

**COMBINED**

# **ANNUAL REPORT**

**2011- 2015**



**KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES**

Panangad, Cochin 682 506, Kerala , India

## KUFOS annual report 2011-2015

Published by

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Printed at:

PrintExPress, Cochin

KUFOS Annual report is an in-house publication. This is a report of activities of KUFOS during 2011-2015 period

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## Honourable Chancellor



**Shri. Justice P. Sathasivam**

Hon'ble Governor Of Kerala  
(30.08.2014 onwards)

## Honourable Pro-Chancellors



**Shri. Oommen Chandy**

Hon'ble Chief Minister & Minister of Fisheries,  
Government of Kerala  
(01.04.2011 - 17.05.2011)



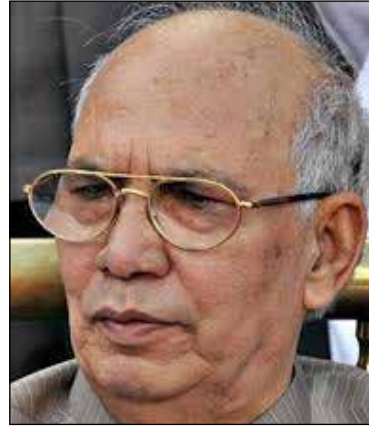
**Shri. K. Babu**

Hon'ble Minister for Fisheries, Ports and Excise,  
Government of Kerala  
(18.05.2011 onwards)

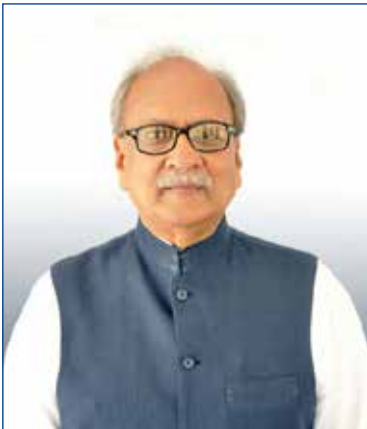
## Hon'ble Chancellors



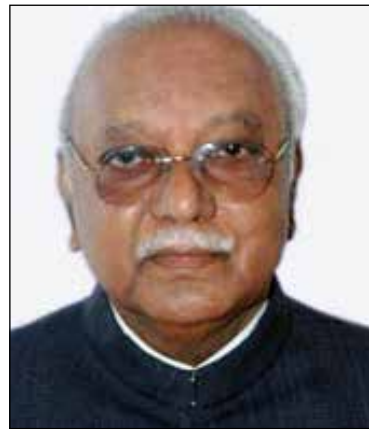
**Smt. Sheila Dixit**  
05.03.2014 - 26.08.2016



**Shri. H.R Bhardwaj**  
26.01.2012 - 22.03.2013



**Shri. Nikhil Kumar**  
23.03.2013 - 05.03.2014



**Shri M.O.H. Farook**  
08.09.2011 - 26.01.2012



**Shri R. S. Gavai**  
01.03.2011 - 07.09.2011

## Founder Vice Chancellor



**Prof. (Dr.) B. Madhusoodana Kurup**

## Pro Vice Chancellors



**Prof. (Dr.) C. Mohanakumaran Nair**  
01.04.2011 - 23.11.2014



**Prof. (Dr.) K. Padmakumar**  
19.01.2015 onwards

## Registrars



**Dr. V.M. Victor George**  
24.04.2014 onwards



**Dr. Abraham Joseph**  
10.01.2012 - 24.04.2014



**Dr. Treesa Radhakrishnan**  
01.04.2011 - 17.09.2011

# University Statutory Officers

**Finance Officer**



**Shri. Joby George P.**  
24.02.2014 onwards

**Finance Officer**

**Shri. Prince M. J.**  
04.08.2011 - 02.02.2012

**Controller of Examinations**



**Dr. K. R. Muraleedharan Nair**  
25.06.2014 onwards

**Director of Research**



**Prof. (Dr.) K. V. Jayachandran**  
03.08.2015 onwards

**Director of Extension (I/C)**



**Dr. Daisy C. Kappen**  
01.04.2014 onwards

**University Engineer**



**Shri. Joy K. M.**  
01.06.2015 onwards

# 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.

## Members of the Governing Council (2012-2015)

1.	The Vice-Chancellor, KUFOS Prof.(Dr.) B. Madhusoodana Kurup	11.	Principal Scientist & SIC Mandapam Regional Centre of CMFRI Marine Fisheries P.O., Mandapam Camp Ramanathapuram – 623 520
2.	Pro Vice-Chancellor, KUFOS Prof.(Dr.) K Padmakumar	12.	Adv. K.K. Radhakrishnan Keerthy Padanayarkulangara South Karunagappilly P.O., Kollam 690 518
3.	Secretary to Govt. of Kerala, Fisheries Department, Govt. Secretariat, Thiruvananthapuram	13	Dr. V.N. Sanjeevan, Director Centre for Marine Living Resources & Ecology (CMLRE), Kerdriya Bhavan P.O. CSEZ, Kochi – 682 037
4.	The Secretary to Govt. of Kerala Higher Education Department, Govt. Secretariat Thiruvananthapuram	14	Dr. K. M. Mathew KeralaUniversity of Fisheries and Ocean Studies, Panangad.
5.	The Secretary to Govt. of Kerala Finance Department Govt. Secretariat Thiruvananthapuram	15	Mr. N. N. Raman KeralaUniversity of Fisheries and Ocean Studies, Panangad.
6.	The Law Secretary to Govt. of Kerala Govt. Secretariat Thiruvananthapuram	16	Prof. (Dr.) Shyama S. KeralaUniversity of Fisheries and Ocean Studies, Panangad.
7.	The Executive Vice President Kerala State Council for Science and Technology and Environment Sastra Bhavan, Pattom Thiruvananthapuram.	17	Sri. Vakkachan Ambookan Ambookan Hose Puzhayoram, Poyya P.O. (Via) Mala, Thrissur – 680 733
8.	Sri. Dominic Presentation MLA Valiyathayil Sunoro Church Road Elamkulam, Kochi – 20	18	Sri. Anwar Hashim President Sea Food Exporters Association Abad Fisheries Pvt. Ltd. AbadBuilding, Kochi-2
9.	Sri. Abdurahiman Randathani, MLA Manalumpuram House Variayath, Randathani P.O. Malappuram – 676 510	19	Sri. Rahul Krishnan B.F.Sc, (2010 batch) KeralaUniversity of Fisheries and Ocean Studies, Panangad.
10.	Sri. T.N. Prathapan, MLA Thottungal Talikulam, Thrissur – 680 569		

# MISSION, VISION AND GOALS

## MISSION

The mission of the university is to serve as a flagship 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

- ◆ Making provisions for imparting education in fisheries, ocean studies and other allied branches of learning and research scholarship;
- ◆ Furthering the advancement of learning and conduct of research in fisheries, ocean studies and allied subjects;
- ◆ Undertaking extension education programmes;
- ◆ To formulate new courses and curriculum in Fisheries and Ocean Studies sector in accordance with the technical advances in the respective fields;
- ◆ To act as nodal agency to establish relationship with Institutions and Universities functioning in national and international level;
- ◆ To act as a centre of excellence having leading role for Human Resources Development in Fisheries and Ocean Studies sectors;
- ◆ To foster and encourage entrepreneurship in fisheries and ocean studies sector;
- ◆ 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;
- ◆ To develop farming practices, fish feeds, fish disease control, resistant and vigilant steps suitable to the sustainable farming of ornamental fishes;
- ◆ To preserve the fish biodiversity of Kerala, to establish their intellectual property right to develop and utilize the possibilities of new technology like bio-technology;
- ◆ 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;
- ◆ To strengthen research on fishing and related habitat and the relevant environmental factors; and
- ◆ Such other purposes as the University may deem necessary from time to time.

