringal, Robin Paul, Philip Mathew & **Devika Pillai** (2020). Detection of New Delhi Metallo-β-lactamase 1 and Cephalosporin Resistance Genes Among Carbapenem-Resistant Enterobacteriaceae in Water Bodies Adjacent to Hospitals in India Current Microbiology, 77(10), 2886-2895. 10.1007/s00284-020-02107-y
3. Divya V. Haridas and **Devika Pillai** (2020). Quorum quenching potential of *Enterococcus faecium* QQ12 isolated from gastrointestinal tract of *Oreochromis niloticus* and its application as a probiotic for the control of *Aeromonas hydrophila* infection in goldfish *Carassius auratus* (Linnaeus 1758). Brazilian J. Microbiol. <https://doi.org/10.1007/s42770-020-00230-3>
4. Nanthini R., Majeed, S.A., Vimal, S., Taju, G., Sivakumar, S., Santhoshkumar S., **Devika Pillai**, Sneha K.G., Rakesh, C.G. and Sahul Hameed A.S. (2019). *In vitro* propagation of tilapia lake virus in cell lines developed from *Oreochromis mossambicus*. J. Fish Dis. 42 (11):1543-1552
5. Divya V Haridas and **Devika Pillai** (2019). Evaluation of quorum quenching and probiotic

activity of *Bacillus thuringiensis*QQ17 isolated from fish culture pond. International Journal of Current Microbiology and Applied Sciences, 8(5):1634-1649.

Academic/Research/Extension activities of Faculty outside the University:

Dr. Devika Pillai served as resource person in 3 days residential programme on Cage farming for brackish water fish conducted by State Fisheries Department at NIFAM Aluva, Topic: **Disease control in cage culture** on 3-8-2019.

Placement Cell Bulletin:

- Ardhra Vijayan – SRF at DBT-DOSA, Microbiology Biotechnology and Fermentation Division, ICAR-CIFT.
- Asha Gopan – Guest lecturer at AAHM Department KUFOS
- Tessy K S – Project Officer at Matsyafed District Office, Kannur
- Merlin Mathew - Technical trainee MPEDA RGCA-MAC (Multispecies Aquaculture Complex)
- Keerthana K M - Guest lecturer at AAHM Department KUFOS
- Zahida Beegum – Project assistant, Department of Environment and Forest, Lakshadweep
- Vishal Sharma – Fisheries Officer, Govt. of Punjab

R- Programming in data Analysis conducted by Department of Aquatic animal Health Management 27th -28th May 2019



Awareness program - Aquatic animal Health Management, under National Surveillance program for Aquatic Animal Disaese , AAHM, KUFOS. 14/6/2019 Kallara ,Kottayam.



Awareness program - Aquatic animal Health Management, under National Surveillance program for Aquatic Animal Disaese , AAHM, KUFOS. 25/6/2019 Chittumala ,Thrissur.



SujaAarattuthodiyil from Thad Cochran National Warmwater Aquaculture Centre, Delta Research and Extension centre on ‘Enteric Septicemia of Catfish-Management Aspects’ on 5 December, 2019



Awareness program - Aquatic Animal Health Management, under National Surveillance program for Aquatic Animal Disease, AAHM, KUFOS. 1/2/2020Pathanamthitta .



Awareness program - Aquatic Animal Health Management, under National Surveillance program for Aquatic Animal Disease , AAHM, KUFOS. 5/2/2020Pattanakad ,Alapuzha.



Awareness program - Aquatic Animal Health Management, under National Surveillance program for Aquatic Animal Disease , AAHM, KUFOS.14/2/2020Pathanamthitta.



Training on WHO-NET on 06-03-2020



FACULTY OF FISHERIES –Dept of Aquatic Environment Management

Staff strength	Professor	:	One	(1)
	Associate Professor	:	One	(1)
	Assistant Professor	:	Two	(2)
	Adjunct faculty	:	One	(1)
	Contract/Guest faculty	:	Two	(2)
Student strength	B.F.Sc – year wise		Eighty (80) 2018 batch BFSc	
	MFSc/ M Sc (I year)	:	Eight	(8)
	MFSc/ M.Sc (II year)	:	Eight	(8)
	PhD	:	One	(1)

Plan for the current academic period

- To promote quality education in Aquatic Environment Management (UG & PG)
- To impart the contemporary research in long-term monitoring of aquatic ecosystems, aquatic biodiversity assessment and management, aquatic pollution, environmental biotechnology, integrated coastal zone management etc.
- To conduct training programmes on environmental impact assessment, evaluation of health of aquatic environment and the management of aquatic resources.

Details of Departmental meeting conducted with agenda

Departmental meeting held on 25/4/2019 to discuss

- (a) Immediate requirement in terms of infrastructure in the department
- (b) Preparation of ICAR Development Grant proposal for 2019-20

Departmental Meeting held on 28/9/2019 to discuss

- (a) Synopsis presentation of MFSc 2018 batch
- (b) Allotment of major advisors and course schedule for MFSc 2019 batch

Department meeting held on 6-1-2019 to discuss

- (a) Credit seminar for 2018 MFSc (AEM)

Conference/Seminar/Workshop/Invited lectures organized by the Department

The Staff members of the department were part of the organizing committee for “International Conference on Aquatic Resources and Blue Economy” (AQUABE 2019) held from 28th to 30th November 2019 at Cochin.

Academic achievements of Faculty

1. Ms. Princy M John, Research Scholar (working under Dr Anu Gopinath), School of Ocean Science and Technology completed the 11th edition of Southern Ocean Expedition (SOE 11) conducted by National Centre for Polar and Ocean Research (NCPOR) and returned on 11th March 2020. This 58 days long scientific expedition consisting of 39 researchers commenced the sailing from Port Luis, Mauritius on 10.01.2020. The team from KUFOS studied Salp-Cnidarian-Ctenophore trophodynamic interactions on the krill centred ecosystem in the Indian Ocean sector of Southern Ocean during Austral summer and its possible impacts on carbon cycle. Dr Anu Gopinath is the PI of the project with duration 2019-2021.
2. Lead and Iron binding capacity of humic acids from Kerala Mangroves (poster presentation –best poster award) MARICON –CUSAT (International seminar) 2019 authored by Jennees Mathew and Anu Gopinath

Academic achievement of Students

- Parvathy S of MSc 2017 batch, Dawood Nihal, Judith Das of MSc 2018 batch cleared UGC NET exam in Environmental Sciences

Capacity building of Staff and Students

Dr Anu Gopinath

1. Communication and interpersonal skills at work University of Leeds and Institute of Coding (2 weeks course in May, 2020). Future learn platform.
2. MOOC course on “Psychology of learning” 1-15, May 2020, ICAR- National Academy of Agricultural Research Management.
3. MOOC course on designing E-learning content – 1-31 July, 2020, ICAR- National Academy of Agricultural Research Management.

Dr. Ranjeet K

1. Attended a three-day training programme on “Training of trainers” organized by UGC-SWRO from 30th May to 1st June 2019 at Bengaluru.
2. Attended a training programme on “Ecosystem Modelling: Towards Management of Inland Fisheries” organized by CIFRI Regional centre from 21-25 October 2019 at Bengaluru

Research achievements and publications of Staff and Students

External Aided Projects:

1. "Hypoxia and its Consequences in the Coastal Waters off Kochi" funded by INCOIS Ministry of Earth Science Government of India. Rs. 31.00 Lakhs 2018-2020 Ongoing, (PI- Dr Anu Gopinath).

2. "Isolation and characterization of alkaloids from the mangrove plant Rhizoporaceae family and its investigations on their anti-bacterial and anti -diabetic activities" Back To Lab Programme of KSCSTE Kerala DrResmi P (Mentor Dr Anu Gopinath) Rs. 14,17,200/- 2019-2021.
3. "Large Scale cultivation of microalgae in outdoor Biofilm photobioreactors for the production of C- Phycocyanin" s KSCSTE Back to Lab programme Dr G Jitha 2019-2021. Rs. 4,72,400 /- (Mentor Dr Anu Gopinath).
4. "Risk assessment and impacts of aquaculture species on native fish diversity in the downstream and upstream areas of Mullaperiyar Reservoir, Periyar River, Kerala", Back To Lab Programme of KSCSTE Post doctoral project Dr. Roshni K (2018-21), Rs. 14.17 lakhs (Research Mentor: Dr. Ranjeet K)
5. "Studies on the habitat dynamics and trophic level interaction of invasive fish groups in Chalakudy river systems, Southern Western Ghats", KSCSTE Post doctoral project Dr. Renjithkumar CR (2018-20), Rs. 9.45 lakhs (Research Mentor: Dr. Ranjeet K)
6. "Transcriptome analysis and gene expression studies to elucidate Heterogeneous Individual Growth in *Macrobrachiumrosenbergii* for ensuring sustainable aquaculture production", DBT Project (2018-21), Rs. 39.43 lakhs (PI: Dr. Ranjeet K)
7. "Studies on the Occurrence, Distribution and Composition of microplastics along the Kerala coast with emphasis on their manifestation in food chain of nearshore communities", DST-SERB Project (2018-21), Rs. 39.80 lakhs (PI: Dr. Ranjeet K)
8. "Current status of fish diversity of Sasthamkotta lake with particular focus on pearl spot, *Etroplusuratensis* ", State Wetland Authority of Kerala, Govt. of Kerala (2019-21), Rs. 10.00 lakhs (Co.PI: Dr. Ranjeet K)
9. "Impact of Kerala floods/ landslides on single location endemic fish species", Kerala State Biodiversity Board (2018-19), Rs. 2.25 lakhs (Co.PI: Dr. Ranjeet K)

Ph.D. s produced 2019-2020.

1. Geochemical Signature and Source Characterization of Trace Elements in the Coral Reef Sediments of Lakshadweep Archipelago Indian Ocean (Anu Joy, School of Chemical Sciences, Mahatma Gandhi University, Kottayam), Research Guide: Dr. Anu Gopinath
2. Biofabrication of Multiapplicative Silver and Gold Nano particles using Marine Macroalgae (Princy K.F, School of Chemical Sciences, Mahatma Gandhi University, Kottayam), Research Guide: Dr. Anu Gopinath
3. Sedimentary heavy metals as signatures of anthropogenic perturbations and sedimentary pigments as ecological indicators in Cochin Estuary (Jose Mathew, School of Chemical Sciences, Mahatma Gandhi University, Kottayam), Research Guide: Dr. Anu Gopinath
4. Dynamics of Pesticides Degradation and Adsorption Kinetics Using Natural Adsorbents from Aquatic System (Praneesh, School of Chemical Sciences, Mahatma Gandhi University, Kottayam), Research Guide: Dr. Anu Gopinath
5. Isolation, Identification and Lipase Characterization of marine actinobacteria of Genus *Streptomyces* from Andaman Coast (SumithaGopalakrishnan), University of Calicut, Research Guide: Dr. Ranjeet K

Publications:**a) Research Papers:**

1. Marine macroalgaebiofabricated silver nanoparticles as naked-eye colorimetric and turn-on fluorescent sensor for cyanide ions in aqueous media (2020).Princy K F and Anu Gopinath Environmental Nanotechnology, Monitoring & Management. IF: 1.430
2. Geochemical fractionation of trace elements in the coral reef sediments of Lakshadweep Archipelago, Indian Ocean (2020). Anu Joy, P.P Anoop, R.Rajesh, Jose Mathew, Angel Mathew, Anu Gopinath. Marine Pollution Bulletin. 158. 111409. IF: 4.049.
3. Response of bacterial communities from Kongsfjorden (Svalbard, ArcticOcean) to macroalgal polysaccharide amendments (2020). Anand Jain, KottekkatuPadinchatu Krishnan, NaziraBegum ,Archana Singh ,Femi Anna Thomas , Anu Gopinath . Marine Environmental Research. 15- 5 (104874). IF: 3.445.
4. Spatial Distribution and Contamination Assessment of Trace Metals in the Coral Reef Sediments of Kavaratti Island in Lakshadweep Archipelago, Indian Ocean (2020). Anu Joy, P.P.,Anoop, R Rajesh, Angel Mathew & Anu Gopinath.Soil and Sediment Contamination: An International Journal, 29:2, 209-231. IF: 0.992.
5. Ye. A. Pasichnaya , L. O. Gorbatyuk , O. M. Arsan , N. A. Platonov , S. P. Burmistrenko, O. A. Godlevskaya&Anu Gopinath (2020). Assessment of a Possibility of the Use of Aquatic Macrophytes for Biomonitoring and Phytoindication of the Contamination of Natural Waters by Heavy Metals. Hydrobiological Journal, Vol. 56, No. 1, IF: 0.26.
6. Biochemical composition of sedimentary organic matter in the coral reefs of Lakshadweep Archipelago, Indian Ocean (2019). Anu Joy, P. Anoop, R. Rajesh, Jose Mathew, Angel Mathew &Anu Gopinath. Chemistry and Ecology. <https://doi.org/10.1080/02757540.2019.1665031> Impact Factor: 1.214.
7. Spatial and Temporal Variations of Arsenic Allocation in a Tropical Estuary along the West Coast of India (2019). Jose Mathew and Anu Gopinath. Marine Pollution Bulletin. Volume 149, December, 2019 Impact Factor: 4.049.
8. Spatial Variation of Phosphorus Fractionation in the Coral Reef Sediments of Lakshadweep Archipelago Indian Ocean (2019). Anu Joy, P.PAnoop, R. Rajesh, Angel Mathew and Anu Gopinath , Chemistry and Ecology IF: 1.214,35:7, 592-612.
9. Role of hydrographical parameters and total organic carbon on mercury allocation along the riverine transect of Beypore, south-west coast of India (2019). Indian Journal of Geo Marine Sciences Jose Mathew. Anoop P P, Anu Joy and Anu Gopinath. 48 (09)1419-1426 IF: 0.301.
10. Biochemical composition of particles shape particle-attached bacterial community structure in a high Arctic fjord" (2019). Anand Jain, Kottekkatu P. Krishnan , Archana Singh , Femi Anna Thomas , Nazira Begum, Manish Tiwari , BhaskarParliVenkateswaran , Anu GopinathEcological indicators 2019 Volume 102 July 2019 Pages 581-592 Impact factor: 4.490.
11. "Spatial Variation of Trace Element Concentration and Contamination Assessment in the Coral Reef Sediments of Lakshadweep Archipelago Indian Ocean" (2019). Anu Joy , Anoop P P, Rajesh R, Jose Mathew, Angel Mathew , Anu Gopinath , Marine Pollution Bulletin, 146 (106-116) Impact factor 4.049.
12. A characteristic study of humic acids isolated from Arctic fjord sediments. Jennees