# FROM VICE CHANCELLOR'S DESK



I deem it a great pleasure and as a rare honour to issue this message from my desk on the occasion of bringing in the first annual report of KUFOS. I took charge as the founding Vice-Chancellor of the Kerala University of Fisheries and Ocean Studies (KUFOS) on 1<sup>st</sup> March 2011.

Fisheries play a significant role not only in ensuring food and nutritional security by augmenting production of animal protein but also in world economy by providing employment, income and foreign exchange earnings. Whereas there is ever increasing demand for food, energy and medicine for the ever-growing human population for which we need to depend more on our oceans in the years to come. The projected additional man power requirement in fisheries and ocean science and technology and allied sectors is of the order of 3.2 million by 2025 and at present there is gross inadequacy of trained manpower to deal with various emerging and vexed issues in fisheries, aquaculture and sustainable utilization of living and non-living resources of our oceans.

Some of the world class Universities in Fisheries and Ocean Studies are functioning in China, Japan, Korea, Vietnam, etc. which are having international affiliation and collaboration with a number of Universities worldwide. Though human resource development occupies top most priority in the national agenda, fisheries and ocean science education of our country is not getting thrust and adequate attention commensurate with its share in the GDP and role in ensuring livelihood, food and employment security and it is vital that the fisheries and ocean science education, research, training and extension need to be brought under an exclusive domain and delinked from the existing system of University education.

It is against this backdrop that the Kerala University of Fisheries and Ocean Studies was established as the first University of its kind in India under the Department of Fisheries, Govt. of Kerala, with a clear vision to serve as flagship University for producing professionally and technically

competent manpower with high level of entrepreneurship and employment quotient. The University is taking all efforts to impart quality education comparable with global standards and also in carrying out research in areas having much bearing in the development of fisheries and marine science sectors of the country. The functioning of a number of research institutions in Fisheries and Ocean Sciences in Cochin, the queen of Arabian Sea and the Fisheries Capital of the country, can definitely help in synergizing the various initiatives taken by KUFOS to achieve and attain its mission and mandates.

**Prof. (Dr.) B. Madhusoodana Kurup**  
Vice Chancellor

# THE UNIVERSITY



The 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.I1 /2010/Law dated 28.01.2011, the Government of Kerala has promulgated Act 5 of 2011 forming the Kerala University of Fisheries and Ocean Studies (KUFOS). KUFOS is the first Fisheries University formed in India, and comes under the Kerala State Ministry of Fisheries. As per G.O. (P) No. 510/F & PD dated 10.05.2011, the Government of Kerala disaffiliated the College of Fisheries, Panangad (one of the 19 Fisheries Colleges in the country) and Fisheries Station, Puduveypu from the 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.

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 at international level. KUFOS imparts quality education comparable with world class standards giving significance to research oriented studies with effective meaningful and rewarding extension activities. With a view to producing technocrats of high caliber, 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.

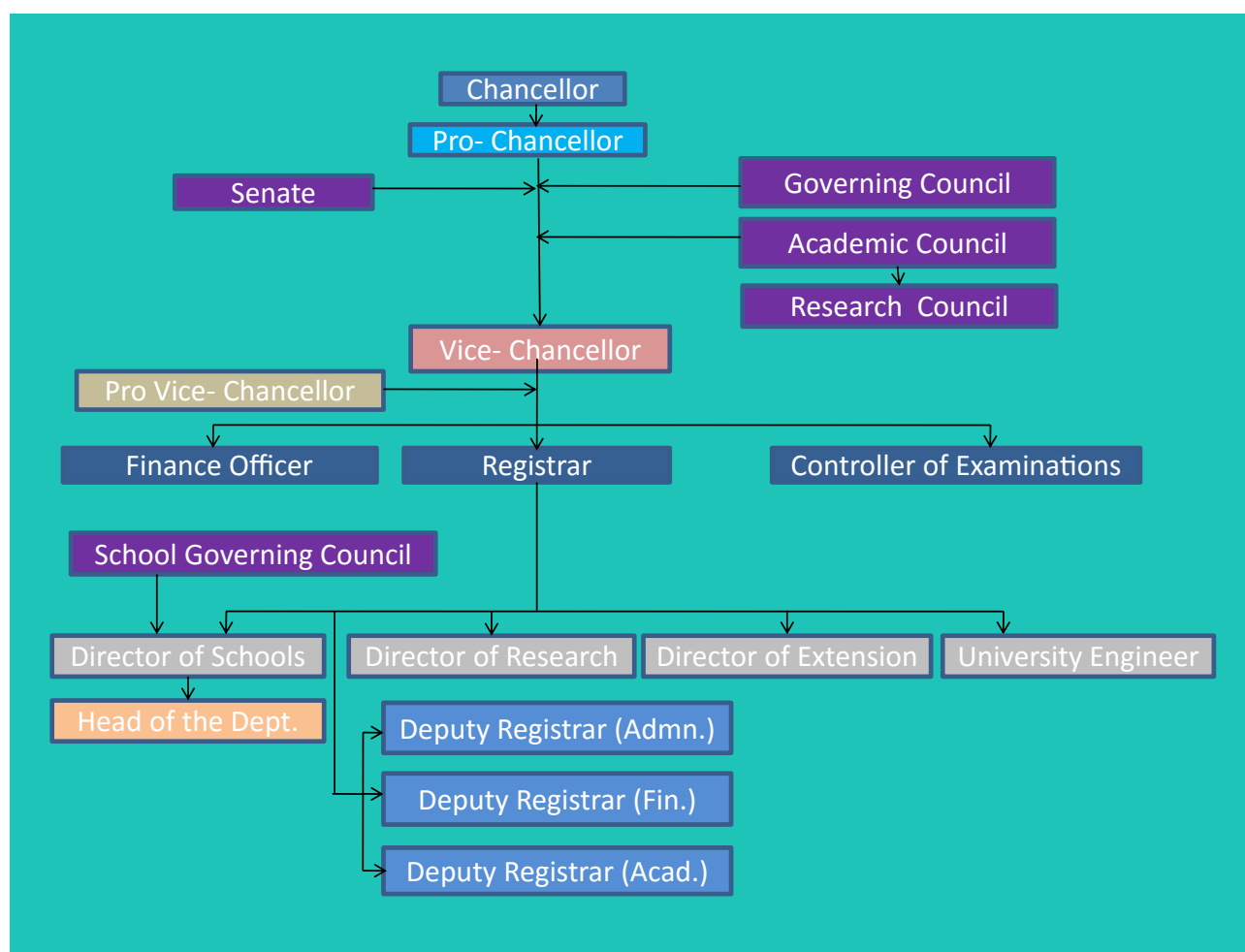
The territorial jurisdiction of the University extends to the entire State of Kerala and the Headquarters of the University is at Kochi in Ernakulam District. The headquarters of KUFOS with its enchanting blue building stands in harmony with the greenery at Panangad, 12 km away from Kochi city, along the NH-47. Apart from the sprawling campus of 75 acres in the headquarters at Panangad, KUFOS also has brackishwater and marine aquaculture areas spanning 50 acres at the Fisheries research station, Puduveypu located in the Vypin Island, and an extensive 10 acres at Thiruvallam in the State Capital, Thiruvananthapuram.

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, Finance Officer, Director of Research, Director of Extension, Directors of Schools and Heads of the Departments.

# 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.



# 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.

The Research Council is 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 Research Council shall meet at least once in six months. Research Council has not yet been constituted during the reporting period.

## 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.

# CAMPUSES OF KUFOS

## 1. Head Quarters, Panangad



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.

## 2. Fisheries Station, Puduveypu



The Fisheries Station is situated in Puduveypu in the Vypeen Island ( $9^{\circ} 58' - 10^{\circ}$  N lat. and  $76^{\circ} 10' - 76^{\circ} 12'$  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 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. Therefore, the prospect of culturable fish and fish fry recruitment is very bright. 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. The 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 programme on commercially important fishes, shrimps and ornamental fish are being implemented. In addition, many awareness programmes are also given to entrepreneurs. Station is also functioning as 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.

Recently, successful trial farming of *Litopenaeus vannamei* was carried out at the Station.

### 3. Regional Research Station, Thiruvallam



The State Government has allocated 10 acres of land at Thiruvallam for the setting up of a Regional Research Station. Infrastructural facilities proposed at Thiruvallam campus as per the Master Plan submitted by Kerala Industrial and Technical Consultancy Organisation are under consideration and will be implemented in a phased manner

# 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, 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, Union Minister of State for Power at International Hotel, Ernakulam on 28.07.2011. Dr. E. G. Silas, Former VC, KAU 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, in which the certificates were distributed by Sri. K. Babu, Hon'ble Minister of Fisheries Port & Excise.

## 1. Statutory Officers

Sl. No.	Name	Designation
1	Prof.(Dr.) B. Madhusoodana Kurup	Vice-Chancellor
2	Prof. (Dr.) K. Padmakumar	Pro Vice-Chancellor (from 19-01-2015 to Present)
	Prof. (Dr.) C Mohanakumaran Nair	Pro Vice-Chancellor (from 01-04-2011 to 23-11-2014)
3	Dr. V. M. Victor George	Registrar (from 24-04-2014 present
	Dr. Abraham Joseph	Registrar ( from 10.01.2012 to 24-04- 2014 )
	Dr. Devika Pillai	Registrar (from 17.09.2011 to 09.01.2012)
	Dr. Treesa Radhakrishnan	Registrar (from 01.04.2011 to 17.09.2011)
4	Prof. (Dr.) Muraleedharan Nair	Controller of Examinations (25-06-2014 to present)
	Dr. V. M. Victor George	Controller of Examinations (10-07-2012 to 22-04-2014)
5	Dr. K. Gopakumar	Dean, Faculty of Fisheries
	Dr. N. Chandrasekar	Dean, Faculty of Ocean Science and Technology
	Prof.(Dr.) Krishnan Kutty	Dean, Faculty of Ocean Engineering
	Prof. (Dr.) N. R. Menon	Dean, Faculty of Climate Variability and Aquatic Ecosystem
	Dr. M. Bhassi	Dean, Faculty of Management, Humanities and Social Sciences
	Prof.(Dr.)Sajan George	Dean, Faculty of Fisheries (08.08.2013 to 27-04-2015)
	Prof. (Dr.) K.V. Jayachandran	Dean, Faculty of Fisheries (18.08.2011 to 08-08-2013)
6	Sri. P. Joby George	Finance Officer ( 24-02-2014 to present)
	Dr. M. S. Raju	Finance Officer (08.02.2012 to 24-02-2014)
	Sri. M. J. Prince	Finance Officer (04.08.2011 to 08.02.2012)
	Dr. V. Ambilikumar	Finance Officer (16.03.2011 to 03.08.2011)
7	Dr. K. V. Jayachandran	Director of Research (03.08.2015 to present)
	Dr. N. G. K. Pillai	Director of Research (2011-2014)
8	Dr. Daisy C. Kappen	Director of Extension (i/c) (Present)
	Dr. P. Keshavanath	Director of Extension (2011- 2014)
9	Sri. K. M. Joy	University Engineer ( 1-6-2015 to present)
	Smt. P. Sathi	University Engineer (2011-2014)

## 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.

### The 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 the Senate

#### The Chancellor

Govt of Kerala, Kerala Raj Bhavan  
Thiruvananthapuram

#### The Pro Chancellor

Shri.K.Babu MLA  
Kunnumparambath House,  
Sanskrit College Road, Thripunithura P.O  
Ernakulam

#### The Vice Chancellor

Kerala University of Fisheries and Ocean Studies  
Panangad P.O, Kochi

#### The Pro-Vice Chancellor

Kerala University of Fisheries and Ocean Studies  
Panangad P.O., Kochi

<p>The Secretary to Government Fisheries Department, Govt .of Kerala Govt. Secretariat, Thiruvananthapuram</p>
<p>The Secretary to Government Higher Education Department (or an officer nor below the rank of Jt. Secretary nominated by him) Govt. of Kerala, Govt Secretariat Thiruvananthapuram</p>
<p>The Secretary to Government Finance Department (or an officer nor below the rank of Jt. Secretary nominated by him), Govt. Secretariat Thiruvananthapuram</p>
<p>The Law Secretary Govt. of Kerala (or an officer nor below the rank of Jt. Secretary nominated by him) Govt. Secretariat, Thiruvananthapuram</p>
<p>Director of Fisheries Government of Kerala, Vikas Bhavan Thiruvananthapuram-695033</p>
<p>Prof.(Dr.) K. V. Jayachandran Department of Fishery Biology Kerala University of Fisheries and Ocean Studies, Panangad P.O, Kochi – 682506</p>
<p>Prof.(Dr.) M. S. Raju Department of Commerce and Management, Kerala University of Fisheries and Ocean Studies Panangad P.O, Kochi – 682506</p>
<p>Prof.(Dr.) Sajan George Department of Processing Technology Kerala University of Fisheries and Ocean Studies, Panangad P.O, Kochi – 682506</p>
<p>Prof.(Dr.) Shyama.S Department of Aquaculture Kerala University of Fisheries and Ocean Studies, Panangad P.O, Kochi – 682506</p>
<p>Shri. N. N. Raman Department of Fishery Hydrography, Kerala University of Fisheries and Ocean Studies, Panangad P.O, Kochi – 682506</p>