- Mathew, AswathyShaji ,Anu Gopinath, K P Krishnan , SanilVadakkan L &Anoop P PAdvances in Polar Science(2019) Vol. 30 No. 1: 16-26 Impact facotr: 0.38.
13. A novel green synthesis of gold nanoparticles using Seaweed Lobophoravariegata and its potential application in the reduction of nitrophenols(2019). PrincyKaithavelikkakath Francis, SreejaSivadasan, Anna Avarachan&Anu GopinathParticulate Science and Technology <https://doi.org/10.1080/02726351.2018.1547340> Impact Factor: 1.619.
 14. Spectroscopic Investigation on the Catalytic Efficacy of Biofabricated Gold Nanoparticles using Marine Macroalgae. K.F Princy and Anu Gopinath(2019). Materialstoday Proceedings Vol.9 Part 1 2019 Page 38-45 Impact Factor :1.09.
 15. Spatial and Temporal distribution in the biochemical composition of sedimentary organic matter in a tropical estuary along the west coast of India. Jose Mathew Anu Gopinath G.D. Martin Springer Nature Applied Sciences. 2019. <http://doi.org/10.1007/s42452-018-018-2>.
 16. Spatial Variability of biochemical Composition in Coral reef Sediments of Kavaratti and Pitti Islands Lakshadweep Archipelago. Anu Joy, P.P. Anoop, R.Rajesh, Angel Mathew and Anu Gopinath. Indian Journal of Geo Marine Sciences. 48 (3).2019 369-378 Impact factor: 0.289.
 17. Spatial Variation of Phosphorus Fractionation in the Coral Reef Sediments of Lakshadweep Archipelago Indian Ocean Anu Joy, P.P Anoop, R.Rajesh, Angel Mathew and Anu Gopinath2019. Chemistry and Ecology Impact Factor: 1.214.
 18. Jose, S. and Ranjeet K. (2020). A New Record of Symbiotic Crab (*Harroviaelegans* de Man, 1887) from the Gulf of Mannar, India. Thalassas: An International Journal of Marine Sciences, doi.org/10.1007/s41208-020-00213-z
 19. Ramvilas, G., Shalu, K., Raghavan, R. and Ranjeet, K. (2019). Mapping octocoral (Anthozoa: Octocorallia) research in Asia, with particular reference to the Indian subcontinent: trends, challenges, and opportunities. Journal of Threatened Taxa, 11(13), 14691-14721.
 20. Liya V. Benjamin and Ranjeet K. (2019). Sub-lethal effects of potassium dichromate on hematological and histological parameters in climbing perch, *Anabas testudineus* (Anabantidae). International Journal of Aquatic Biology. 7(3): 140-145.
 21. Pinder, A.C., Britton, J.R., Harrison, A.J., Nautiyal, P., Bower, S.D., Cooke, S.J., Lockett, S., Everard, M., Katwate, U., Ranjeet, K., Walton, S., Danylchuk, A.J., Dahanukar, N. and R. Raghavan (2019). Mahseer(*Tor* spp.) fishes of the world: status, challenges and opportunities for conservation. Reviews in Fish Biology and Fisheries. 29, 417–452.
 22. MeethalParambathPrabhakaran, ParavanparambilRajakumarJayachandran and SivasankaranBijoyNandan, 2020. The occurrence of vulnerable seagrass species *Halophilabecarii*Ascherson, 1871 from restored mangrove of Koduvally estuary, south-west coast of India. Lakes & Reservoirs: Science, Policy and Management for Sustainable Use (Accepted September 2020)
 23. Aneesh Kumar, K. V., K. P. Deepa, M. M. MuhammedRafeeq, G. SreeRenjima, HashimManjebayakath, B. R. Smitha, N. Saravanane, M. P. Prabhakaran, V. N. Sanjeevan and M. Sudhakar, 2020. Near reef abundance and on–offshore distribution of tuna larvae around Minicoy Island in Lakshadweep Sea, India. Marine Biology Research, <https://doi.org/10.1080/17451000.2019.1704018>. (Impact Factor: 1.298)

24. Manomi Sarasan, Neema Job, Jayesh Puthumana, Ravinesh R., Prabhakaran M. P., Lathika Cicily Thomas and Rosamma Philip, 2020. Exploration and profiling of hidden endophytic mycota of marine macroalgae with potential drug leads. *FEMS Microbiology Letters*, 367. (Impact Factor: 1.987) (NAAS 7.99)
25. Thajudeen Jabir, Puthiya Veetil Vipindas, Yousuf Jesmi, Sudheesh Valliyodan, Prabhakaran Meethal Parambath, Arvind Singh and Mohamed Hatha Abdulla, 2020. Nutrient stoichiometry (N:P) controls nitrogen fixation and distribution of diazotrophs in a tropical eutrophic estuary. *Marine Pollution Bulletin*, 151. (Impact Factor: 4.049) (NAAS 9.78)
26. Ajin Madhavan, Reshma Silvester, M.P. Prabhakaran, Reza Naderloo, C.K. Radhakrishnan and N.R. Menon, 2020. First barcode of *Ryphila cancellus* (Herbst, 1783), from the southwest coast of India. *Regional Studies in Marine Science* 33. (Impact Factor: 1.183) (NAAS 7.46)
27. Dwi Listyo Rahayu, P. R. Jayachandran, M. Jima, S. Bijoy Nandan, N. Regina Hershey and M. P. Prabhakaran, 2020. Notes on *Neorhynchoplax alcocki* (Kemp 1917) and *Neorhynchoplax demeloi* (Kemp 1917) from the Kochi Backwater, India (Crustacea: Decapoda: Brachyura: Hymenosomatidae). *Thalassas: An International Journal of Marine Sciences* 36: 79–84. (Impact Factor: 0.657)
28. Paravanparambil Rajakumar Jayachandran, Sivasankaran Bijoy Nandan, Mantodi Jima, Odassery Krishnakutty Sreedevi, Joseph Philomina and Meethal Parambath Prabhakaran, 2019. Bioecology of macrobenthic communities in the microtidal monsoonal Kodungallur–Azhikode Estuary, southwest coast of India. *Lakes Reserv Res Manage.* 2019: 1–19.
29. Baiju P.T., Prabhakaran M.P., Benno Pereira F.G. and V. Jayaprakas, 2019. Rocky reef associated macro invertebrates and urochordates of South Kerala Coast, India. *Research Journal of Marine Sciences* 7(2): 1-19.
30. Sibi T. Baby, Swagat Ghosh, M. Rithin Raj, M. P. Prabhakaran, M. Gopi, K. S. Sumod and Sherine Sonia Cubelio, 2019. Alpheid Shrimp *Aretedorsalis* and Its Association with the Slate Pencil Sea Urchin *Heterocentrotus mamillatus* in Lakshadweep Waters. *Proc. Zool. Soc.* <https://doi.org/10.1007/s12595-019-00318-1>. (NAAS 4.42)
31. P.R. Jayachandran, S. Bijoy Nandan, M. Jima, Philomina Joseph, N.D. Don Xavier, O.K. Sreedevi, M.P. Prabhakaran and K.J. Joseph, 2019. Macrobenthic functional feeding groups in a micro-tidal monsoonal estuary (Kodungallur-Azhikode estuary, India): *Regional Studies in Marine Science*, 25. <https://doi.org/10.1016/j.rsma.2018.10044>. (Impact Factor: 1.183) (NAAS 7.46)

b) Books:

1. *Environment Ecology and Human Rights* (2019) Anu Gopinath and Stany Thomas. For the 5th Semester B.Sc Core Chemistry programme of Mahatma Gandhi University Kottayam ISBN: 978-93-89292-02-2.
2. *Soil and Water Chemistry for the Bachelor of Fisheries Programme as per ICAR syllabus* (2019) Anu Gopinath, Resmi P and Jitha G. ISBN: 978-93-89292-17-6

3. An Introduction to Environmental Studies As per CBCS curriculum (2020) Anu Gopinath, Jitha P, Resmi G and Jasmine P . ISBN 978- 93—89292-37-4, (For all Indian Universities).

Academic/Research/Extension activities of Faculty outside the University

Paper presentation in Seminars/Conferences/Workshops

- Antioxidant and alpha amylase activity of chloroform fraction and profiling of nitrogenous compounds from the bark of mangrove plant *Rhizophoramucronat*, Resmi P and Anu Gopinath , Maricon 2019 , International Conference at CUSAT.
- Macro nutrients and dissolved oxygen distribution from nearshore to offshore waters off kochi - an evaluation over a period of six months authored by Vishnu Murali, Princy M John, Hrishikesh P, Prabhakaran M P, KunalChakraborty, Aneesh A Lotliker , Anu Gopinath - IASC 2019-Paper presentation.
- Influence of upwelling on apparent oxygen utilization (aou) and nutrients in the offshore waters off kochi an evaluation over a period of six month authored by Vishnu Murali, Princy M John, Athira P K ,PriyaVargheese, Ignatious Joseph Prabhakaran M P, KunalChakraborty, Aneesh A Lotliker , Anu Gopinath , Maricon 2019- Paper presentation.
- Biochemical composition of dissolved and particulate organic matter upto 100m depth profile in off Kochi authoredby Athira P K1, Vishnu Murali, Ignatious joseph, Princy.M. John, Priya Varghese, M P Prabhakaran, Anu Gopinath. Poster Presentation -Maricon 2019.
- Quality assessment of sedimentary biochemical composition off Kochi authored by Athira P K, Princy.M. John, Priya Varghese, Vishnu Murali, Anu Gopinath.Poster presentation Ocicon - 2019
- Influence of upwelling on apparent oxygen utilization (aou) and nutrients in the offshore waters off Kochi an evaluation over a period of six month authored by Vishnu Murali, Princy M John, Athira P K ,PriyaVargheese, Ignatious Joseph Prabhakaran M P, KunalChakraborty, Aneesh A Lotliker , Anu Gopinath , Poster presentation -Maricon 2019.
- Synthesize and characterization of silver nano particles using mangrove humic acids and the role as catalyst in the degradation of organic dyes. AQUABE 2019 – KUFOS(International seminar) Jennees Mathew and Anu Gopinath , Paper presentation
- Lead and Iron binding capacity of humic acids from Kerala Mangroves(posters presentation –best poster award) MARICON –2019 (CUSAT International seminar)Jennees Mathew and Anu Gopinath.
- Isolation and characterization of humic acids from arctic fjord sediments and subsequent application in the removal of chromium from aqueous solutions authored by Jitha G, Jennees Mathew, Anu Gopinath ,Maricon 2019 – Poster Presentation.
- Diversity, distribution and substrate specificity of fouling mollusks in the Cochin backwaters, AQUABE 2019, Dr. Ranjeet K (poster presentation)

- Dr. Ranjeet K delivered and invited talk on “State of the World’s Wetlands and their Services under Changing Climatic Scenario” at the International Conference on Impact of Climate Change on Hydrological cycle, Ecosystem, Fisheries and Food Security (CLIMFISHCON 2020), organized by School of Industrial Fisheries, CUSAT from 11-14 February, 2020 at Le Meridien Hotel, Kochi

Meetings attended by faculty members outside the University

1. Dr Anu Gopinath delivered a talk in the National Conference “Oceans in the Wake of Climate Change: Challenges and Solutions” organized by Dr.J.Jayalalithaa Fisheries University, Fisheries College and Research Institute, Thoothukudi, on the topic “Impacts of nano and microplastics in the Marine environment” on 28.08.2020.
2. Dr. Ranjeet K attended a two-day workshop on ‘Conservation Needs and Priorities for Gorgonians in India’ as subject expert on 1st and 2nd July 2019 at Department of Aquatic Biology & Fisheries, University of Kerala, Thiruvananthapuram.
3. Dr. Ranjeet K attended ICAR AIEEA 2019 meeting held NASC Complex, Pusa, New Delhi on 28-29 June 2019.

Placement Cell Bulletin

- ParvathyShajahan(MFSc 2017) joined as Environment Officer in Qatar
- Sara Xavier (MFSc 2017) joined CMFRI, Kochi as SRF
- MayurTade (MFSc 2017) joined CMFRI Veravel as SRF
- AnujaMadhavan (MFSc 2017) joined SAF project
- Judith Das (MFSc 2018) joined CMFRI Vizhinjam as SRF

FACULTY OF FISHERIES –Dept of Fisheries Engineering

Staff strength	Professor	: Nil
	Associate Professor	: Nil
	Assistant Professor	: Nil
	Adjunct Faculty	: Nil
	Contract/Guest Faculty	: Contract Faculty - 01 Guest Faculty - 02
Student strength	B.F.Sc / B.Tech – year wise	: -
	MFSc (I year)	: 02
	MFSc (II year)	: 02
	PhD	: Nil

Plan for the current academic period

Teaching (UG and PG), Research and guidance, organizing trainings, preparation of study material.

Details of Departmental meeting conducted with agenda : Nil

Conference/Seminar/Workshop/Invited lectures organized by the Department : Nil

Academic achievements of Faculty

Mrs.Amrutha R Krishnan, Asst.Professor (on Contract) participated in

One day work shop on “Fishing Vessel & Fishermen Safety” organized by Alberts Maritime Institute, on February 13, 2020

National workshop on “ Ensuring Quality in Research & Effective Utilization of e – Resources” on 22nd and 23rd January 2019 organised by KUFOS.

IVth International Disaster Risk and Vulnerability Conference(DRVC 2020) organized by MG University during October 9 -10 & 16 -17, 2020

Prepared Practical Manuals of the courses Fishing Craft Technology and Aquaculture Engineering for BFSc programme.

Academic achievement of Students (MFSc Fisheries Engineering & Technology)

- Sri. Sandipan Mondal(2016 batch) joined for Ph D Programme in National Taiwan Ocean University , Taiwan.
- Sri. Debendra Sahu(2016 batch) posted as Block Officer in Fisheries Department, Kanker, Chhatisgarh

- Sri. MosarafHossain(2016 batch)is working as Senior Technical Consultant at CP Aquaculture India Pvt. Ltd, Chennai.
- Ms. AjimoonNissa(2017 batch) employed as Farm Tele Advisor at IFFCO Kisan Sanchar Ltd, Ministry of Agriculture & Welfare, Government of India.
- Sri. EdigaPalnatiAnandGoud(2017 batch)is working as Village Fisheries Assistant, Department of Fisheries, Andhra Pradesh.
- Ms. SaranyaRaju(2018 batch)is working as Data Enumerator, Department of Fisheries, Govt. of Kerala.
- Ms. AjimoonNissa(2017 batch) secured first rank for MFSc (Fisheries Engineering & Technology) from KUFOS, qualified ICAR NET in Fish Processing Technology and UGC NET in Environmental Science.

Capacity building of Staff and Students

- Imparted hands on training on “Marine Engineering and Navigation” to 54 students of BFScat Fishery Survey of India (03.10.2019 - 05.10.2019& 14.10.2019 - 16.10.2019) and Praga Marine Pvt. Ltd. (25.09.2019 - 26.09.2019)as part of Rural Fisheries Work Experience programme.
- Participated in two day Faculty Development Programme on “ Modern Trends in Agro informatics” organized by School of Engineering, CUSAT on 26th& 27th August 2020

Research achievements and publications of Staff and Students

Mrs.Amrutha R Krishnan, Asst.Professor (on Contract) presented the following papers :

- “The catch composition of Winter migratory coastal set bagnet operating in Hooghly-Matlah estuary, WB” in the International Conference on Benthos (ICB 2019) held at CUSAT during 6-8 March 2019
- “ Migratory Fishes In Winter Migratory Coastal Set Bagnets Of Hooghly –Matlah Estuary” in International Conference on "Aquatic Resources & Blue Economy" AQUABE 2019 (AQUABE 2019) held from 28th to 30th November, 2019
- “Amphidromous Fish Migration along the lower stretches of Hooghly Matlah Estuary near Sunderban” in the national seminar NEW FRONTIERS in MATERIAL & ENVIRONMENTAL SCIENCES (NFMES 2020) conducted by SH college, Thevara on 28 th& 29 th January 2020

Academic/Research/Extension activities of Faculty outside the University

Mrs.Amrutha R Krishnan

- Chaired the sessions “Nano composites” and “ Environmental Remediation” in the Third International Conference on Advanced Materials (ICAM 2019) held at MG University during 9-11 August 2019
- Delivered an Invited talk on “Power Transfer to Fish as a Function of Electric Conductivity of Water and Fish” in theThird International Conference on Advanced Materials (ICAM 2019) held
- conducted training for Fish farmers of FDWCS at Kayamkulam (November 2019)

FACULTY OF FISHERIES –Dept of Fisheries Extension, Economics and Statistics

Staff strength	Professor	: 02
	Associate Professor	: 02
	Assistant Professor	: Nil
	Adjunct faculty	: Guest Faculty 02
Student strength	B.F.Sc / B.Tech – year wise :	
	M Sc(Statistics) I year	: 11
	M.Sc (Statistics) II year	: 11
	PhD	: Nil

Plan for the current academic period

Teaching, Research and Guidance, Extension activities and Consultancy.

Details of Departmental meeting conducted with agenda

Board of Studies meeting of MSc (Statistics) programme was held on 10.06.2019 with eight agenda items. Seven members attended the meeting. Most of the Recommendations of the Board of Studies were approved in the 22nd Academic Council meeting of KUFOS held on 25.06.2019.

Conference/Seminar/Workshop/Invited lectures organized by the Department : Nil

Academic achievements of Faculty

Sri.Mathew Sebastian, Associate Professor & Head

- Guided seven students of MSc (Statistics) programme and seven students of MBA programme for the Dissertation work.
- Co-ordinated MSc (Statistics), MFSc (Fisheries Engineering & Technology) and BFSc programme for one batch of students.