Dr. K. Padmakumar Director, Centre for Marine Biodiversity, Kerala University Campus, Kariyavattam P.O, Thiruvananthapuram – 695581
Dr. Joslet Mathew Principal, Nirmalagiri College, Koothuparambu, Nirmalagiri.P.O., Kannur-670701
Dr. J. B. Rajan Assistant Professor Kerala Institute of Local Administration Mulankunnathukavu P.O., Thrissur-81
Dr. K. Ambady 9, D, Kowdiar Manor, Jawahar Nagar, Kowdiar P.O Thiruvananthapuram – 03
Shri. S. Shaheer Assistant Section Officer Kerala University of Fisheries and Ocean Studies, Panangad P.O, Kochi – 682506
Shri. T. A. Radhakrishnan Thendankavil House, Thonnurkkara P.O., Chelakkara, Thrissur – 680587
Shri. Ajith M. R. Muthanattu House, Koovakandam P.O., Naliyany, Thodupuzha (Via), Idukki
Shri. T. K. Somanathan Thundiparambil House, Kundannoor , P.O Maradu, Ernakulam – 682304
Adv. Vaheeda U. U.A. Nivas, Kaithakuzhy, Kummalloor P.O., Kollam – 691573
Shri. V. P. Sajeendran MLA Vallothyamala House, Anickad P.O Kottayam
Shri. A. P. Abdullakkutty MLA 'Rose Pot', Pallikkunnu P.O Kannur – 670004
Shri. Roshy Augustine MLA Central Office, Cheruthony Idukki colony P.O, Idukki – 685602

Shri. Mathew Sebastian

Department of Commerce and Management  
Kerala University of Fisheries and Ocean Studies,  
Panangad P.O, Kochi-682506

Dr. Dinesh K.

Asst Professor & Head, Fisheries Research Station,  
Kerala University of Fisheries and Ocean Studies,  
Puduvypu P.O, Ernakulam

Smt. Malika V.

Department of Commerce and Management  
Kerala University of Fisheries and Ocean Studies,  
Panangad P.O, Kochi – 682506

Smt. Alphy Korath

Department of Commerce and Management  
Kerala University of Fisheries and Ocean Studies,  
Panangad P.O, Kochi – 682506

Smt. Leya Joy

M.Sc. (Biological Oceanography & Biodiversity)  
Vadakkethala House  
Punchiri Lane, Thevara, Kochi – 13

Shri. Musthafa

BFSc (2011 Batch)  
Cherrickal House, Thalakkulathur P.O.  
Parambath, Kozhikode

Shri. Anoop Babu M.

BFSc (2012 Batch)  
169, VIII KWA Quarters  
Kadavanthra, Near GCDA, Kochi – 20

Smt. Sahna Don

BFSc (2009 Batch)  
Kanakkassery House  
Ochanthuruthu P.O, Ernakulam – 682508

Smt. Sneha Joseph

MBA  
Kalayil House  
Kulayettikkara, Kanjiramattom P.O., Ernakulam – 682315

Sri. P. J. Cleetus

Assistant Section Officer, Fisheries Research Station  
Kerala University of Fisheries and Ocean Studies  
Puduveypu, Ernakulam – 682 508

## The 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.

As the first Governing Council was constituted during the fag end of March 2012, only one meeting was convened on 28.03.2012 at Thycaud Govt. Guest House during the year 2011-12. 33 meetings of the Governing Council have been conducted so far.

### Members of the Governing Council (2012-2015)

1.	The Vice-Chancellor, KUFOS Prof.(Dr.) B. Madhusoodana Kurup	0484 2703781 (Direct),2700598, 2700964, (Res) 0484 2703944, 2700424 Fax:-91 484 2700337	kurup424@gmail.com, vc@kufos.ac.in
2.	Pro Vice-Chancellor, KUFOS Prof.(Dr.) K Padmakumar	0484 2700596	pvc@kufos.ac.in k.padmakumar@gmail.com
3.	Secretary to Govt. of Kerala, Fisheries Department, Govt. Secretariat, Thiruvananthapuram	0471-2321129 0471-2333115 (Fax)	
4.	The Secretary to Govt. of Kerala Higher Education Department, Govt. Secretariat Thiruvananthapuram	8547497773 (Mobile) Fax – 0471-2332245	Abrahamkm. trlsecretary@gmail.com
5.	The Secretary to Govt. of Kerala Finance Department Govt. Secretariat Thiruvananthapuram	Tel.0471-2518292, 2327586 Fax 0471-2326990	
6.	The Law Secretary to Govt. of Kerala Govt. Secretariat Thiruvananthapuram	Telephone – 0471-2518383 Mobile – 9447762955 Fax-0471-2332955	
7.	The Executive Vice President Kerala State Council for Science and Technology and Environment Sastra Bhavan, Pattom Thiruvananthapuram.	(Mobile – 9446430555) Tel.No. 0471- 2548200, 0471-2540085	mailto@kscste.org

8.	Sri. Dominic Presentation MLA Valiyathayil Sunoro Church Road Elamkulam, Kochi – 20	Tele No. 0484-2310925, 2228137 0471-2512290 (Mobile) – 9846008137 Fax – 0484-2310925	
9.	Sri. Abdurahiman Randathani, MLA Manalumpuram House Variayath, Randathani P.O. Malappuram – 676 510	Tele No. 0494-2610277 (Mobile) 9847110102 0471-2512334	randathanimla@gmail.com
10.	Sri. T.N. Prathapan, MLA Thottungal Talikulam, Thrissur – 680 569	Tele No. 0480-2893600 Fax – 0480-2893227	tnprathapan@tnprathapan.com
11.	Principal Scientist & SIC Mandapam Regional Centre of CMFRI Marine Fisheries P.O., Mandapam Camp Ramanathapuram – 623 520	Tele No. 04573-241443, 241456 Mobile – 9865484215, 9447587283 Fax – 04573-241502	
12.	Adv. K.K. Radhakrishnan Keerthy Padanayarkulangara South Karunagappilly P.O., Kollam 690 518	Mobile - 9847514474	
13.	Dr. V.N. Sanjeevan, Director Centre for Marine Living Resources & Ecology (CMLRE), Kerdriya Bhavan P.O. CSEZ, Kochi – 682 037	Tel No. 0484-2427790, 2427738 Mobile – 9847204052 Fax – 0484-2421888	sanjeevanmoes@gmail.com
14.	Dr. K. M. Mathew KeralaUniversity of Fisheries and Ocean Studies, Panangad.	Mobile - 9497444306	
15.	Mr. N. N. Raman KeralaUniversity of Fisheries and Ocean Studies, Panangad.	Mobile - 9447509484	
16.	Prof. (Dr.) Shyama S. KeralaUniversity of Fisheries and Ocean Studies, Panangad.	Mobile - 9495350319	
17.	Sri. Vakkachan Ambookan Ambookan Hose Puzhayoram, Poyya P.O. (Via) Mala, Thrissur – 680 733	Mobile - 9349016035	
18.	Sri. Anwar Hashim President Sea Food Exporters Association Abad Fisheries Pvt. Ltd. AbadBuilding, Kochi-2	0484-2222500 Fax 0484- 2222333	Anwar1946@gmail.com
19.	Sri. Rahul Krishnan B.F.Sc, (2010 batch) KeralaUniversity of Fisheries and Ocean Studies, Panangad.		

## Major Decisions of the Governing Council

2012	
Decision No.	1 <sup>st</sup> GC meeting held on 28.03.2012
20/2012	Hon'ble Vice Chancellor was authorized to exercise the powers of relevant bodies, when exigent situation comes, subject to the reporting in forthcoming University Governing Council meeting for ratification, till the constitution of such bodies.
22/2012	Decided to start three new PG Courses such as MSc. (Biological Oceanography & Biodiversity), Physical Oceanography & Ocean Modelling, MBA – (Fisheries Management will be one of the specializations) from the next academic year onwards.
26/2012	Decided to start new M.F.Sc. programme in more disciplines of Fisheries as per ICAR guidelines.
28/2012	Uphold the decision of government in shifting 14 employees with posts in various Non-teaching cadres who have given option to KUFOS for meeting immediate requirement of administrative staff.
29/2012	Decided to take all efforts to retain 50 acres of land of Fisheries Station, Puduveypu for starting Schools under Ocean Science & Technology and Ocean Engineering.
30/2012	Decided to entrust the construction works of Academic Block, Swimming Pool and modification works of Aquarium Complex to M/s. KSCADC, Thiruvananthapuram
	2 <sup>nd</sup> GC meeting held on 21.04.2012
35/2012	Standing Committees such as Staff & Establishment, Finance & Purchase, Examination & Students' Welfare, Planning & Development, Works & Infrastructure and Academic & Research were constituted for the smooth functioning of the University.
45/2012	Decided to institute a minimum of one and maximum five fellowships in each School of study. The formula adopted for calculating the eligible fellowship is 10% of the actual number of students admitted. For UG programmes the minimum fellowship is one and maximum is ten.
47/2012	Decided to appoint Controller of Examinations and Finance Officer on deputation basis till these posts are filled up on regular basis in accordance with the provisions of KUFOS Act and Statutes.
49/2012	Decided to allot University play ground for free of cost to Government firms including LSGs for routine programmes. For commercial arranged by other agencies, the security deposit was fixed as Rs. 10,000/-, rent will be Rs. 2,500/- per day. For local clubs and teams, ground will be allotted for Rs. 2,000/- as advance and Rs. 500/- per day rent.
54/2012	Decided to visit a team of KUFOS to Andhra Pradesh for studying the recent developments made in the area of Aquaculture, under the leadership of Hon'ble Pro Vice Chancellor. The team included Sri. T.N. Prathapan, Hon'ble MLA & GC Member, Sri. Anwar Hashim, GC Member and two teachers from the Department of Aquaculture nominated by Hon'ble Vice Chancellor.
	3 <sup>rd</sup> GC meeting held on 05.06.2012
61/2012	Decided to implement Book Banking Scheme to all students and they will be eligible for 50% of the cost of books purchased through the Scheme subject to the maximum of Rs. 300/- per year

63/2012	Decided to revise KUFOS fellowship from Rs. 1,080/- to Rs. 2,500/- per semester in respect of B.F. Sc. Students, and Junior Fellowship of M.F. Sc students revised from Rs. 3,600/- per semester to Rs. 2,000/- per month. Minimum number of Fellowship instituted was one and maximum 10% of actual intake of each school. Five Ph.D. Fellowships were also sanctioned in each School and admission to Ph.D. will be done on the basis of Written Examination and Interview.
69/2012	Decided to install Biometric Readers for implementing Biometric Punching System through M/s. KELTRON.
78/2012	Accepted the recommendations of Standing Committee for Academic & Research for taking up Consultancy Services by KUFOS staff as it can generate income to University. The returns to University should be equal or exceed the salary paid to such staff in absentia following the 50:30:20 pattern of sharing consultancy charges.
79/2012	Accepted the recommendations of Standing Committee for Academic & Research for implementing External Aided Projects.
80/2012	Decided to execute MoU as recommended by Standing Committee for Academic & Research with M/s. Nansen Research Centre, India.
81/2012	Decided to change the name of 'Course Co-ordinators' as 'Academic Consultants' and monthly remuneration is fixed as a maximum of Rs. 50,000/- as per ICAR/UGC guidelines in force.
<b>4<sup>th</sup> GC meeting held on 12.07.2012</b>	
89/2012	Decided to standardize the room rent as per recent Pay Revision orders issued by the Government.
97/2012	Entrusted Hon'ble Vice Chancellor for considering the requests received from various Universities and Research Institutions for approval as KUFOS approved Research Centres.
98/2012	Entrusted Hon'ble Vice Chancellor for taking follow up actions in considering various foreign institutions as Research Centers and Research tie-up
100/2012	Decided to request an amount of Rs. 2 crore from the Government for disbursing terminal benefits including Provident Fund to retired employees.
<b>5<sup>th</sup> GC meeting held on 28.09.2012</b>	
106/2012	Ratified the action of Hon'ble Vice Chancellor in appointing University Engineer on contract basis for one year with a monthly remuneration of Rs. 25,000/-.
107/2012	Decided to sanction Anticipatory Pension to retired staff as per rules in vogue.
119/2012	Decided to appoint 18 Contract Teachers in various subjects as per requirement in accordance with the direction received from Government as per letter No. 10876/B1/2012/F & PD.
121/2012	Constituted Board of Adjudication as per Section 59 of KUFOS Act 5 of 2011.
129/2012	Constituted Grievance Redressal Committee as per Section 58 of KUFOS Act 5 of 2011.
130/2012	Constituted Finance Committee as per Section 64 of KUFOS Act 5 of 2011.