Dr.V.Ambilikumar produced one Ph.D degree in Management

All the Faculty members of the Department successfully used the ICT for conducting online classes and also for the conduct of examinations.

Academic achievement of Students

- Four students of MSc (Statistics) programme attended the national workshop on

“Data Science using R Programming” organized by the Post Graduate and Research Department of Statistics, Nirmala College, Muvattupuzha during 08-09 February 2019.

- Four students of MSc (Statistics) programme participated in the “Three-Day National Workshop on Statistical Data Analysis using R and SAS” organized by the Post Graduate and Research Department of Statistics, Maharaja’s College, Ernakulam during 25-27 September 2019.

Capacity building of Staff and Students

Dr. Daisy C Kappen, Professor participated in the “General Management Programme for Women Scientists” sponsored by Department of Science and Technology, Govt. of India, New Delhi from 02-13, December 2019 at Administrative Staff College of India, Bella Vista : Hyderabad

All the faculty members of the Department attended the International Conference on Aquatic Resources and Blue Economy (AQUABE 2019) held at Cochin during Nov.28-30, 2019.

Research achievements and publications of Staff and Students

Dr.V.Ambilikumar, Professor

- Eight students are currently doing Ph.D under the supervision of Dr.V.Ambilikumar. these students have achieved good progress in their research works. During the year 2020, most of these students could publish research papers in the UGC approved refereed journals.
- Published three research papers.

Smt.AlphiKorath, Associate Professor

Mullasserisileesh, B. MadhusoodanaKurup and AlphiKorath (2020). Length at maturity and relationship between weight and total length of five deep-sea fishes from the, Andaman and Nicobar Islands of India, North-eastern Indian Ocean. *Journal of the Marine Biological Association of the United Kingdom* 10.1017/S0025315420000478 <https://doi.org/10.1017/S0025315420000478>

Mullasserisileesh, B. MadhusoodanaKurup, AlphiKorath (2020). Length-weight relationship of deep-sea demersal finfishes from the Southeastern Arabian Sea. *Journal of Applied Ichthyology*. 2020;00:1–3. <https://doi.org/10.1111/jai.14088>

Dr.Daisy C Kappen, Professor

- Daisy.C.Kappen, Dinesh Kumar & Divya N D Pioneer attempt on cage culture of Giant

Trevally, *Caranxignobilis* through farmer participatory approach in Thiruthippuram Backwaters, Kochi, Kerala, India, *Ambient Science* : Vol:5(2), 2018 pp:6-8

- Daisy.C.Kappen, K Dinesh & N D Divya constraints in the adoption of cage culture aquaculture practices in Ernakulam District, Kerala, *Journal of Extension Education* Vol.30 ,No.4, October-Dec 2018, pp6165-6172

Academic/Research/Extension activities of Faculty outside the University

Dr.V.Ambilikumar, Professor served as

- External expert for the PhD examinations at Tamil Nadu Dr.J.Jayalalithaa Fisheries University.
- External examiner for M.Phil commerce of the University of Kerala.
- External examiner for the Ph.D.course work in Management (subject: Research Methodology) of the University of Kerala.
- External expert for conducting viva- voce examination of the MBA programme of the Saintgits College of Engineering, affiliated to the APJ Abdul Kalam Technological University.
- Adjudicator of the Ph. D. theses (9 Nos.) of the University of Kerala both in Commerce and Management.
- Chairman of the Open Defence (6 Nos.) for the award of Ph.D degree in Commerce and Management by the University of Kerala.
- External examiner for the adjudication of the Ph.D. thesis in Madurai Kamaraj University.
- External examiner for M.Phil commerce of the Cochin University of Science and Technology.
- External expert in the committee constituted for assessing the progress of UGC –JRF, in Cochin University of Science and Technology.
- External expert for the pre-submission seminar of Ph.D. students in Commerce and Management by the University of Kerala.
- Member in the inspection committees appointed by the University for assessing the quality and facilities of research centres.

Meetings attended by faculty members outside the University

Dr.V.Ambilikumar, Professor

Represented the KUFOS in the seminar organized by the Research Council of Norway and the Norwegian Agency for International cooperation and Quality Enhancement in Higher Education (DIKU) during 5-6 February 2020 at IIT, Chennai, Tamil Nadu. A paper on Higher Education was presented in the seminar.

FACULTY OF FISHERIES –Dept of Fish Processing Technology

Staff strength	Professor	:1
	Associate Professor	:Nil
	Assistant professor	:5
	Adjunct faculty	:Nil
	Contract/Guest faculty	:Nil
Student strength	MFSc (I year)	:9
	MFSc (II year)	:6
	PhD	:17

Details of Departmental meeting conducted with agenda

- Meeting on 02.07.19 regarding stock verification, submitting details about projects handled by each faculty, workload submission, submission of request for appointment of lab assistant, plan for conducting 5 day training by department
- Meeting on regarding MFSc students guidance , submission on lab attendant requirements.

Conference/Seminar/Workshop/Invited lectures organized by the Department

1. One day training programme on “Production and Marketing of value added products from seafood” on 26.01.19 at KUFOS for 30 members from Kizhakkambalam Kudumbasree unit, Ernakulam
2. Five days training program on “Entrepreneurship Development in Fish Processing Technology & Value Addition of Fish and Fishery Products” (9th to 13th March 2020) in association with National Institute of Agricultural Extension Management (MANAGE), Hyderabad for 40 participants at Kerala University of Fisheries and Ocean Studies , Panangad.
3. One day training programme on “Hygienic handling and cleaning of fish” (28th February 2020) for 15 participants at Kerala University of Fisheries and Ocean Studies, Panangad
4. Webinar On Agribusiness and Startup Opportunities -How to start a start up on 10th October, 2020.
5. Invited talk on Packaging of Fish and Fishery products, Dr. S. Sreejith , ICAR-CIFT 10th May, 2020.
6. Invited talk on Chromatography and mass spectrometry analysis fisheries products, Dr. Niladri Chatterjee, Scientist, ICAR-CIFT 14th May, 2020.
7. Webinar On Start up and employment opportunities in fisheries and aquaculture – Government initiatives and schemes 06th November ,2020

8. 5. Webinar On Start-up opportunities in Agriculture and Allied Sectors with special emphasis on Agri-Business and Fisheries 03rd October, 2020
9. One day Life Skill and Personality Development class to BFSc -2019 Batch Students in collaboration with CASRED. 10th January, 2020
10. Two day skill development programme jointly organized by FPT-CASRED on “Value Added Fish Products” (30-31st August 2020) for 20 participants at Kerala University of Fisheries and Ocean Studies, Panangad.

RESEARCH AND ACADEMIC CONTRIBUTIONS BY FACULTY

**Name of the Faculty :- Dr. Radhika Rajashree S.R.,
Professor & HoD
Dept. of Fish Processing Technology**

Peer Reviewed Publications

1. RadhikaRajasreeSR, M.G. Karthih, M. Gobalakrishnan, L. Aranganathan (2020) Fabrication and characterization of collagen/ gelatin/ chitosan composite scaffolds from Big Eye snapper *Pracanthushamrur* skin for antimicrobial and anti oxidant applications, *Material Science and Engineering C*, 107, 110207. **IF-5.70.**
2. RoopaRajan, L. Aranganathan and Radhika Rajasree S.R. (2021)* chemical and biophysical properties testing of gelatin composites from cephalopods for the improvement of textural quality in sausages, ISBN: 9789390309115.
3. L. Aranganathan, S.R. RadhikaRajasree, K. Govindaraju, S. Sivarathnakumar, S. Gayathri, R.R. Remya, T.Y. Suman (2020) Spectral and microscopic analysis of fulvic acids isolated from marine fish waste and sugarcane bagasse co-compost, *Biocatalysis and Agricultural Biotechnology*, Online 20 August 2020, 101762
4. M. GOBALAKRISHNAN, RADHIKA RAJASREE S.R., L. ARANGANATHAN AND M.G. KARTHIH (2020) COMPARATIVE ANALYSIS OF MONO AND COMBINED MICROALGAL DIETS ON GROWTH PARAMETERS OF *SALMACIS BICOLOR* LARVAE, *THALASSAS: AN INTERNATIONAL JOURNAL OF MARINE SCIENCES*. 36, 621–632 **IF0.76**
5. M. Gobalakrishnan, RadhikaRajasree S.R. M.G. Karthih and L. Aranganathan (2020) Effects of food type, feeding frequency and performance on the early juveniles of the tropical sea urchin *Salmacis bicolor* (Echinodermata: Echinoidea), *Iranian Journal of Fisheries Science*. A-10-2537-3 **IF0.4**
6. L. Aranganathan, RadhikaRajasree S.R., R.R. Remya, T.Y. Suman and S. Gayathri (2020) Evaluation of biomolecular characteristics and phytotoxic effects of organic fish co-composts developed from fish industrial processing wastes, *Biotechnology and biological sciences*, Taylor & Francis, ISBN 978-0-367-43161-7.

7. S.Gayathri, S.R.RadhikaRajasree, T.Y.Suman, L.Aranganathan, R.Thriuganasambandam, G.Narendrakumar (2020) Induction of β , e-carotene-3, 3'-diol (lutein) production in green algae *Chlorella salina* with airlift photobioreactor: interaction of different aeration and light-related strategies, Biomass conversion and bioenergy, <https://doi.org/10.1007/s13399-019-00580-5> IF:2.6
8. L Aranganathan, SR RadhikaRajasree, TY Suman, RR Remya, S Gayathri, C Jayaseelan, MG Karthih, M Gobalakrishnan (2019) Comparison of molecular characteristics of Type A humic acids derived from fish waste and sugarcane bagasse co-compost influenced by various alkaline extraction protocols, *Microchemical Journal*, 1149(2019) 04038, **IF-2.72**.
9. R.R, Remya; S.R, RadhikaRajasree; R.Vasantharaja, T.Y.Suman, K.Govindaraju (2019) .In Vivo Toxicity Assessment of Laminarin Based Silver Nanoparticles from *Turbinaria ornata* in Adult Zebrafish (*Danio rerio*), *Journal of Cluster Science* , DOI 10.1007/s10876-019-01632-6. **Impact factor :2.12**
10. Suman TY, Vasantharaja R, GobalaKrishnan M, Gayathri S, Remya RR, Jayaseelan C, Thirugnanasambandam R, Kumar C, Radhika Rajasree SR (2019) Mineral and trace metal Concentrations in seaweeds by microwave assisted digestion method followed by Inductively coupled plasma mass spectrometry, *Biological trace element research*, 2019, 187(2), 579-585. **IF : 2.43**
11. R.R, Remya; S.R, RadhikaRajasree; T.Y, Suman; L, Aranganathan; S, Gayathri; M, Gobalakrishnan; M.G, Karthih (2019) Studies on Proximate Composition and Phytochemical Profiling of *Turbinaria ornata* and its Antiproliferative Effect on Y79 Cell Lines, *Thalassas: An International Journal of Marine Sciences* , DOI: 10.1007/s41208-019-00159-x **IF:0.507**
12. M.G. Karthih and S.R. RadhikaRajasree, (2019) LuxS gene: Molecular docking and virtual screen analysis of *Staphylococcus hominis*, *Indian Journal of Geo marine Sciences*, Vol. 48 (08), 2019, pp. **IF :0.301**

PATENTS Granted

Radhika Rajasree S.R. (2020) -Continuous flow through culture system for echnoid juveniles growth, NO.313058-001

PROJECTS/WORKSHOPS granted

1. MANAGE-KUFOS off campus Training Programme 09-13th March 2020- Ministry of Agriculture and farmers welfare- 2,65,000/-
2. DST -NSTEDB: Technology Based Entrepreneurship Development Programme (TEDP) through online platform on Food products and byproducts development from freshwater fishes- 3,20,000/-
3. NIAM, Ministry of Agriculture and farmers welfare- - Training of trainers in Fresh fish products and byproducts technology
4. DBT-HRD project on skill Development in fish processing and packaging technology - Approx.60 Lakhs (prov.granted approval)

5. Kerala State Plan Fund : Project on Development of functional bio-based seaweed edible films for potential food applications & shelf life extension of fishery products

Guidance of Students

PhD Thesis Submitted(Gayathri S.) –Studies on the production and extraction of lutein from *Chlorella salina* for its application in colour enhancement of ornamental fishes

MFSc Thesis RoopaRajan -Isolation and characterization of gelatin based scaffolds from *Amphioctopus marginatus* Taki, 1964 for food storage and biomedical applications

Radio Talks

1. Seaweed farming prospects – “KadalKadalolam”- All India Radio Programme 06th march,2020 .

2. Seaweeds utilization and farming – PMMSY All India Radio Talk September 2020.

Conference Publications

1. RoopaRajan , Bincy P.K., Radhika Rajasree S.R*. Fabrication of Gelatin/Chitosan/Zeolite Composite Packaging Film for Enhancing the Quality of Fresh Meat During Storage, 2020. Abstract *In: Proceedings* International, Platinum Open Access Journal (ISSN 2668-6384), Volume 2, Issue 1, 2020, 53. <https://doi.org/10.33263/Proceedings21.053053>
2. RoopaRajan ,BinciPK, Safeena MP, TK Srinivasa Gopal, Radhika Rajasree SR (2020) International e-Conference on Bioengineering for Health & Environment (ICBHE 2020) organized by Sathyabama Institute of Science and Technology, India and MAHSA University, Malaysia held on 16th and 17th July 2020.
3. RoopaRajan , L. Aranganathan, RadhikaRajasree SR. chemical and biophysical properties testing of gelatin composites from cephalopods for the improvement of textural quality in sausages, International Conference on Impact of Climate Change on Hydrological cycle, Ecosystems, Fisheries and Food Security, 8-10th August, 2020 ,CUSAT.
4. L.Aranaganthan, RadhikaRajasreeS.R,R.R.Remya,T.Y.Suman and S.Gayathri (2020) Evaluation of biomolecular characteristics and phytotoxic effects of organic fish cocomposts developed from fish industrial processing wastes, 3rd International conference on Biotechnology and biological sciences (Biospectrum) ,University of Engineering & Management , 8-10th August, 2019 Kolkata.
5. RadhikaRajasree, L.Aranaganathan , Jasmine Rifya (2020) Biofunctional effects of protein and lipids from echnoides of east coast of India with reference to antimicrobial and antioxidant properties, in International conference Aquatic Recourses and Blue Economy (AQUABE), Nov 28-30, 2019
6. RadhikaRajasree, L.Aranaganathan , Jasmine Rifaya (2020) Anti-bacterial and antioxidant efficacy of macroporous bioscaffolds prepared with gelatin-chitosan and collagen of Pricanthushamrur skin in International conference Aquatic Recourses and Blue Economy (AQUABE), Nov 28-30, 2019.
7. RadhikaRajasree, L.Aranaganathan , Jasmine Rifya (2020) Extraction and Isolation of PHNQ pigments from sea urchin *Stomopneustes variolaris* (Lamarck, 1816) shell and its anticancer activity against human ovarian cancer cell lines in International conference Aquatic Recourses and Blue Economy (AQUABE), Nov 28-30, 2019.

Sessions handled during training

1. Conducted session on “**Valorization of Fish wastes**” at one day training programme on “Hygienic handling and cleaning of fish” (28th February 2020) organized by Department of Fish Processing Technology, KUFOS for 15 participants at Kerala University of Fisheries and Ocean Studies, Panangad.
2. Conducted a session on “**Fish waste utilization to value added byproducts**” at five days training program on “Entrepreneurship Development in Fish Processing Technology & Value Addition of Fish and Fishery Products” (9th to 13th March 2020) jointly organized by National Institute of Agricultural Extension Management (MANAGE), Hyderabad and Department of Fish Processing Technology, KUFOS for 35 participants at Kerala University of Fisheries and Ocean Studies, Panangad.