Out of agenda	Decided to constitute Anti Women Harassment Cell in KUFOS as per existing rules.
<b>6<sup>th</sup> GC meeting held on 17.11.2012</b>	
139/2012	Decided to purchase required items for setting up of an exhibition Unit in KUFOS.
140/2012	Accepted the recommendations of Standing Committee for Planning & Development for purchasing furniture required for new PG programmes.
<b>2013</b>	
<b>7<sup>th</sup> GC meeting held on 04.01.2013</b>	
155/2013	Decided to allot 2219.89 sq. feet of the Old Men's Hostel to Kerala Institute of Hydrography and Advanced Studies for starting short term courses on Hydrography as per rules.
160/2013	Implemented SBT Akshaya Credit Scheme to KUFOS employees.
166/2013	Decided to endorse the UGC 2010 Regulations in KUFOS for all establishment matters. Also decided to refer UGC 2010 Regulations / Guidelines to Academic Council for its recommendations to all academic matters including placement. Promotion of faculty members mentioned in Regulations.
167/2013	Decided to appoint a qualified Assistant Engineer (Electrical) on contract basis.
170/2013	Decided to appoint a qualified person as Publication and Public Relations Officer on contract basis with a monthly remuneration of Rs. 20,000/-.
172/2013	Decided to extend the Telephone, Mobile and Newspaper allowances to Pro Vice Chancellor, Registrar, Controller of Examinations and Finance Officer in accordance with the Government Orders.
<b>8<sup>th</sup> GC meeting held on 01.03.2013</b>	
174/2013	Accepted the recommendations of Academic Council regarding revision of fee structure of various courses for 2013 admission onwards.
175/2013	Decided to grant permanency to eligible Casual Labourers
176/2013	MoU with NIO, Goa for Co-operation in Education and Research Programmes accepted.
184/2013	Decided to accept the recommendation of Standing Committee for Works and Infrastructure for constructing Wet Laboratory in the Department of Fisheries Resource Management.
190/2013	Decided to name the "Chair for Socio-Economic Empowerment of Fisher Folk and Archiving Indigenous Knowledge of Fishermen" as "Pandit Karuppan Chair". Also decided to appoint a Professor of Eminence to Head the Chair.
194/2013	Decided to accept the Panel of Experts prepared for the selection of Assistant Professors on contract basis.
195/2013	Decided to start 8 more new PG programmes in the Academic Year 2013 – 14 as per the recommendation of Academic Council.
197/2013	Decided unanimously to ask Government to return the 20 acres of land already acquired for LNG Power Plant at Puduveypu Campus.

<b>9<sup>th</sup> GC meeting held on 25.03.2013</b>	
208/2013	Approved the Budget Estimate for the year 2013 – 14.
209/2013	Ratified the action in having taken urgent steps for making the Public Aquarium Complex open to public.
211/2013	Agreed to entrust the construction work of Academic Block Phase II with M/s. KSCADC at a total cost of Rs. 3.50 crore
212/2013	Accepted the recommendation of Standing Committee for Works & Infrastructure in entrusting the construction work of Canteen in KUFOS Headquarters, Panangad and the work was awarded to M/s. BSNL.
<b>10<sup>th</sup> GC meeting held on 14.05.2013</b>	
222/2013	Decided to implement Leave Travel Concession benefit to all staff members as per the terms and conditions stipulated in G.O.(P) No. 5/2013/Fin. dated 02.012013
<b>11<sup>th</sup> GC meeting held on 29.06.2013</b>	
246/2013	Approved the proposal for software development and implementation of Office Automation submitted by M/s. National Informatics Centre.
250/2013	Approved the Annual Accounts for the year 2011 – 12.
251/2013	Ratified the proposal submitted to Government for creation of Teaching and Non-teaching posts.
255/2013	Decided to appoint 20 Assistant Professors on contract basis for newly started courses in accordance with UGC Regulations 2010.
258/2013	Decided to purchase MATHLAB Software for M.Sc. Physical Oceanography & Ocean Modelling.
271/2013	Decided to appoint Dr. K.S. Purushan, Prof. (Retd.) as Professor of Eminence for the Chair for Socio-Economic Empowerment of Fisher Folk and Archiving Indigenous Knowledge, for one year.
<b>12<sup>th</sup> GC meeting held on 02.08.2013</b>	
283/2013	Decided to submit a proposal to Ho'ble Minister for Fisheries and Ports requesting to initiate discussion with Tourism Department for constructing a Guest House abd Coffee Shop at KUFOS Headquarters, Panangad and also decided to allot 50 cents of land for the purpose as per rules and conditions mutually acceptable.
<b>13<sup>th</sup> GC meeting held on 09.09.2013</b>	
290/2013	Decided to enhance the retirement age of Non-teaching staff of KUFOS from 55 to 56 based on G.O.(P) No. 170/12/Fin. date 22.032012.
310/2013	Decided to conduct the First Convocation of KUFOS in a befitting manner.
313/2013	Approved the Annual Accounts for the year 2012- 13.
314/2013	Approved the proposal for setting up of Smart Class Rooms for School of Management and Entrepreneurship and School of Ocean Science and Technology utilizing ICAR Development Grant.
316/2013	Decided to appoint a Computer Engineer on contract basis

	<b>14<sup>th</sup> GC meeting held on 18.10.2013</b>
	Cancelled for want of quorum
	<b>15<sup>th</sup> GC meeting held on 06.12.2013</b>
320/2013	Decided to engage labourers on contract basis for farm / pond works in KUFOS Headquarters.
328/2013	Members expressed their concern and understood the gravity of present situation, i.e., sanctioning of fund for disbursing pensionary benefits to retired employees and passed a Resolution on the matter. It was also decided to convey the message officially to Secretaries and Ministers for Fisheries and Agricultural Departments.
331/2013	Decided to appoint Registrar and Finance Officer on regular basis in accordance with the provisions contained in KUFOS Act and First Statutes.
Outside agenda -1	Decided to entrust additional charge of Director of Research to the Pro Vice Chancellor
Outside agenda -2	Decided to sanction 25 lakhs as advance to Finance Officer for the conduct of Regional Workshop from Member Countries of Indian Ocean RIM Association regional co-operation and the amount will be recouped as and when Ministry of External Affairs releases fund.
<b>2014</b>	
	<b>16<sup>th</sup> GC meeting held on 04.01.2014</b>
343/2014	Approve the proposal for setting up of a laboratory for the Department of Food Science and Technology
345/2014	Reconstituted Grievance Redressal Committee after conducting election from among Senate members
	<b>17<sup>th</sup> GC meeting held on 17.02.2014</b>
352/2014	Accepted the recommendation of Standing Committee for Works and Infrastructure in constructing Compound Wall at Fisheries Station, Puduveypu and the work was awarded to M/s. BSNL
355/2014	Approved the plan submitted by M/s. BSNL for construction of Research Complex at KUFOS Headquarters and entrusted the work to M/s. BSNL at the estimated cost of Rs. 155 lakhs.
358/2014	Accepted the recommendation of Standing Committee for Works and Infrastructure for setting up of a Work Station in Finance / Administration Office / Examination Cell and the work was awarded to M/s. SIDCO, at an estimated amount of Rs. 15,53,276/-
359/2014	Approved the estimate amounting to Rs. 50 lakhs for the construction of Compound Wall Phase II at Fisheries Station, Puduveypu and awarded the work to M/s. FIT, Aluva.
360/2014	Accepted the recommendation of Standing Committee for Works and Infrastructure for constructing PG Hostel for Ladies and work entrust with M/s. BSNL.
366/2014	Decided to create 18 Departments under various Schools as stipulated in the First Statute and also approved the list of Heads of Departments.

	<b>18<sup>th</sup> GC meeting held on 31.03.2014</b>
371/2014	Approved the Budget Estimate for the year 2014 - 15.
373/2014	Decided to take necessary steps for the appointment of Directors of Schools as stipulated in Section 70 of Chapter VII of First Statute of KUFOS
380/2014	Accepted the recommendations of Standing Committee for Staff and Establishment and decided to initiate action for the recruitment of faculty members on permanent basis as per rules laid down in KUFOS Statutes duly observing UGC Regulations 2010.
381/2014	Accepted the proposal submitted by M/s. KELTRON for Video Conferencing with an estimate of Rs. 27,40,511/-.
387/2014	Proposal submitted by M/s. KELTRON for installing surveillance camera system with an estimate of Rs. 18,65,615/- was accepted.
	<b>19<sup>th</sup> GC meeting held on 07.06.2014</b>
389/2014	Decided to appoint Dr. K.R. Muraleedharan Nair, 49/1180 A, Nandanam, Panikkara Road, Edappally as Controller of Examinations on contract basis for a period of six months with a remuneration of Rs. 50,000/- per month
391/2014	Decided to incorporate ICAR Model Act in KUFOS Act 5 of 2011 and Statutes and the matter will be taken up with Government of Kerala for amendment of KUFOS Act and Statutes.
393/2014	Decided to implement 'Jan Arogya Bhima Policy' to all students of KUFOS.
398/2014	Decided to permit M/s. Kerala Football Association for developing KUFOS ground as an International Stadium together with providing ancillary facilities.
403/2014	Approved the construction of Guest House alongwith a Restaurant with the help of Tourism Department, Govt. of Kerala and required land of 50 cent will be allotted to Tourism Department for the construction.
408/2014	Decided to recruit Director of Research and Director of Extension in accordance with the provisions contained in KUFOS First Statutes.
409/2014	Decided to contribute Rs. 10.00 lakh towards the conduct of First World Ocean Science Congress & Expo – 2015.
410/2014	Approve the estimate and plan of Guest House and Compound Wall at a total cost of Rs. 75,60,000/- at Thiruvallom Campus and entrusted the work to M/s. BSNL.
	<b>20<sup>th</sup> GC meeting held on 25.07.2014</b>
425/2014	Decided to issue notification for appointment of regular faculty members as KUFOS is facing acute shortage of faculty for the ongoing and new courses in KUFOS. It is also decided to follow communal reservation as opined by the Standing Counsel.
433/2014	Decided to issue notification for appointing Controller of Examinations, University Engineer and University Librarian duly following the prescriptions stipulated in First Statute of KUFOS.
436/2014	Ratified the action of Hon'ble Vice Chancellor in having constituted Board of Studies of 14 Departments.

<b>21<sup>st</sup> GC meeting held on 30.08.2014</b>	
444/2014	Approved the norms for the appointment of Casual Labourers and decided to fill the vacant post of Casual Labourers (15 Nos. at KUFOS Headquarters and 7 Nos. at Fisheries Station, Puduveyypu) after conducting Screening Test and Work Proficiency Tests.
455/2014	Decided to implement Office Automation in KUFOS through National Informatics Centre and also decided to transfer the fund earmarked for the same to NIC.
456/2014	Decided to endorse the G.O.(MS) No. 36/2007/SCSTDD dated 19.07.2014 and its amendments issued from time to time regarding granting of exemption from payment of fee to students belonging to the category of OEC.
457/2014	Decided to endorse G.O.(MS)No. 10/2014/SCSTDD dated 23.05.2014 granting exemption from payment of fees to OBC students.
461/2014	Approved the proposal for construction of Academic Block Phase IV at a total cost of Rs. 5 crore and entrusted the work with M/s. KSCADC.
462/2014	Approved the plan and estimate submitted by M/s. BSNL for construction of Arch Gate at KUFOS Headquarters, Panangad and decided to entrust the work with M/s. BSNL.
464/2014	Decided to entrust the construction work of PG Hostel for men with M/s. BSNL.
465/2014	Approved the estimate and plan of Two Schools at Puduveyypu Campus and entrusted the work with M/s. BSNL.
<b>22<sup>nd</sup> GC meeting held on 10.10.2014</b>	
481/2014	Decided to submit a proposal to Government for making necessary amendments to First Statute of KUFOS for making a provision for filling 50% of the posts of Class IV and pump Operators from among qualified Permanent Labourers.
482/2014	Approved the Panel of Experts for selection of Professor, Associate Professor and Assistant Professor.
<b>23<sup>rd</sup> GC meeting held on 06.12.2014</b>	
486/2014	Decided to endorse G.O.(P)No. 466/2014/Fin. dated 28.10.2014 regarding enhancement of daily wage rates to employees on daily wage basis.
496/2014	Decided to participate in 'Global Forum for Innovations in Agriculture' (GFIA 2015) to be held from 09.03.2105 to 11.03.2015 at Abu Dhabi, UAE through the research and Collaboration Pavilion by paying US \$ 1,908 and also decided to depute one more person from KUFOS.
498/2014	Decided to cancel the works viz., Construction of Seminar Complex, Physical Amenity Centre, Residential Flat awarded to M/s. HLL Life Care Limited as the firm has not responded to any of the communications sent regarding the construction of the above works. Also decided to entrust the above works with M/s. BSNL.
<b>2015</b>	
<b>24<sup>th</sup> GC meeting held on 17.01.2015</b>	
505/2015	Ratified the action of Hon'ble Vice Chancellor in having included the additional list of Panel of Experts among the Panel of Experts already approved.