Academic achievement of Students

1. Ms. Roopa Rajan, and Radhika Rajasree S.R. – Best paper award . International E-conference on bioengineering for Health and Environment (ICBHE 2020) MAHSA University, Malaysia .
2. Ms. Preenanka R. and Safeena Best poster award in the 3 days International conference on Aquatic Resources and Blue Economy (Aquabe) conducted during 28th to 30th Nov 2019 organized by KUFOS
3. Mentored BfSc 2019 Batch students – ED conclave Enlight 2020, Govt of Kerala, (28-31st January 2020)

Academic/Research/Extension activities of Faculty outside the University

- Served as Chairperson in Session 1. Biowaste Utilization- International Workshop jointly Organized by International Foundation for Science (Sweden) & Organization for Prohibition of Chemical Weapons, Hague, The Netherlands, 25-26th November, 2020.
- Served as resource person in E-course on Seafood safety and Quality control organized by Marine Safety College, Tuticorin. November, 2020.
- Subject Matter Expert -CAS Screening Cum Evaluation Committee, School of Industrial Fisheries, Cochin University of Science and Technology, November, 2020.
- Subject Expert-Selection Committee- Faculty, School of Industrial Fisheries, Cochin University of Science and Technology, November, 2020.

Academic Achievements: Dr. Abhilash Sasidharan (2019-20)

Publications

Journals

1. S. Anjana, **Abhilash Sasidharan**, B. Varghese, Sarasan Sabu, K.V. Sunooj and K. A. Martin Xavier (2020). Performance evaluation of ultra violet assisted vertical re-circulating depuration system on microbial, heavy metal reduction and composition of Black clam (*Villoritacyprinoides*). *LWT Food Sci. Technol.* 110628, ISSN 0023-6438. <https://doi.org/10.1016/j.lwt.2020.110628>.

2. VazhiyilVenugopal and **AbhilashSasidharan** (2020). Seafood industry effluents: environmental hazards, treatment and resource recovery. *Journal of Environmental Chemical Engineering*. <https://doi.org/10.1016/j.jece.2020.104758>.
3. Seba T. Jiso Thomas, G. Archana, **S. Abhilash**, S. Sabu, K. V. Sunooj and T. K. S. Gopal (2020). Process Standardization of Ready-to-eat Pasteurized Crab spread from Marine Blue Swimming Crab (*Portunuspelagicus*) Incorporated with Threadfin Bream Surimi. *Fishery Technology*, 57 (4), pp 258-266.
4. **AbhilashSasidharan**, Megha Krishna Murthi, SarasanSabu and KappatValiyapeediyekkalSunooj (2020) Valorisation of Basa (Pangasianodonhypophthalmus) Skin Waste into Quality Leather Using a Non Chrome Treatment Method, *Journal of Aquatic Food Product Technology*, DOI: 10.1080/10498850.2020.1829767
5. **AbhilashSasidharan**, V. J. Michu, ChiranjivPradhan and S. Sabu (2020). Utilisation of Isoelectric Precipitation to Recover Fish Protein Isolate from Seafood Processing Waste. *Indian J. Fish.*, 67(3): 99-105.
6. Venugopal V. and **AbhilashSasidharan**, (2020). Recovery of Functional Proteins from Seafood Processing Discards and their Applications. AFSTI (Mumbai Chapter) Newsletter, Vol.6, pp 2-4.
7. **Sasidharan, A.** and Venugopal, V. (2020). Functional Proteins from Seafood Processing Discards and their Applications". *EC Nutrition* 15.9: 51-57.
8. CherakkathodiSudheesh, KappatValiyapeediyekkalSunooj, BlasubhramaniamBhavani, BasheerAaliya, MuhammedNavaf, PlachikkattuParambilAkhila, SarasanSabu, **AbhilashSasidharan**, Suraj Kumar Sinha, Sunny Kumar, VallayilAppukuttanSajeevkumar, Johnsy George (2020). Energetic neutral atoms assisted development of kithul (*Caryotaurens*) starch-lauric acid complexes: A characterisation study, *Carbohydrate Polymers*, Volume 250, 116991, ISSN 0144-8617, <https://doi.org/10.1016/j.carbpol.2020.116991>.
9. S Sabu and **A Sasidharan**. Impact of fishing on freshness and quality of seafood: A review. *International Journal of Fisheries and Aquatic Studies*. 2020; 8(2): 193-198.
10. CherakkathodiSudheesh, KappatValiyapeediyekkalSunooj, **AbhilashSasidharan**, SarasanSabu, AaliyaBasheer, MuhammedNavaf, ChikkondaRaghavender, Suraj Kumar Sinha, Johnsy George (2020). Energetic neutral N₂ atoms treatment on the kithul (*Caryotaurens*) starch biodegradable film: Physico-chemical characterization. *Food Hydrocolloids*, Volume 103, 105650. <https://doi.org/10.1016/j.foodhyd.2020.105650>.

Papers in Seminar / Symposia

1. Nino Thomas M., **A. Sasidharan**, S. Sabu and K. V. Sunooj (2020). Effect of Vacuum Tumbling-assisted marination on colour, texture and sensory characteristics of Indian White Shrimp. International Conference on Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security, ClimFishCon, 11th to 14th February, 2020, Le Meridien, Cochin, India.
2. AsokNayana, M.S. Angel, S. Sabu and **A. Sasidharan** (2020). Quality and shelf life of chitosan coated vacuum packed seerfish (*Scomberomorus commerson*) under iced storage. International Conference on Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security, ClimFishCon, 11th to 14th February, 2020, Le Meridien, Cochin, India.

Popular Articles

1. **Sasidharan, A.** And Venugopal, V (2020). Recovery of Functional Proteins from Seafood Processing Discards and their Applications. AFSTI, Mumbai Chapter Newsletter, June 2020.vpp 2-4.

Supervised M. F. Sc. Dissertations

Sl.No.	Name of the student	Year	Title of the Dissertation
1.	Anjana Sunil	2020	Effect of UV assisted depuration on chilled and frozen shelf life of B Clam (<i>Villoritacyprinoides</i>)

Participation in Workshops / Seminar / Symposia / Conference

1. International Conference on **Impact of Climate Change on Hydrological Cycle, Ecosystem, Fisheries and Food Security, ClimFishCon**, 11th to 14th February, 2020, Le Meridien, Cochin, India.

Training Programs Organized

1. Five days training program on “Entrepreneurship Development in Fish Processing Technology & Value Addition of Fish and Fishery Products” (9th to 13th March 2020) in association with National Institute of Agricultural Extension Management (MANAGE), Hyderabad for 35 participants at Kerala University of Fisheries and Ocean Studies , Panangad.
2. One day training programme on “Hygienic handling and cleaning of fish” (28th February

2020) for 15 participants at Kerala University of Fisheries and Ocean Studies, Panangad.

Classes conducted for training programs

3. Conducted an online session on “**Business Opportunities in Value Added Products Using Fish**”. Organized by Kerala Institute for Entrepreneurship Development (KIED), Department of Industries and Commerce, Government of Kerala on 18.09.2020.
4. Conducted a session on “**Production of value added seafood products and their marketing**” at five days training program on “Entrepreneurship Development in Fish Processing Technology & Value Addition of Fish and Fishery Products” (9th to 13th March 2020) jointly organized by National Institute of Agricultural Extension Management (MANAGE), Hyderabad and Department of Fish Processing Technology, KUFOS for 35 participants at Kerala University of Fisheries and Ocean Studies, Panangad.
5. Conducted a session on “**Production of value added seafood products and their marketing**” at one day training programme on “Hygienic handling and cleaning of fish” (28th February 2020) organized by Department of Fish Processing Technology, KUFOS for 15 participants at Kerala University of Fisheries and Ocean Studies, Panangad.

Academic achievements of Faculty: Dr. Blossom K.L.

- Guided MFSc student on the topic “Standardization and development of a value added product from *Sardinella longiceps* Valenciennes, 1847 using the leaves of tropical plants”
- Guided MFSc student on the topic “Quality evaluation of protein bar developed by incorporating fish protein hydrolysate from *Oreochromis niloticus*”
- Guided MFSc student on the topic “Fortification of rice flour with calcium extracted from tuna bone”
- Guided MFSc student from St. Teresa College, Ernakulam on the topic “Development and Quality Evaluation of Vegetable Incorporated Pasta”
- Attended Orientation programme conducted by UGC HRDC at Venkateswara University, Tirupati from 21.01.19 to 16.02.19.
- Attended National Faculty Development Programme in entrepreneurship and startups organized by Entrepreneurship Development Institute of India (EDII) from 21.12.2019 to 04.01.2020 (2 weeks) at Kerala Forest Research Institute, Peechi, Thrissur
- Act as reviewer for the “Microbiology research journal international” on the topic “Burden of *Helicobacter pylori* Infections and Associated Risk Factors among Cases of Iron Deficiency Anaemia in Egypt”

- One article entitled “Role Of Fish In Cardiovascular Disease” in an e- book published by CMS College, Kottayam as part of World Heart Day 29th September 2020

Academic achievement of Students

Bonny Mathew, Blossom K.L, Somy Mary Mathew, *Arogyathinukattupazhammootikaya*, February 2020, Rashtra Deepika Publications

Capacity building of Staff and Students

Conducted ELP programme for BFSC students 2016 Batch

Research achievements and publications of Staff and Students

Projects

- As Principal investigator in the plan project “Standardization and development of fortified and nutritious fish noodles and pasta for fighting malnutrition”-20 lakhs
- As Co PIn the plan project “Model fish processing plant and training centre” State plan scheme-25 lakhs

Conference abstracts

- Blossom K.L, Bonny Mathew and Somy Mary Mathew, *Proximate Analysis of fruit of *Baccaurea courtallensis* (Wight) Muell. Arg.* International conference on “Advances in Food and Industrial Biotechnology, organized by MACFAST, Thiruvalla from 24.11.19 to 26.11.19
- Anjana K. Saju, Blossom K.L, Ancy Thomas, *Shelf life extension of *Sardinella longiceps Valenciennes, 1847* using the combined effect of leaves of *Garcinia gummitutta* and vacuum packaging*, International Conference on “Aquatic Resources & Blue Economy 2019” from 28.11.19 to 30.11.19
- Rizveen Shanavas, Shilpa Jose, Blossom K.L, Somy Mary Mathew. *Development and Quality Evaluation of Fish Protein Concentrate Incorporated Value Added Products*. International Conference on “Aquatic Resources & Blue Economy 2019” from 28.11.19 to 30.11.19
- Anjana K. Saju, Blossom K.L, Somy Mary Mathew. *Shelf life extension of *Sardinella longiceps Valenciennes, 1847* using the combined effect of leaves of *Tamarindus indica* and vacuum packaging*. 51st Annual national conference of Nutrition Society of India on “Nutrition Security –blending tradition with modern technology”

from 08.11.19 to 09.11.19

- Blossom K.L, Amitha Raj, Jisto Mathew, *Standardisation and development of nutritious noodles from Oreochromis niloticus*, International conference Climfish CON 2020 at Le Meridian, Kochi from 12.02. 2020 to 14.02.2020
- Blossom K.L, Amitha Raj, Jisto Mathew, *Standardisation and development of nutritious noodles from Oreochromis niloticus*, International conference Climfish CON 2020 at Le Meridian, Kochi from 12.02. 2020 to 14.02.2020

Full length paper

- Blossom K.L, Shilpa Jose and Daisy Kappen. *Food Consumption pattern among School Going Children in a Rural Area of Kerala. J. of Extension Education.* 2019.

Training manuals prepared

- Training manual on production of value added products as part of “Model fish processing plant and training centre”- 2019

Academic/Research/Extension activities of Faculty outside the University

- External examiner at St.Terasas College, Ernakulam for MSC Fourth Semester Practical Examination on 11.04.2019

Name of the faculty: Dr. Safeena, M.P, Assistant Professor, Microbiology (2019-2020)

Publications

HafsaMaqbool, S.Vishnuvinayagam, A.A Zynudheen, Safeena, M.P., Sathish Kumar K., 2020. Antibacterial activity of beetroot peel and whole radish extract by modified well diffusion assay. *International Journal of Current Microbiology and Applied Sciences* 9 (1):1222-1231.

HafsaMaqbool, ZynudheenAbubacker, Safeena M.P. & Sathish Kumar, 2020. Antioxidant Properties and the Preservative Effect of Whole Radish Extract on Quality of Deccan Mahseer (Tor khudree) Steaks during Chilled Storage, *Journal of Aquatic Food Product Technology*, 29:8: 760-774.

PhD Thesis Submitted

Evaluation of natural phenolic compound on quality and shelf-life of mahseer (*Tor Khudree*) steaks under low temperature storage 2020. Submitted by MsHafsaMaqbool (AFPT 2016-50-01) for external evaluation,

MFSc Thesis Submitted

Phenotypic and molecular characterization of *Pseudomonasaeruginosa* isolated from Indian oil sardine marketed in Cochin, 2020. Submitted by Ms. AhanaVijayan (FPT-2017-20-02)M.F.Sc student ofDept of Fish Processing Technology, KUFOS.

Screening of virulent genes in *Edwardsiellapiscicida* isolated from fresh water fish in Kerala 2020 submitted by Ms.Jameema Jamal K. I. (AAHM) M.F.Sc student ofDept of Aquatic Animal Health-KUFOS.

Isolation of chitinolytic bacteria from the sediment impacted by waste water released from chitin processing plant, 2020. Submitting by Mr. Ramnivas Saket (FPT-2018-20-05) [M.F.Sc](#) student of Dept. of Processing Technology –KUFOS

MSc Thesis Submitted

Isolation and characterization of specific spoilage bacteria from marketed marine fish, 2020. Submitted by Nausheen N, (REG.NO: 180011020857), MSc student of Department of Zoology, Union Christian College, Aluva

Isolation and identification of chitin degrading bacteria from chitin effluent, 2019. Submitted by Ms. Husna Hussain (Reg.No:170011019838) MSc Microbiology student of Department of Bioscience, M.E.S College, Marampally

Conference Papers/abstracts

RoopaRajan , Bincy P.K. , Safeena M.P. , T.K. Srinivasa Gopal , Radhika Rajasree S.R. Fabrication of Gelatin/Chitosan/Zeolite Composite Packaging Film for Enhancing the Quality of Fresh Meat During Storage, 2020. Abstract *In: Proceedings* International, Platinum Open Access Journal (ISSN 2668-6384), Volume 2, Issue 1, 2020, 53. <https://doi.org/10.33263/Proceedings21.053053>

Evaluation of Answer sheets of other University

1. Evaluated answer sheets of the course M.Sc. in Aquaculture and Fishery Microbiology for the subjects Biotechnology and Fishery microbiology of the Calicut University
2. Evaluated answer sheets of the course FS 314 of BfSc students (2016-17 Batch) of Fisheries College and Research Institute, Thoothukudi, TNFU, Tamil Nadu

Setting of Question Paper other than University

Served as an External Examiner for setting question paper for comprehensive examination of M.F.Sc (2018-19 Batch) student of Fisheries College and Research Institute, Thoothukudi, TNFU, Tamil Nadu

Extension Activities

1. Taken online class for fish farmers in an online programme organized by Kerala Aquafarmers Federation (ADCOS), Payyannur, Kerala on 17/06/2020 (8.30-9.30 pm) on the topic "Use of Probiotics in aquaculture"
2. Published an article in MALAYALA MANORAMA daily

Publications Dr.Preetham: (2019-2020)

1. Praveen Kumar I, Purabi Sarkar, Stefi Raju V, Manikandan V, Ajay Guru, Aziz Arshad, **Preetham Elumalai** & Jesu Arockiaraj (2020): Pathogenicity and Pathobiology of Epizootic Ulcerative Syndrome (EUS) Causing Fungus *Aphanomyces invadans* and Its Immunological Response in Fish, *Reviews in Fisheries Science & Aquaculture*. DOI: 10.1080/23308249.2020.1753167, (Impact factor: 4.750).
2. Amitha Kurian, Hien Van Doan, Wanaporn Tapingkae, **Preetham Elumalai**. Modulation of

- mucosal parameters, innate immunity, growth and resistance against *Streptococcus agalactiae* by enrichment of Nile tilapia (*Oreochromis niloticus*) diet with *Leucas aspera*. Fish Shellfish Immunol. 2019 Dec 14;97:165-172. (Impact factor: 3.185)
3. **Preetham E**, Rubeena AS, Vaseeharan B, Chaurasia MK, Arockiaraj J, Olsen RE. Antibiofilm properties and immunological response of an immune molecule lectin isolated from shrimp *Metapenaeus monoceros*. Fish Shellfish Immunol. 2019 Sep 15. (Impact factor: 3.185)
 4. Rubeena AS, **Preetham E**. Antimicrobial properties and phenoloxidase activation of the lectin isolated from kadal shrimp (*Metapenaeus dobsoni*). Fish Shellfish Immunol. 2019 Jul; 90:118-125. (Impact factor: 3.185)
 5. **Elumalai Preetham**, Prakash, P, Musthafa, M. S, Faggio, C. (2019). Effect of alkoxy glycerol on growth performance, immune response and disease resistance in Nile Tilapia (*Oreochromis niloticus*). Research in Veterinary Science. 2019 Apr;123:298-304. (Impact factor: 1.762).
 6. Abdul Salam Rubeena, Mani Divya, Baskaralingam Vaseeharan, Sivashanmugam Karthikeyan, Einar Ringø, **Elumalai Preetham**. Antimicrobial and biochemical characterization of a C-type lectin isolated from pearl spot (*Etroplus suratensis*). Fish Shellfish Immunol. 87 (2019) 202-211. (Impact factor: 3.185).
 7. **Preetham Elumalai**, Abdul Salam Rubeena, Jesu Arockiaraj, Ratre Wongpanya, Matteo Cammarata, Einar Ringø & Baskaralingam Vaseeharan (2019) The Role of Lectins in Finfish: A Review, Reviews in Fisheries Science & Aquaculture, 27:2, 152-169, Review. (Impact factor: 4.750).
 8. Rathina Prabha, Anbazahan Sannasimuthu, Venkatesh Kumaresan, **Preetham Elumalai** and Jesu Arockiaraj. Intensifying the Anticancer Potential of Cationic Peptide Derived from Serine Threonine Protein Kinase of Teleost by Tagging with Oligo Tryptophan. International Journal of Peptide Research and Therapeutics, 2019, 1-9. (Impact factor: 1.219)

FACULTY OF FISHERIES –Dept of Fisheries Resources Management

Staff strength

Professor	: 0	
Associate Professor	: 1	Dr. MK Sajeewan, Associate Professor and HoD
Assistant professor	: 4	
<ol style="list-style-type: none"> 1. Dr. K.J Jayalakshmi, Asst Professor 2. Dr. S Pramila, Asst Professor 3. Dr. Rajeev Raghavan, Asst Professor 4. Dr. Anvar Ali P.H, Asst Professor 		

Student strength

B.F.Sc / B.Tech – year wise		
MFSc/ M Sc (I year)	:9	
MFSc/ M.Sc (II year)	:9	
PhD	:12	

Plan for the current academic period

1. Setting up of referral museum of fishes
2. Setting up of modern physiology lab
3. Setting up of age and growth lab

Academic achievement of Students

Junior Research fellowship awarded to ChinnuRamanan in the subject Environmental Sciences based on National Eligibility Test (UGC-NET) conducted in December, 2018.

Capacity building of Staff and Students

DrPramila participated in the orientation programme conducted by UGC-HRDC, University of Kerala, sponsored by RUSA from 26-04-2019 to 23-05-2019.

Research achievements and publications of Staff and Students

1. U Katwate, D Apte & R Raghavan (2020) *Dawkinsiauttara*, a new species of filament barb (Teleostei: Cyprinidae) from the Western Ghats of India. *Vertebrate Zoology* 70 (4): 717–730.

2. BKA Sumarto, H Kobayashi, R Kakioka, R Tanaka, K Maeda, HD Tran, N Koizumi, S Morioka, V Bounsong, K Watanbe, P Musikasinthorn, S Tun, LKC Yun, VK Anoop, R Raghavan, KWA Masengi, S Fujimoto & K Yamahira (2020) Latitudinal variation in sexual dimorphisms in a freshwater fish group. *Biological Journal of the Linnean Society* 131: 898–908.
3. A Sidharthan, R Raghavan, VK Anoop, S Philip & N Dahanukar (2020) Riddle on the riffle: Miocene diversification and biogeography of endemic mountain loaches in the Western Ghats Biodiversity Hotspot. *Journal of Biogeography* 47 (12): 2741–2754.
4. H Sudasinghe, R Pethiyagoda, T Ranasinghe, R Raghavan, N Dahanukar & M Meegaskumbura (2020) A molecular phylogeny of the freshwater-fish genus *Rasbora* (Teleostei: Cyprinidae) in Sri Lanka reveals a remarkable diversification - and a cryptic species. *Journal of Zoological Systematics and Evolutionary Research* 58: 1076–1110.
5. H Sudasinghe, R Pethiyagoda, R Raghavan, N Dahanukar, L Rüber & M Meegaskumbura (2020) Diversity, phylogeny and biogeography of *Systomus* (Teleostei, Cyprinidae) in Sri Lanka. *Zoologica Scripta* 49: 710–731.
6. R Britz, N Dahanukar, VK Anoop, S Philip, B Clark, R Raghavan & L Rüber (2020). *Aenigmachannidae*, a new family of snakehead fishes (Teleostei: Channoidei) from subterranean waters of South India. *Scientific Reports* 10: 16081
7. A Pinder, R Raghavan & RJ Britton (2020) From scientific obscurity to conservation priority: research on angler catch rates is the catalyst for saving the hump-backed mahseer *Tor remadevii* from extinction. *Aquatic Conservation: Marine and Freshwater Ecosystems* 30: 1809–1815.
8. CR Renjithkumar, K Roshni, R Raghavan & K Ranjeet (2020). First record of the Mayan Cichlid *Mayaherosurophthalmus* (Günther, 1862) in South Asia and its potential implications. *Journal of Applied Ichthyology* 36: 699–704.
9. M Sri Hari, Y Gladston, SM Ajina, GB Sreekanth, R Raghavan & AK Jaiswar (2020) Demographics of an endemic and threatened small cyprinid, *Pethiasetnai* from the northern Western Ghats. *Marine and Freshwater Research* 71(7): 810–813
10. R Sundar, VK Anoop, A Sidharthan, N Dahanukar & R Raghavan (2020) The identity and distribution of *Bhavanaannandalei* Hora 1920 (Cypriniformes: Balitoridae), a hillstream loach endemic to the Western Ghats of India. *Journal of Threatened Taxa* 12(10): 16262–16271
11. U Katwate, P Kumkar, R Raghavan & N Dahanukar (2020) Taxonomy and systematics of the “Maharaja Barbs” (Teleostei: Cyprinidae) with the description of a new genus and species from the Western Ghats, India. *Zootaxa* 4803: 544–560

12. A Pinder, R Raghavan, SJ Cooke & R Britton (2020) Covid-19 and biodiversity: the paradox of cleaner rivers and elevated extinction risk to iconic fish species. *Aquatic Conservation: Marine & Freshwater Ecosystems* 30: 1061–1062.
13. K Roshni, CR Renjithkumar, R Raghavan, N Dahanukar & K Ranjeet (2020) Population dynamics and management strategies for invasive *Clarias gariepinus* in the Western Ghats Biodiversity Hotspot. *Journal of Threatened Taxa* 12(10): 16380–16384.
14. U Katwate, JDM Knight, VK Anoop, R Raghavan & N Dahanukar (2020) Three new species of filament barbs of the genus *Dawkinsia* from the Western Ghats of India. *Vertebrate Zoology* 70(2): 207–233.
15. A Pinder, R Raghavan, SD Bower & RJ Britton (2020) Length-weight relationship of two conservation-concern mahseer species (genus *Tor*) of the River Cauvery, Karnataka, India. *Journal of Threatened Taxa* 12(10): 16257–16261.
16. A Kanagavel, S Parvathy, B Tapley, N Nirmal, G Selvaraj, R Raghavan, C Murray, N Owen & ST Turvey (2020) Are local and traditional ecological knowledge suitable tools for informing the conservation of threatened amphibians in biodiversity hotspots? *Herpetological Bulletin* 153: 3–13.
17. S Raj, A Biju Kumar, R Raghavan & N Dahanukar (2020) Amazonian invaders in an Asian biodiversity hotspot: understanding demographics for the management of the Armoured sailfin catfish, *Pterogoplichthys pardalis* in Kerala, India. *Journal of Fish Biology* 96(2): 549–553.
18. D Harries, T Arbenz, N Dahanukar, R Raghavan, M Tringham, R Duwaki & G Proudlove (2019) The world's largest known subterranean fish: a discovery in Meghalaya (NE India) of a cave-adapted fish related to the golden mahseer, *Tor putitora* (Hamilton 1822). *Cave and Karst Science* 46: 121–126.
19. G Ramvilas, K Shalu, R Raghavan & K Ranjeet (2019) Mapping octocoral research in Asia with particular reference to the Indian subcontinent: trends, challenges and opportunities. *Journal of Threatened Taxa* 11(13): 14691–14721.
20. VK Anoop, R Britz, CP Arjun, N Dahanukar & R Raghavan (2019) *Pangiobhujia*, a new, peculiar species of miniature subterranean eel loach lacking dorsal and pelvic fins (Teleostei: Cobitidae). *Zootaxa* 4683: 144–150.
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32. Kiranya. B, Pramila. S and G.B Sreekanth, 2019. A fish based index to assess the habitat quality of a temporarily closed sandbar estuary from Western coast of India. Conference paper submitted to Regional Studies in Marine Science (under review).

33. Best paper poster award presented to Kiranaya B. for the poster titled, “ A fish based index to assess the ecological quality of a temporarily closed sandbar estuary from South West Coast of India: the case of Poonthura estuary” presented in the International Conference on Frontiers in Marine Science- Challenges and Opportunities- MARICON-2019, organized by Cochin University of Science and Technology from 16-20 December, 2019.

34. Young Marine Biologist Award 2019 presented to Albin Albert C. and Pramila S. for the presentation titled “ Ichthyodiversity of Stake net fishery of Cochin Backwaters” being adjudged as best digital presentation in the International Symposium on Marine Ecosystems Challenges and Opportunities (MECOS 3) organized by Marine Biological Association of India from 7-10 January, 2020

35. Dr. Jayalakshmi K J participated World Ocean Science Congress 2019; 25th -27th February 2019, held on at Andhra University Visakhapatnam and presented paper

Hani Mohandas P.M and Jayalakshmi K.J, Response of estuarine zooplankton to the 2018 Kerala flood.

36. Dr. Jayalakshmi K J participated National Seminar on Environmental status of Estuarine and Coastal Ecosystems in India 14-16 March, 2019, University of Kerala

Hani Mohandas P.M and Jayalakshmi K.J, A Comparative study of mesozooplankton in two major estuaries of Kerala

37. ShimiH and Jayalakshmi K J, Exploring the Traditional Knowledge of Sand Crabs, Paper presented National Seminar on Environmental status of Estuarine and Coastal Ecosystems in India, held at University of Kerala, Trivandrum

38. Dr. Jayalakshmi K J participated International Conference on Benthos; Department of Marine Biology, Microbiology and Biochemistry, CUSAT, Kochi, India International

An Overview of Baby Clam Fishery in Vembanad Backwater; Amritha, K.S. and Jayalakshmi, K.J.

39. Distribution Pattern of Larval Forms of Benthic Invertebrates of Two Major Estuaries; Hani Mohandas, P.M. and Jayalakshmi, K.J.; ISBN 978-81-936217-5-2

40. Dr. Jayalakshmi K J participated AQUABE 2019, 28th to 30th November 2019, Held at Kochi.

International Diversity and distribution of Bivalves in the Vembanad backwaters, Christy Ouseph and Jayalakshmi K J

Monsoonal variability of zooplankton standing stock in the Cochin estuary; PM Hani Mohandas and KJ Jayalakshmi

Composition of Epibenthic macrofaunal Community in the Kuttanad region of Vembanad lake. Amritha K.S; Jayalakshmi K.J and V. N Sanjeevan

41. Dr. Jayalakshmi K J Sixth Biennial conference of Ocean Society of India; 12th to 14 December 2019, Jayalakshmi, KJ and Neethu Mohanan

Diversity of Brachyuran crabs- An assessment based on demersal trawl catch Dr. Jayalakshmi K J International Conference on Frontiers in Marine Science (MARICON – 2019) conducted during 16 -20 December Hani Mohandas P.M 1 and Jayalakshmi K.J; Seasonal variability of Planktonic standing stock in the Ashtamudi estuary

Academic/Research/Extension activities of Faculty outside the University

1. Rajeev Raghavan delivered a Keynote talk at the Second International Mahseer Conference, Maejo University, Chiang Mai, Thailand, 12th February 2020

2. Rajeev Raghavan delivered a Plenary talk at the 16th European Congress of Ichthyology, European Ichthyological Society, Lausanne, Switzerland, 2nd to 6th September

3. Rajeev Raghavan delivered a webinar talk on Freshwater Fish Diversity in India, Freshwater Biology Regional Centre, Zoological Survey of India (ZSI), Hyderabad India, 13th August 2020

4. Rajeev Raghavan delivered a webinar talk at the Tangled Bank, INYAS-CUP Lecture Workshop, Indian National Young Academy of Sciences and Central University of Punjab, Bathinda, India, 4th June 2020

5. Rajeev Raghavan delivered a lead talk at the International Conference on Rivers for Future, Department of Aquatic Biology and Fisheries, University of Kerala, Thiruvananthapuram, India, 5th February 2019
6. Rajeev Raghavan delivered a lead talk at the International Conference on Marine Ecosystems Challenges and Opportunities, Marine Biological Association of India (MBAI) and Central Marine Fisheries Research Institute (CMFRI), Kochi, India, 9th January 2019
7. National Conference on Aquatic Ecosystems: Sustainability and Conservation, Indian Institute of Science Education and Research (IISER), Pune, India, 20th and 21st December 2019
8. Rajeev Raghavan delivered a lead talk at the National Seminar on Modern Practices in Animal Taxonomy, Maharajas College, Kochi, India, 25th and 26th November 2019
10. Rajeev Raghavan delivered a lead talk at the National Seminar on Biodiversity after Deluge – Kerala Deluge 2019, St. Thomas College, Thrissur, India, 22nd February 2019
11. Rajeev Raghavan delivered a lead talk at BRAQCON 2019: International Conference on Brackishwater Aquaculture, Central Institute of Brackishwater Aquaculture (CIBA), Chennai, India, 23rd to 25th January 2019
12. Rajeev Raghavan delivered an invited talk at the National Workshop on Skill Development in Research Writing, Department of Botany, Sacred Heart College, Thevara, Kochi, India, 21st January 2019
13. Rajeev Raghavan delivered an invited talk at the Workshop on Research Methods in Earth and Environmental Sciences, Department of Environmental Sciences, University of Kerala, Thiruvananthapuram, India, 8th March 2019
14. Rajeev Raghavan delivered a webinar talk at the Osmania University - Human Resource Development Centre, Hyderabad, India, 11th September 2020
15. Rajeev Raghavan delivered an invited talk at the Agharkar Research Institute, Pune, India, 23rd December 2019
16. Rajeev Raghavan delivered an invited talk at OutsideIn Lecture Series, National Center for Biological Sciences (NCBS), 27 December 2020
17. Rajeev Raghavan delivered an invited talk at the National Academy of Customs, Indirect Taxes and Narcotics, Government of India, 25 October 2020
18. Dr. Anvar Ali PH delivered the inaugural talk on 'Taxonomy of freshwater fishes in India' in the webinar series organized by the Association of Fisheries Graduates, Kerala on 15th August 2020.

19. Dr. Anvar Ali delivered a lead talk on the 'Systematics of freshwater fishes of Kerala' on 26th November 2020 at the National webinar series on faunal diversity in Kerala organised by the Department of Zoology, NSS College Nemmara, Kerala.

20. Dr. Anvar Ali PH delivered a lecture on the 'Farming of indigenous freshwater fishes of India' for the fish farmers on 18th December, 2020 organized by the State Agricultural Management and Extension Training Institute (SAMETI). Trivandrum.

21. Dr. Pramila Attended and presented a paper at World Brackish water aquaculture conference, BRAQCON-2019 organized by ICAR-Central Institute of Brackishwater Aquaculture and Society of Coastal Aquaculture and Fisheries (SCAFi), held during 22-25 January, 2019.

Directorate of Research

Integrated System for Aquatic Animal Health Research and Management - Establishment of a fish virology lab

A new disease in Anabas was reported. In order to investigate the cause of the disease, the muscle tissue explants of the diseased fish were seeded. Due to the oily and pus-like nature of the explant, the whole media turned turbid with bacterial overgrowth, and viral isolation could not be done. However, bacteriological analysis was carried out and the isolates were characterized.

Establishing best probiotic combination of quorum-quenching bacteria using RSM method

Twenty-two different probiotic feed combinations with four QQ bacteria (*E.faecium*, *L.casei*, *L.plantarum* & *B.thuringiensis*) were designed by using RSM software. Probiotic feed combinations with different cell densities were prepared by inoculating respective QQ isolates in suitable growth medium and incubated at 30°C for 48 h. Bacterial cells were harvested at frequent time intervals by centrifugation at 5000 rpm for 5 min at 4°C. After centrifugation, bacteria were washed twice with PBS and resuspended in PBS maintaining the cell densities. Twenty-two combinations of multiple strain probiotic feeds were prepared by adding these cell suspensions at the rate of 1 mL of culture /g of feed to incorporate 10⁴ cells/g feed, 10⁶ cells/g feed, 10⁸ cells/g feed & 10¹⁰ cells/g feed. A binder (Aqua one, Salem Microbes Private limited, India) was used at 1 mL/10g feed. Binder alone was added in control feed. After proper mixing of the ingredients, the feeds were air dried. For each quorum-quenching probiotic feed, twenty-two groups of 10 goldfish each, *C.auratus* were introduced into glass tanks of 50 L capacity. They were fed with each probiotic diet. Controls were maintained for each of twenty-two probiotic combinations. Feeding was done two times daily at the rate of 3% of the body weight of *C.auratus* for 30 days. Continuous aeration and water flow were maintained in all glass tanks. The activity and behaviour of the fish were monitored and recorded on a daily basis.

Experimental setup of probiotic feed trial



All clinically healthy fish were challenged with *A. hydrophila*. Controls and probiotic fed fish were challenged (10 nos/group) via intra peritoneal injection with 0.1 mL of 1×10^6 cells (LD50 based on preliminary work). The fish were observed to determine mortality, external signs of infection and behavioural abnormalities for two weeks. Dead fish were removed immediately for bacteriological examination. Bacterial isolation was carried out from hemorrhagic and ulcerative lesions, and from dead fish's visceral organs. All the experiments were performed in triplicate and the data are being analysed.

Molecular characterization of multidrug resistance genes and mechanism of transfer among bacteria associated with freshwater and brackish water aquaculture systems in the vicinity of hospitals of Kerala

Antimicrobial resistance is a major global public health concern and considered as a serious food safety issue. Samples were collected from Thalasseri, Ernakulam, Kollam, Alappuzha (closer to hospitals) and Idukki. Samples include the direct discharge from the hospital to public water bodies and the aquaculture farms using the same water for aquaculture. The study indicated that quinolone and carbapenem resistance in Enterobacteriaceae was found to be very high in Kollam district. Different types of plasmid mediated quinolone resistance genes such as *qnrB*, *qnrS*, *qnrA* (Fig. 4) and aminoglycoside encoding gene *aac(6)-Ib-cr* were identified. The important findings of the study include:

- (I) (i) detection of the gene *OqxAB* in 6 *E. coli* isolates from hospital discharge point (Fig. 2 and Fig. 3). *OqxAB* is a plasmid-encoded efflux pump family Resistance-Nodulation-Cell

division (RND). The overexpression of OqxAB confers resistance to olaquinox, trimethoprim, chloramphenicol and decreases bacterial susceptibility to fluoroquinolones, thereby increasing the MICs with these agents. In addition, the OqxAB multidrug efflux pump has also led to reduced susceptibility to detergents and disinfectants, including benzalkonium chloride, triclosane, especially SDS.

(ii) detection of the *qacE?1* gene in an *E. coli* isolate from Kollam discharge point. The *qacE?1* gene is a typical element of the 3-CS region of the class 1 integron and provides resistance to quaternary ammonium compounds (QAC) located on a mobile genetic element and codes for an efflux-pump mode of resistance mechanism. The *qac* genes were most commonly found in Enterobacteriaceae in combination with genes coding for aminoglycoside resistance, chloramphenicol, sulphonamides, trimethoprim and β -lactams.

In order to investigate the reason for the high resistance showed by the isolates from Kollam district to quinolone class of antibiotics, soil samples were collected for antibiotic residue by LC-MS analysis. Among the studied antibiotics, ciprofloxacin residue was detected at the highest concentrations in the soil sample. CIP level was detected in soil sample was 15ppb. Continuous long-term exposure to this concentration is insufficient for the bacteria to develop resistance and is a serious matter of concern, as exposure to concentrations below the subtherapeutic level over long periods of time may be an optimal condition for selection and consequent resistance spreading.

Establishment of Fish and Prawn Seed Bank

The culture of ornamental fish is one of the most economic and profitable areas of fish farming activities. Poeciliid species demonstrate viviparous reproductive strategy with the female storing the transferred sperms within the ovary, followed by internal fertilisation of the eggs. The principal objective of this study was to evaluate the effect of live feed on growth and reproductive performance of fish.

The Influence of Live feed Supplementation on Growth and Reproductive Performance of Swordtail (*Xiphophorus helleri* Heckel 1848) broodstock

The study was taken up to demonstrate the efficacy of live feed *Daphnia* for growth efficiency enhancement potential in swordtail brooder fish. The results showed that fish fed with *Daphnia* two times daily had a mean final weight of 5.97 g, feed conversion ratio of 1.33 and mean fecundity of 190 embryos per female, which was significantly higher than the yield from the other



two treatments. Feeding with live feed twice a day was found to be the best among the three treatments

Evaluation of growth performance and breeding habits of fighting fish (*Betta splendens*) under 3 diets and shelters

Various factors affecting the growth and survival of fighting fish larvae, including nutrition, substrate, water quality and stress were studied in separate laboratory aquaria. Three substrates namely thermocol, polythene and banana leaf were tried in triplicate. The effect of three different live feeds namely white worm, moina and bread worm were experimented in a thirty-day feeding trial controlling water quality as pH (7-7.5), temperature (26- 28⁰C), and dissolved oxygen (5mg/L). A strong positive relation was observed between the temperature and bubble nest area. The best temperature for bubble nest construction was noted to be 28⁰C. The results indicated that thermocol to be a better substrate considering bubble nest area and fry survival (80-84%). Among the live feeds white worms gave good results followed by bread worms and Moina .

Directorate of Extension

Directorate of Extension, Kerala University of Fisheries and Ocean Studies (KUFOS) has implemented the following Plan Projects funded by Government of Kerala during the year 2019-2020

Village Adoption for Empowerment and Capacity Building Ensuring Livelihood of Fisherfolk in Central Kerala

Kerala University of Fisheries and Ocean Studies (KUFOS) is implementing the Plan Project “Village Adoption for Empowerment and Capacity Building Ensuring Livelihood of Fisherfolk in Central Kerala” from the year 2015 onwards. The major objectives of the project are promoting diversified aquaculture practices and allied activities in an eco-friendly and sustainable manner so as to increase the fish production of the State, creating more employment opportunities to the fish farmers and fisherfolk, thus ensuring livelihood security to them. The project also focuses on transfer of post-harvest technologies to the target group with a view to ensure better quality products both for domestic and export market and helps in providing gainful employment by establishing small scale units along the coastal area. While promoting these activities special emphasis is being given for women empowerment also. As part of the project the following training programmes were conducted

a. Training programme on “Seed Production and Farming Strategies of Pearlsplit” from 29/10/2019 to 31/10/2019

A Training programme on “Seed Production and Farming Strategies of Pearlsplit was organized at KUFOS from 29/10/2019 to 31/10/2019. Dr. Daisy. C. Kappen, Director of Extension welcomed the dignitaries and farmers. The programme was inaugurated by Prof. (Dr.) A Ramachandran, the honourable Vice Chancellor of KUFOS in the presence Dr. B. Manojkumar, Registrar, Dr. K. Gopakumar, Professor of Eminence, Dr. T V Sankar Director of Research, Dr. Riji John, Dean, Faculty of Fisheries and Sri Joby George, Finance Officer. Scientists both from KUFOS and CMFRI and a successful farmer Sri. Vineesh, Puthenthura, Karimeen Hatchery, Udayanapuram who is in the field of breeding and farming of pearlsplit for the last 20 years engaged classes to the farmers on various topics viz. Basic principles of aquaculture, Seed production of pearlsplit in tanks, Cage culture of pearlsplit, Pen culture of pearlsplit, Preparation of artificial feed, Fish diseases and remedial measures. A field trip to Puthenthura Karimeen hatchery was also organized

on the last day. Altogether 30 farmers attended the training programme

Participants of the training programme



b. Training Programme on “Advanced Techniques in Aquaculture” from 18/2/2020 to 20/2/2020

A three day training programme on “ Advanced Techniques in Aquaculture ” was organized at KUFOS from 18/2/2020 to 20/2/2020. Dr.Daisy.C.Kappen, Director of Extension welcomed the dignitaries and farmers. The programme was inaugurated by Prof.(Dr.)A Ramachandran, the honourable Vice Chancellor of KUFOS in the presence Dr.B.Manojkumar, Registrar, Dr.T V Sankar Director of Research, and SriJoby George, Finance Officer and DR. K Dinesh, HOD, Department of Aquaculture. Scientists both from KUFOS and CMFRI including a successful farmer Sri.Vineesh, Puthenthura Karimeen Hatchery, Udayanapuram engaged classes to the farmers on various topics viz. fresh water fish farming, ornamental fish culture, brackishwater shrimp/vannamei culture, live feed culture, culture of indigenous fishes and their breeding, biofloc fish culture, seed production and culture of pearlspot, cage aquaculture, pen culture, aquaponics, preparation of artificial feed, fish diseases and remedial measures, and culture of GIFT Tilapia. A field trip to Puthenthura Karimeen hatchery, Vaikom was also organized on the last day. 39 farmers attended the training programme

Prof.(Dr.)A Ramachandran,honorable Vice Chancellor, KUFOS inaugurating the training programme



Participants of the training programme



Visual Problem Appraisal(VPA) Kerala's Coast 2.0- Visit by Netherlands team at Flood effected villages adopted by KUFOS

Visual Problem Appraisal(VPA) is a film based learning strategy with ethnographic,

deliberative and artistic aspects, which aims to enhance the problem analysis of complex issues and to facilitate the development of actions. VPA creates a space for social dialogue as it is made up of a series of filmed stakeholder portraits and accompanying documentaries. These can be used in diverse arenas such as in participatory process of policy development and /or implementation and education. VPA Kerala's Coast 2.0 provides new research data about livelihoods, costal zone management and climate adaptation that could be combined with the data from original VPA Kerala's coast of 2003 already developed to support a longitudinal study about changing drivers, perspectives, roles and changes in the context of sustainability transactions. In University/College education, VPA Kerala's coast 2.0 could be used in B Sc and MSc education about water governance, climate adaptation, development studies and maritime and costal governance. It will help to familiarize with the learning strategy underlying the VPA and will provide an opportunity to work with the materials of VPA Kerala's Coast to get a good feel what it implies to meet real stakeholders in a mediated way

As part of the VPA Kerala's Coast 2.0, a team from Netherlands, Miss Loes Witteveen and Mr. Jeroen Rijke visited two villages, Kottuvally and Thiruthipuramon on 26/9/2019 which were adopted by KUFOS under the plan project "Village adoption" and effected by flood during the year 2018. The team interacted with farmers and collected the details of fish farming including the losses occurred due to flood. The team reported to the honorable Vice Chancellor of KUFOS that they had been able to work very productively and the new theme on the floods turned out to address diverse aspects of disaster management. They appreciated the active approach taken by Dr. Daisy C. Kappen, Director of Extension in implementing the project successfully in the field. Also expressed their gratitude for getting an opportunity to interview Dr. Daisy C. Kappen, the Implementing Officer of the out reach programme and also to interact with the farmers who suffered due to severe damages by floods and received both technical and moral support from KUFOS in restarting their enterprise. The team submitted proposals:-

- To use the VPA Kerala's Coast 2.0 in education at KUFOS, VHL and other Universities
- For follow up activities with VPA that support collaborative learning/governance in the public domain, such as workshops with stakeholders
- To develop new educational methods like MOOC

Directing the farmer for producing a film on “ Effects of flood 2018” for VPA



Interviewing Dr.Daisy .C.Kappen, PI of the project “Village Adoption”



Netherlands team with the farmers in the field



Seed collection Centre at Panangad

As the seeds of the pearlspot are naturally available in the backwaters of ward V of the KumbalamPanchayath, for collecting the seeds and distributing the same to the other farmers, two plastic tanks of 1000liter capacity was provided to Sri A ASatheerthan, Oranpozhiyil, Panangad. He is a successful farmer who has been doing both pen culture and cage culture for the last 10 years. Such an approach will serve as a partial solution to the scarcity of seeds for enhancing the fish production of the State and also motivate other farmers in starting pearlspot culture, the signature fish of Kerala.

Sri.A A Satheerthian receiving the plastic tanks for keeping the pearlspot seeds



Demonstration Unit Established at CIAL, Kochi

Golf Club, CIAL, Nedumbassery has approximately 3 acres of freshwater area having sufficient water throughout the year for promoting aquaculture activities. On the request of the officials working at Golf club, CIAL, Sri., Premkumar.T and Sri. Sunny Joseph who attended the training programme on “Seed Production and Farming Strategies of Pearlspace” organized at KUFOS from 29/10/2019 to 31/10/2019, a team of experts Dr.K Dinesh, Head of the Department of Aquaculture, Faculty of Fisheries, Dr.Anwar Ali P H, Asst. Professor, Department of Fisheries Resource Management, Faculty of Fisheries, Dr.Daisy.C.Kappen, Director of Extension i/c, KUFOS and Sri Saneer N S, Fishing Technology Assistant visited the CIAL Golf Club during the first week of November 2019 to know the prospects for promoting fresh water fish farming in this area. After site inspection, taking into consideration of the physical and chemical parameters and availability of water it was found that the site is suitable for promoting culture of fishes like pearlspace, GIFT tilapia, seabass, and carps. Out of the various types of fish farming, the practice of cage aquaculture of the above fishes has been identified as the most suitable one taking into consideration of management of various water quality parameters, detection of diseases if any, easy harvesting and marketing as per the market demand for ensuring better price etc. As the above officials from Golf club, CIAL expressed their interest in the culture of pearlspace, the signature fish of Kerala which is having high market demand as an esteemed table fish, the University agreed to conduct a demonstration of the cage aquaculture of pearlspace in this area. Three hundred numbers of pearlspace seed measuring 5-6cm were stocked in the cages of 3mx2mx2m size. Sampling and growth assessment shows better growth and survival rate and continuous monitoring of the same is being carried out.

Stocking of the pearlspace seeds in cages



Fish Farmers Day celebrations- One day workshop “Popularizing Aquaculture- New Thoughts” on July 10th

It was in 2001 that the Government of India declared July 10 as Fish Farmers Day to honour scientists, Hiralal Choudhary, and Dr. K. H. Alikunji who successfully conducted induced - breeding in Indian major carps during the year 1957. Every year KUFOS is celebrating “Fish Farmers Day” in a befitting manner. During the year 2019 KUFOS celebrated “Fish Farmers Day” on 10/7/2019 by organizing a one day workshop on “Popularising Aquaculture-New thoughts”. The programme was inaugurated by the honorable Vice Chancellor of KUFOS Prof.(Dr.) A. Ramachandran and presided over by Dr. B. Manojkumar Registrar, KUFOS. Dr. Daisy. C. Kappen Director of Extension welcomed the gathering. Dr. T. V. Sankar, Director of Research, Dr. Riji John Dean, Fisheries offered felicitations on this occasion. Scientists of KUFOS engaged classes to the farmers on various topics in aquaculture

III. Establishment of Farm Radio Station for Hastening Fisheries development in the State

Providing quick information at the right time to the stakeholders in the fisheries sector is indispensable for discharging their diversified activities both in the aquaculture and marine capture fisheries. Though tremendous developments have been made in the field of aquaculture and allied sectors, the technologies have not percolated to the fisherfolk and fish farmers to the desired extent. Lack of adequate knowledge about the various technologies still acts as a major constraint in the wide spread adoption of diversified practices in an eco-friendly and sustainable manner and efficient utilization of the vast resources in the State of Kerala. Transfer of technologies to the target group at a faster rate using appropriate media will help in the efficient utilization of the various fishery resources, augmenting fish production of the State, creating more employment opportunities to the fisherfolk who are facing problems as low catch, increased fishing effort etc. Similarly, the marine capture sector is also facing various challenges at present, of which the most important one is the more or less stagnant position of the Kerala State in marine fish production during the past few years due to over exploitation, juvenile fishing etc. Creating awareness about the responsible fisheries and need to conserve the fishery resources for the future generation is the need of the hour which requires urgent attention. In addition to these, both State and Central Government Agencies are involved in various types of welfare activities with the objective of the socio economic development fisherfolk and fish farmers and providing both technical and financial support to them. Here also, lack of awareness about these assistance

provided by different agencies acts as a major constraint in availing of benefits from the concerned agencies. As the extension education focuses upon the overall development of the people, due attention should be given to their total development in all dimensions viz. financial, social, cultural, spiritual etc. For this, in addition to the dissemination of technologies, conducting value based cultural programmes, leadership and personality development programmes etc. are also required. Such programmes can be organized with the participation of the community which can be recorded, and broadcasted/telecasted later on for the benefit of the entire community. Besides these, KUFOS as part of the extension activities under various Plan Projects funded by Government of Kerala, is also conducting various programmes for the benefit of the community which can also be transferred. Towards fulfilling the above intentions, as part of the Plan Project “Farm Radio”, an Audio Video Recording Studio has started functioning during the year 2018 onwards. Currently a Cameraman cum NLE Editor and a Production Associate are working in this project. The University Governing Council in its 59th meeting held on 27/12/2018 decided to rent out the facilities of the studio to other individuals/institutions etc. so as to generate some revenue to the University. As per this decision, Directorate of Extension is outsourcing the facilities and started creating income to the University. An amount of Rs.46,100/- (Forty six thousand and one hundred only) has been earned during the year 2019-20 by outsourcing the studio facilities. The following activities were carried out during the year 2019-20.



Finance

ABSTRACT OF ACCOUNTS (PROVISIONAL) FOR THE FINANCIAL YEAR ENDED 31.03.2020							
Receipts	Schedule	As on 31.03.2020	As on 31.03.2019	Payments	Schedule	As on 31.03.2020	As on 31.03.2019
Opening balance	I	226045353.8	306254033.4	Plan Expenditure	X	205581589	190141191
Receipts from Govt. of Kerala	II	274339812	356508000	Non - plan expdtr.	X	163683977	137073476
Receipts from EAPs	III	10599284.34	14437650	Payment from IR	XI	3132243	3970913
Internal receipts	IV	66327390.25	58258704.4	Debt head	XII	25505628.35	18171028
other income/ cancellation of cheque (PTSB)	V	21524332	1686745	Pension	XV	15118182	64351211
Bank Interest - cbank charges	VI	14620776.8	4133615.94	GPF closure & withdrawal	XVIII	8969072	14007676
Receipt from ICAR	VII	11248307	25028000	ICAR Expenditure	VII	12120126	25620307
Debt head Puduvypu	XIII	2006704	981342	Debt head Puduvype		1046575	
Received from Other Universities- GPF	XIX	651257	3045601	Net Resumption	XVII	0	110280027
Miscellaneous receipts in schools	VIII	777883	620662	EAP Expenditure	XIV	12530725	8403301
debt head	IX	39251529	27110130	Closing balance	XVI	219704511.8	226045353.8
TOTAL		667392629.2	798064483.8			667392629.2	798064483.8

Infrastructure

PLAN FUND PROPOSALS APPROVED FOR THE YEAR 2019-2020

Sl.No	HEAD	AMOUNT (2019-20)cr
I	INFRASTRUCTURE	
1	Construction works at KUFOS HQ includes Physical Amenity Centre, , Research Complex, Seminar Complex , Compound Wall, International Hostel And Staff Quarters,	16.05
2.	Repair and Renovation of the existing Building	0.50
3.	Upgradation of Playground at KUFOS	1.25
4.	Campus Development and Construction of School Of Fishery Environment (Marine School) At Puthuveypu - Campus Development	1.00
5.	Development Ponds For Farming	8.37
6.	Multi Species Hatchery At Fisheries Station Puthuveypu	1.00
7.	Establishment of Fisheries Training centre kollam and Establishment of Aquaculture training centre Kannur	2.00
	Total	30.17

1.1.CONSTRUCTION OF PHYSICAL AMENITY CENTRE AT KUFOS HEADQUARTERS

The common amenity centre which acts as a business centre for the students and faculty to accommodate fish stalls for marketing the products from the fish farms of the university, fish kiosks to sell value added products, cafeteria, co-operative society, banking facilities, photocopying, ATM, post office, super market, students centre, parking space as per by-laws etc. In addition to this, a fully furnished and air conditioned seminar hall in the top floor is envisaged

The building is of RCC framed structure (G+2 floors) having a plinth area of 575 Sqm in Gr.FL, 575 Sqm in 1st Floor and 575 Sqm in 2nd floor. Thus the building shall be ultimate with a total plinth area of 1725 Sqm .

The 1st and 2nd phase of the work is completed by using the plan fund allotment for the year 2014-15 (100 lakhs) and 2015-16 (160 lakhs).The 3rd phase using the plan fund allotment for the year 2016-17 (225 lakhs, the 4th phase of the using the plan fund allotment for the year 2017-18 (50 lakhs)and the 5th phase of the work using the plan fund allotment for the year 2019-20 (100 lakhs) are in

progress. The first, second, third and fourth phases are entrusted with BSNL and the last phase is entrusted to M/s KSCADC. In this last phase, various items such as aluminum composite panel cladding using aluminum sections and vision glass panels, compound wall, landscaping and electrification work are included.

1.2. CONSTRUCTION OF RESEARCH COMPLEX AT KUFOS HEAD QUARTERS

PANANGAD

The building is RCC framed structure (G+1 floor) having a plinth area of 455 Sqm in GF and 455 Sqm in 1st Floor. The work is taken up in a phased manner. The building is used for various research activities of the University which accommodates Molecular lab, Microbiology lab, Histopathology lab, Processing hall and Aqua clinic.

First, second and third phase construction of the Research complex was entrusted with M/s. BSNL and fourth and fifth phase construction was entrusted to KSCADC. First phase work was completed and second, third, fourth and fifth phases work are in progress. During 2013-14 plan fund Rs.155 lakhs is allotted for **phase -1**, 2016-17 plan fund of Rs. 101.50 lakhs for **phase -2**, 2017-18 plan fund of Rs.50 lakhs for **phase 3**, 2017-18 plan fund of Rs.75 lakhs for **phase 4** and 2018-19 plan fund of Rs.68 lakhs for **phase 5**. The last two phases include the external works such as paving tiles, landscaping, rain water harvesting system etc.

1.3. CONSTRUCTION OF SEMINAR COMPLEX AT KUFOS HEAD QUARTERS PANANGAD

The building shall be of RCC framed structure with floor height 10.50m having a plinth area of 1044sq.m in ground floor accommodating 436 seats and 618sq.m. in first floor accommodating 184 seats. Thus the building shall be ultimate with a total plinth area of 1662 sq. m to accommodate a total seating capacity of 618. The Seminar Complex is designed as a main air-conditioned Seminar Hall, acoustically treated and provides with a centrally controlled audio system. This spacious and well-equipped facility is well suited for conducting of seminars, conferences, conventions and cultural programmes etc. The hall can also be used for screening Film.

During the plan fund 2014-15 Rs.100 lakhs for phase 1, 2015-16 plan fund Rs.150 lakhs for phase 2, 2016-17 plan fund Rs.25 lakhs for phase 3, 2017-18 plan fund Rs.200 lakh for phase 4 and 2018-19 plan fund Rs. 100 lakhs for phase 5 had allotted. The construction of phase 1 & 2 were completed and phase 3, 4 & 5 are in progress. The total project cost is Rs.1275 Lakhs.

An amount of Rs.2, 00, 00, 000/- (Rupees Two crore only) is allotted for the construction of Seminar Complex (Phase -5) in the current year includes parking, landscaping etc



1.4.COMPOUND WALL AT HEAD QUARTERS PANANGAD

The compound wall is missing in some areas on the eastern campus and on the western campus .The western campus is distributed with a number of ponds /fish ponds. In order to protect the ponds and boundaries from trespassing, a compound wall around all the campuses is very essential.

The work is taken up in in a phased manner according to the availability of fund. The first and second phases of the work under various plan funds were entrusted with M/s BSNL.The first phase for a length of 300m at western campus is completed and the second phase is in progress. The construction of third phase amounting Rs. 15 lakh for the length of 130 m, height 1.5 m, in the Eastern campus is entrusted with KEL is in the initial stage

1.5. INTERNATIONAL HOSTEL CUM GUEST HOUSE AND STAFF QUARTERS –(Phase 3)

The building is of RCC framed structure having (G + 6 floors) with plinth area of 235.98 sq.m in ground floor and 235.98 sq.m for 1st floor accommodating International hostel, and 2nd, 3rd, 4th, 5th & 6th floor each having 235.98 sq.m accommodating staff quarters. Thus the building shall be ultimate with a total plinth area of 1651.86 sq m. The initial phases (Phase I & II) under various plan funds entrusted with M/s KEL is nearing completion. The third phase, the allotted fund is Rs.175 Lakh plan fund (2019-20). entrusted with KEL, includes concreting, masonry, door & window fixing,, Steel work, Flooring, finishing, Plumbing & sanitary fitting for 2nd & 3rd floor, is in progress.

2. REPAIR & RENOVATIONS

An amount of Rs.50 lakhs is allotted for Repair & Renovation works at KUFOS HQ for the following works

Sl.No	NAME OF WORKS	ESTIMATE AMOUNT (IN LAKH)
1.	Laying Paver Block To The Road and Construction of Drain at Type 2 Quarters KUFOS HQ	25.00
2.	Construction of Gents Toilet at Western Campus	7.64
3.	Renovation of Gents Toilet In Administration Block	4.21
4.	Renovation of Ladies Toilet In Administration Block	3.50
5.	Electrification Works to Type IV/9 Quarters at North Eastern Campus KUFOS HQ	1.25
6.	Renovation of Pump House Control Panels in Head Quarters KUFOS Pananagad	8.4
	TOTAL	50.00
	AMOUNT	

3.UP GRADATION OF PLAYGROUND–PHASE 3

The University has a vast playground of area about 13000 sqm. Most of the areas are water logged. First phase of the work was entrusted with M/s. KEL under plan fund 2017-18 for an amount of Rs. 50 Lakhs was completed. The items such as site clearance, supplying and filling using good earth, consolidation by using 8 to10t power rollers etc. are included in this phase. workThe second phase of the work was also entrusted with M/s. KEL under plan fund 2018-19 for an amount of Rs. 150 Lakhs is also completed. This phase includes development of campus roads, items for site clearance, supplying and filling using good earth, consolidation by using 8 to10t power rollers etc.





4.CONSTRUCTION OF SCHOOL OF FISHERY ENVIRONMENT (MARINE SCHOOL) AT

PUDUVEYPU -CAMPUS DEVELOPMENT (PHASE 3)

The School of Ocean Studies and Technology is presently established in the main campus for the ease of administration during its inception. Since the school is offering courses with direct relevance to ocean studies, a campus and buildings developed near the shore is much beneficial for the students. In this regard, a building to hold the class and laboratories of all the departments under the school is planned to be constructed in the Puthuvypu campus of KUFOS as Marine School.

The building is designed as RCC framed structure for ground floor and gal valium sheet roofing with steel truss for first floor (G+1ultimate) with floor height 3.80m for both floors.The total area of construction is 1362sq.m with 667 sq. m in each floor and stair tower with 28.00sq.m. Ground floor consisted of lobby, office room, labs, Director's room, and class room and toilet blocks. First floor includes lobby, class rooms and toilet blocks. . BSNL Civil wing was entrusted with the construction work in a phased manner according to the availability of funds

During 2014-15 plan funds Rs.200 lakh is allotted for phase -1 and it was insufficient for the completion as per our requirement. Hence an amount of Rs.143.73 lakh was allocated from Plan fund 2018-19 for the completion of the building and the work was completed.The second phase was completed using NABARD FUND,for an amount of Rs.293.32, is completed. An amount of Rs.100 lakh is allotted for the Campus Development at Marine School, Puduveypu. as third phase.The campus development work such

as road, lighting, landscaping, drain, rainwater harvesting, earth filling, RO plant etc are included. This phase is entrusted with KSCADC.



5. DEVELOPMENT OF VARIOUS FISH FARMS

Presently there are various ponds in the KUFOS western campus compound which is not upto standards and hence it was directed by KUFOS officials to select 3 brackish water ponds, 2 fresh water ponds and its necessary facilities to make the same an ideal pond for fish farming. (west side of the western campus, total approx length of bund comes to 526m). As the existing bunds are dilapidated and low lying, the bunds for the ponds are constructed with coconut piling either side with necessary bracings and geotextiles for avoiding seepage. The bund is formed by filling excavated clay from the existing ponds. 30cm topping with gravel earth is also proposed for outer bunds. The top width of main bund is proposed for 3m width so as to ply the vehicles. For main bund outer sides facing river are proposed with rough stone work tightened and with RCC belt to protect the flowing of bund due to high flow of water. 4no's small sluices are constructed for inner pond bunds. Coconut piles of 6.00m at 1m c/c, dry rubble packing and cement concrete 1:4:8 is proposed for foundation of sluices. Over the foundation RCC base and vertical walls, beams connecting the vertical walls and cover slab are proposed. Grooves are provided at inside portions of vertical walls so as to control water by inserting the Thambakam wood planks wherever necessary.

Using plan fund allocation for the year 2017-18 (Rs. 185 lakh), the construction of earthen ponds, which includes 3 brackish water ponds, 2 fresh water ponds, outer bunds at the boundaries of proposed lake and land for protecting the proposed area for 100 m from south towards north direction with 2 no main

sluices for controlling water in and out of ponds, was entrusted with KSCADC in phased manner and completed as phase 1. An amount of Rs 50 lakhs is allotted for the development of ponds for organic farming at Western campus as phase 2. The Phase 2 is for pond area of 13,155 sq.m, includes sluice gate , clearing grass, earth work, bailing out water, ring bund construction, coconut piling, laying Geo textile membrane on inside slops, stacking and fixing causarina poles, filling quarry muck, CC interlocking paver block for road development , Retaining wall, GI chain link fabric fencing etc complete for organic farming.





6.MULTI SPECIES HATCHERY AT FISHERIES STATION PUDUVEYPU- (PHASE 2)

An amount of Rs 100 lakhs is allotted for the multi species hatchery at fisheries station Puduveypu (Phase 2). The work is entrusted with M/s KSCADC as deposit work. The 1st phase of the work is nearing completion by using NABARD funding through M/s BSNL. The present proposal amounting to Rs.100 lakhs (Phase 2) includes solid block masonry, plastering, painting, flooring, door and windows, plumbing work, quarry muck filling, Inter lock paving tile, filter system, air blower & landscaping.

NCC

Kerala University of Fisheries and Ocean Studies have a NCC unit which was under suspended animation during 2017-2018 and got revised status from October 2018 with the appointment of new Associate NCC officer Dr. Chiranjiv Pradhan. The NCC unit comes under the capacity of 7 Kerala Naval Unit NCC, Ernakulam. The enrollment capacity of the unit is 50 and presently 30 cadets are active. The cadets get their training on various aspects of NCC activities such as parade, firing, watermanship activity, swimming etc. from Naval base cochin. Cadets also get basic coaching on the functionality of naval force of the country and related arms and ammunitions. During 2019, 11 cadets have qualified for the B-certificate examination. Further, the cadets are involved in many societal works and participate in cleanliness activity, adult education, orphanage and old age visit, plantation and blood donation.

NCC unit of KUFOS celebrated swachhta Pakhwada on 28th September, 2019 which is part of the 24 month long celebration of 150th birth anniversary of Mahatma Gandhi from 2nd October, 2018. Hon' Vice Chancellor Prof. (Dr) A. Ramachandran inaugurated the Swachhta rally by waving the flag. 30 NCC cadets participated in the activity.





Women's day celebration by cadets of KUFOS



The NCC unit of KUFOS paid homage to the CRPF personnel on 16 Feb 2019 who sacrificed their lives in Pulwama terror attack.



Celebration of Republic day

Achievements of cadets

Soorya Gopan, NC1, KUFOS, Panangad, Kochi has attended the combined pre IGC-RDC-II camp on 15th Sept. 2019 held at MES College, Marampally.



Soorya Gopan

Devika Suresh, NC1, KUFOS, Panangad, Kochi has attended the Nau Sainik Camp (NSC) on 8 to 16th September, 2019 held at Kollam



Devika

National Service Scheme (NSS)



During the flood of 2019, National Service Scheme (NSS) of KUFOS had opened collection centre after registering with keralarescue.in (Regn no. 151). We have opened counters at four campuses and at Amenity centre for collecting from public from 13th to 15th August. The materials collected were handed over to District administration at civil station, Kakkanad on 15th evening. These items were despatched to Nilambur-Malappuram on the same day. About 40 volunteers were involved in the programme as most were out of station due to holidays.

Major items collected were 510 bottles of drinking water bottle (510 litres), 430 bathing soap, 5 cartons of medicine (cough syrup, antibiotics, paracetamol etc),

142 bottles of lotion, 70 packs of bleaching powder, 100 packs of washing powder and soap. 33 dettol, 100 bed sheet, 130 bath towel, 50 buckets and 70 mugs, 35 toothpaste, 50 tooth brush, 200 Kg of rice, 10 pkt mask and gloves, 50 lungi and nighty, 30 toilet brush, scrub, 2 napkins, 50kg atta and dal, 20 bigpack biscuits etc.

Approximate cost –

Drinking Water	-	10,000/-
Cloth materials	-	50,000/-
Stationery items	-	15,000/-
Cleaning materials	-	60,000/-
Medicines	-	80,000/-
<u>Miscellaneous</u>	-	<u>10,000/-</u>
Total	-	2,25,000/-

GOLDEN JUBILEE -NSS DAY CELEBRATION

NSS Day and the Golden jubilee year of NSS was celebrated at Kerala University of Fisheries And Ocean Studies(KUFOS) on 24th September 2019. An executive eye check up program and an awareness program on Eye care was also held. The program was conducted in association with LOTUS Eye Hospital and Institute.

The Formal function started at 10 AM with welcome address by Dr.Binu Varghese, Programme Coordinator, NSS-KUFOS.The function was inaugurated by Prof.A.Ramachandran Hon'ble Vice chancellor. In his speech he appreciated NSS activities and highlighted the importance of NSS flagship programme on Vembanad Cleanup. The function was presided over by Dr. B. Manoj Kumar (Registrar, KUFOS). Dr.Vishnu (Lotus Eye care hospital) introduced to the topic on "Eye care and mobile/computer use". The talk created an awareness on precautions to be taken during usage of modern gadgets to protect eye.After this certificate were distribution for students participated won prizes in the Gandhi Smrithi Competition conducted by National Service Scheme, MG University by Prof.Dr.A.Ramachandran. The Vote of thanks was delivered by Dr.Rejish Kumar V.G ,Program officer,NSS KUFOS. The executive eye check

up program started at 11 AM and continued till 5:00 PM. The technicians associated with the program showed enthusiasm to serve maximum people. A total of 116 people attended the comprehensive (6 test) eye check up program.

Gandhi Jayanthi Celebration



NSS KUFOS UNIT commemorated Mahatma Gandhi on his 150th Birth anniversary by conducting a plogging run to embrace his thoughts on importance of cleanliness in nation development. The program was flagged off by Deepak .A (Sub Inspector of Police, Panangad police station). The volunteers cleaned the national highway premises from Panangad police station to Lakeshore road. The run was also conducted inside the North Eastern block of KUFOS. Sweets were distributed to celebrate the occasion. The programs were coordinated by Dr. Binu Varghese (Program Coordinator NSS KUFOS) and Dr. Rejish kumar(Program Officer NSS KUFOS).

NSS KUFOS UNIT took part in the harbour clean up and awareness program conducted in association with the MPEDA-NETFISH at Thoppumpady harbour. The volunteers took part in cleaning the harbour premises and creating an awareness against plastic and its consequences.



The NSS unit also visited Fishing village at chellanam and distributed notices on consequences of plastic and created awareness against plastic .The volunteers interacted with veteran fisherman Mr.Antony .He provided valiant information regarding sea and its peculiarities.

cleaning and awareness campaign

National Service Scheme of Kerala University of Fisheries and Ocean Studies (KUFOS) during its Advisory Committee meeting held on 14.8.2019 decided to have long term programmes against plastic pollution in the Vembanad Lake. This was the flag ship programme taken up by the NSS unit to observe the Golden Jubilee celebration of NSS and 150th Birth Anniversary of Mahatma. As part of this NSS unit is involved in cleaning and awareness campaign in association with other likeminded organisations.



NSS unit is doing regular plastic awareness programmes in and around our campus and are sorted out to hand over to collection points. On the day of Gandhijayanthi associated with the NETFISH-MPEDA under Ministry of Commerce, Govt of India to clean up the Thoppumpady Fisheries Harbour and Manassery. Volunteers with the active participation of workers at Thoppumpady Fisheries Harbour cleared the entire area plastic free. An awareness programme was also held at the Thoppumpady Harbour against Plastic Pollution in our water bodies. The programme was inaugurated by Dr. Joice V Thomas, CEO, NETFISH and he emphasized the impact of plastic pollution on the environment and human health. State coordinator NETFISH welcomed the gathering and described the activities executed as part of Swachhta Hi Seva. Mr. Noushad from the harbour management committee

extended all support for keeping the landing center plastic free. The activities of National Service Scheme and its 150th Gandhiji commemorative year celebration to clean up Vembanad Lake the 'Vibrant Vembanad' campaign was described by Dr. Binu Varghese, Programme Coordinator. Program ended with a vote of thanks by Dr. Rejish Kumar VJ, Programme Officer NSS. After this programme a rally was organised with active participation of volunteers, fishers, workers and trade unions of the harbour. Volunteers handed over the awareness creating notices to the workers and shops in the area.

Volunteers then visited Manassery along with Programme Officers, State coordinator NETFISH and data collector. An interaction was organised at Manassery with traditional fishermen. After the interaction volunteers went for a door to door campaign and handed over notices to residents against plastic pollution and described how to properly manage plastics. About hundred households near the beach area was reached with the awareness program.

Vibrant Vembanad

This flagship programme was initiated on September 24th 2019 as part of NSS Golden Jubilee Year and 150th year of Mahatma. University under its research programme is doing fishery and environment related studies on the Vembanad ecosystem. Several surveys were done from the Alappuzha to the Ernakulam area. To sensitize public on the issues of plastic pollution to our backwaters a public programme was organised on 16.10.2019 at Marine Drive, Kochi. The results of the University studies were also made available to the



public during the meeting.



The programme initiated in the 9 AM with volunteer briefing by Dr. Binu Varghese, Programme coordinator. The volunteers were divided into two groups and they started collecting plastic from Ernakulam Boat Jetty and CMFRI side. Along with collection they spread awareness by interacting with public, shopkeepers and boat operators. The programme was well covered in the visual, radio and print media. The collection teams converged at the sorting point by 11 AM and the sorting team did separation of the items collected.

The public meeting started at 12 PM which was inaugurated by KUFOS Vice Chancellor Dr. A. Ramachandran. The meeting was attended by Dr. Manoj Kurmar, Registrar (i/c); Dr. T. V. Sankar, Director of Research; Dr. Daisy Kappen, Director of Extension; Dr. V.N. Sanjeevan, CARMC; Dr. Subhash Chandran, Director, SFE; Dr. Binu Varghese, PC, NSS-KUFOS; Dr. Rejish Kumar V J, Programme Officer, NSS apart from faculties, staff and students of KUFOS. The guest graced the occasion were Dr. M Sudhakar, Director, CMLRE; Manager BPCL Moosakutty; Charles George, Fish Workers representative etc. About 150 student volunteers participated in the plastic

awareness programme. The meeting was attended by about 200 persons including students, public, media persons etc.

In his inaugural address Vice Chancellor highlighted the issues created by plastic pollution in the Vembanad Estuary. Dr. V. N Sanjeevan presented salient findings of the survey conducted and pointed at the sharp decline in depth and width of the lake and the menace of heavy plastic pollution.

Harbour Cleaning

National Service Scheme of Kerala University of Fisheries and Ocean Studies (KUFOS) observed 150th Birth Anniversary of Mahatma on 2nd October 2019. As part of this NSS unit associated with the NETFISH-MPEDA under Ministry of Commerce, Govt of India. Volunteers with the active participation of workers at Thoppumpady Fisheries Harbour cleared the entire area plastic free. An awareness programme was also held at the Thoppumpady Harbour against Plastic Pollution in our water bodies. The programme was inaugurated by Dr. Joice V Thomas, CEO, NETFISH and he emphasized the impact of plastic pollution on the environment and human health. State coordinator NETFISH welcomed the gathering and described the activities executed as part of Swachhta Hi Seva. Mr. Noushad from the harbour management committee extended all support for keeping the landing center plastic free. The activities of National Service Scheme and its 150th Gandhiji commemorative year celebration to clean up Vembanad Lake the 'Vibrant Vembanad' campaign was described by Dr. Binu Varghese, Programme Coordinator. Program ended with a vote of thanks by Dr. Rejish Kumar VJ, Programme Officer NSS. After this programme a rally was organised with active participation of volunteers, fishers, workers and trade unions of the harbour. Volunteers handed over the awareness creating notices to the workers and shops in the area.



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International Day of Yoga

Kerala University of Fisheries and Ocean Studies (KUFOS) observed International Day of Yoga on 21st June 2019. United Nations General Assembly declared this June 21st as Yoga Day in 2015. National Service Scheme of KUFOS facilitated the programme with the assistance of Isha foundation, Kochi. The Upa-Yoga was the theme selected for this year's yoga day. Seventy five students and five staff members participated in the 90 minute programme which began at 8 am. The venue of the yoga practice was seminal hall in the main campus.

Upa-yoga consists of simple yogic practices which are fundamental and very powerful in nature. The practices include directional movement of arms, neck, Yoga Namaskar, Nadi Shuddhi, Nada Yoga, Yoga mudra and Namaskar. Yogaveer Dipu from Isha foundation led the session with the audiovisual support system. A simple 10-15 minutes daily practice session was demonstrated for the benefit of participants. The programme concluded at 9.30 am.



University Library

Staff strength

1. Assistant Librarian : Kunjumammed V S
2. Reference Officer Hr. Gr. : P V Vijayalakshmi
3. Reference Officer : Dr. Ramya Raveendran
4. Library Assistant (on Deputation): Mathew George
5. Lab. Asst (Photocopy) : Rajamma K R
6. Office Attendant : Arun K J

Plan for the current academic period

An air-conditioned reading room and IT Lab were established in Central Library during the period with the financial assistance of ICAR. Drinking water facility was also arranged by establishing a filter cum fridge in Library.

Two Campus Libraries were established for SFE and SME Schools by purchasing necessary books and other materials and appointing one library professional staff each to both the campus libraries on contract basis.

Collection Development.

- Total number of books added in the library : 343
 Total number of project reports added in the library : 7
 Total number of thesis added in the library : 37

Details of Departmental meeting conducted with agenda

Conducted 4 periodical staff meetings to improve the quality of services in the library.

Conference/Seminar/Workshop/Invited lectures organized by the Department

1. Library Automation National Workshop was conducted on 20 and 21 August 2019 in collaboration with Kerala Library Association. 84 professionals participated. Hon Vice Chancellor inaugurated the workshop.
2. Reading Week was celebrated in the month of June 19th to 24th June 2019. Hon.Vice Chancellor inaugurated the program,. An Exhibition on Literature Books was conducted with various literary competitions in collaboration with University Union.
3. CeRA conducted an orientation programme on 20th August 2019 for PG and PhD students.

Meetings attended by faculty members outside the University

1. Asst Librarian has attended University Librarians's Training of ICAR on 'Library Resource Sharing' in Chennai from 17th to 20th February 2020.

Utilization of fund for the current month (cumulative details)

Head	Amount sanctioned (2017-18)	Utilization	Particulars	Balance
Plan Fund	30 Lakhs	0	NIL	Not allocated
ICAR Grant	8 Lakhs	8 Lakhs	Books & Journals	0

Convocation



Governor of Kerala Arif Muhammed Khan inaugurates the sixth convocation ceremony at KUFOS. Vice Chancellor Dr.A.Ramachandran, Registrar Dr.B.Manojkumar, Governing Council Members Mr.Abraham John Tharakan and Dr.A.Gopalakrishnan are also seen in the picture.

The sixth convocation of Kerala University of Fisheries and Ocean Studies (KUFOS) was held on February 06,2020 . Hon. Governor of Kerala and Chancellor of KUFOS conferred degrees to 52 Under Graduates (UG) and 242 Post Graduate (PG) students including 38 MBAs, who have completed their courses in 2018-2019 academic year in different disciplines related to fisheries and ocean science in the ceremony. Governor Arif Mohammed Khan has also presented Gold Medals to 21 meritorious students who secured first rank in their courses. Four Endowment awards were also presented in the function to the best outgoing students in different UG and PG courses

While delivering the convocation address Governor Arif Mohammed Khan said that the presence of a university is socially felt when its graduates actively associate with the people in neighborhood and help them in resolving their problems. He was delivering the convocation address in the sixth convocation of KUFOS here today. Governor Arif Mohammed Khan said that the Kerala has 313 fishing villages and over 2.36 lakh active fishermen. As a university which deals with fisheries science, KUFOS has the responsibility to assist these communities with new ideas and inputs for betterment of income and a more secure life.

While delivering the presidential address in the convocation ceremony, the KUFOS Vice Chancellor Dr.A.Ramachandran said that the World Bank has accepted research projects in the area of coastal zone management to the tune of Rs 18 crores submitted

by University. The faculty members of the university have also grabbed another 10 externally funded research projects to the tune of four crores rupees and the research work under the projects are progressing.

The course wise split up of the number of students conferred degree during the convocation ceremony is as follows.

Sl. No.	Name of the Course	Number of students
1	B.FSc.	52
2	M.FSc. (Fish Nutrition and Feed Technology)	3
3	M.FSc. (Aquatic Animal Health Management)	7
4	M.FSc. (Fisheries Resource Management)	9
5	M.FSc. (Aquatic Environment Management)	8
6	M.FSc. (Fish Processing Technology)	1
7	M.FSc. (Fisheries Engineering Technology)	2
8	M.FSc. (Aquaculture)	6
9	M.Sc.(Physical Oceanography)	7
10	M.Sc., (Marine Biology)	28
11	M.Sc. (Marine Chemistry)	14
12	M.Sc. (Food Science & Technology)	27
13	M.Sc. (Marine Microbiology and Marine Drugs)	19
14	M.Sc. (Biotechnology and Bioinformatics)	15
15	M.Sc. (Applied Geosciences)	7
16	M.Sc. (Environmental Science)	15
17	M.Sc. (Remote Sensing & GIS)	10
18	M.Tech. (Coastal and Harbour Engineering)	8
19	M.B.A.	24
20	M.B.A. (Energy Management)	14
21	M.Sc. (Statistics)	8
22	LL.M (Maritime Law)	9
GRAND TOTAL		293