506/2015	Accepted the proposal for installing Passenger Lift in the Administrative Building of KUFOS Headquarters, Panangad at a total cost of Rs. 26.40 lakhs and lift cabin for Rs. 14 lakhs and the work will be carried out by inviting competitive tenders.
507/2015	Decided to approve the proposal for dredging of ponds and feeder canal, additional depth for reservoir pond, construction of sluice gate, cage for fish culture, crab fencing, purchase of pum set, construction of pump room and pitching works at Fisheries Station, Puduveypu, at a cost not exceeding Rs. 21,62,000/- (Rupees Twenty one lakh and sixty two thousand only) is accepted. The expenditure on this account will be met from KUFOS Aided Research Projects for 2014-15 and from Research Component provided for farming Vannamei for the year 2014-15.
<b>25<sup>th</sup> GC meeting held on 02.03.2015</b>	
518/2015	Decided to accept the MoU between KUFOS and CIFT, Kochi. It was also decided to collaborate with CIFT and other Central / State Government Institutions such as CMFRI, NIO Cochin, NIFPHATT, CIFNET, CMLRE, FSI Cochin NCESS etc. in academic matters. It was also decided to waive annual registration fee of Rs. One Lakh as decided in meeting held on 02/03/2015 by availing facilities by KUFOS from the above institutions as decided in the meeting, which shall be governed by an MoU
523/2015	Approved the Annual Accounts for the year 2013 – 14
525/2015	Decided to endorse the G.O.(MS) No.47/14/Fis. & Ports dated 09.06.2014 regarding Educational concession to the Children of Fishermen.
<b>26<sup>th</sup> GC meeting held on 21.03.2015</b>	
	The 26 <sup>th</sup> Governing Council was scheduled on 21.03.2015 at 10.30 am at KUFOS Headquarters, Panangad. Eight members were present on the day. Due to lack of prescribed quorum, the meeting was postponed to 30.03.2015 at 10.30 am at the same venue.
<b>27<sup>th</sup> GC meeting held on 30.03.2015</b>	
527/2015	Approved the Budget Estimate for the year 2015 – 16.
532/2015	Decided to commence 8 PG courses during the Academic Year 2015 – 16.
533/2015	Approved the Estimate and Plan of (i) Construction of Physical Amenity Centre (Rs. 1,15,78,000), Residential Flat (Rs. 96,42,000), PG Hostel for Men (Rs. 2,66,49,700), Seminar Complex (Rs. 4,79,45,000) and Compound Wall at the Eastern and Western Campus (Rs. 4,79,45,000) and the above works entrust with M/s. BSNL.
535/2015	Decided to execute MoU between KUFOS and Manappuram Financiers Limited regarding scholarship to the students of MBA – Fisheries Management Programme.
538/2015	Decided to amend the First Statute of KUFOS for assigning more powers to Senate and constituted a Committee comprising the Registrar, Adv. K.K. Radhakrishnan, Dr. VN. Sanjeevan, Secretary to Govt. Law Department and Pro Vice Chancellor as Convenor.

<b>28<sup>th</sup> GC meeting held on 07.04.2015</b>	
540/2015	<p>Resolved to depute the following GC members to examine the API score assigned in the selection process with reference to the apprehensions of the GC in this connection. Competent authority and associate committees from KUFOS shall give clarifications with regard to selection process of faculty members whenever necessary on demand. The following GC members are deputed for verification of the API score in the selection process of Assistant Professors, Associate Professors and Professor.</p> <p>Sri. Dominic Presentation, Hon'ble MLA or his nominee from Governing Council</p> <p>Sri. T.N. Prathapan, Hon'ble MLA or his nominee from Governing Council</p> <p>Dr. V.N. Sanjeevan</p> <p>Adv. K.K. Radhakrishnan</p> <p>Dr. S. Shyama, Assoc. Prof.</p> <p>The committee on completion of the above examination shall report to the Governing Council within a period of two weeks and decided to convey this decision to the Hon'ble High Court of Kerala.</p>
<b>29<sup>th</sup> GC meeting held on 02.05.2015</b>	
542/2015	Decided to reconstitute the GC committee by excluding Dr. S. Shyama, Assoc. Prof. as there is an irregularity in the inclusion of Dr. S. Shyama, Assoc. Prof. in the Sub-committee as she was a candidate for the post of Professor in Aquaculture. The newly constituted GC committee will submit the report before 15.05.2015 and the same will be discussed in the GC meeting scheduled on 15/05/2015.
547/2015	Decided to implement the G.O.(M.S) No. 15/2015/F&PD Dtd.10.04.2015 in KUFOS. Out of the two newly created posts of Deputy Registrar, one post will be filled by promoting the existing Asst. Registrar and senior most Section Officer will be promoted as Assistant Registrar against the vacant post of one Deputy Registrar. Eligible Section Officers will be promoted to the newly created posts of Assistant Registrar as per seniority among Section Officers. It was also decided to grant consequent promotions to other eligible categories against the vacancies occurred due to promotion.
548/2015	Decided to outsource the Security Officer as per the concurrence received from Government
553/2015	Decided to fill one post of Professor and two posts of Assoc. Prof. against the sanctioned posts in the School of Aquatic Food Products and Technology strictly observing UGC Regulations in force and Notification will be invited accordingly. The charges of Director, School of Aquatic Food Products and Technology and Dean (Fisheries) will be entrusted with Dr. K. Gopakumar, Prof. of Eminence for two months. It was also decided to request Dr. Sajan George, Professor (Retd.) to continue for two more months in the School of Aquatic Food Products and Technology, if he agrees.
554/2015	Decided to endorse NAAS Fellowship in selection process of scientists in KUFOS
555/2015	Decided to endorse the G.O.(MS) No.571/2013/(180)/Fin dtd.21.11.13 in KUFOS regarding the revision of Scales of pay of Assistant Registrar, Assistant Registrar (Hr.Gr.), Deputy Registrar and Joint Registrar, with full benefits as prescribed

<b>30<sup>th</sup> GC meeting held on 18.05.2015</b>	
	<p>The 30<sup>th</sup> University Governing Council meeting is scheduled to be conducted on 18.05.2015. Owing to lack of quorum as prescribed in Section 74, Chapter II of First statute of KUFOS, the meeting was rescheduled to be conducted on 21.05.2015.</p> <p>Before disbursing the meeting the Chairman and Governing Council members of Kerala University of Fisheries and Ocean Studies, Panangad expressed deepest condolences on the sad demise of Smt. Kalikutty Narayanan (94 years), mother of Shri. T.N. Prathapan, MLA.</p>
<b>31<sup>st</sup> GC meeting held on 21.05.2015</b>	
557/2015	Governing Council accepted the report submitted by Hon'ble Vice Chancellor and decided to open rank lists of faculty members in various departments and decided to appoint eligible ranked candidates observing communal rotation as per the legal opinion received on the matter. It was also decided to grant 10 points in the API score sheet to those candidates having M.F.Sc. degree while applying for teaching posts in future recruitments.
566/2015	Authorized Sri. Dominic Presentaion, Hon'ble MLA & GC Member and Hon'ble Vice Chancellor, KUFOS regarding the Training Site Agreement between KUFOS and FIFA in connection with Under 17 World Cup 2017 to discuss the matter and do the needful in executing the MoU.
<b>32<sup>nd</sup> GC meeting held on 17.07.2015</b>	
575/2015	Ratified the action in having constituted Governing Council Committee for scrutinizing the applications received for the post of Director of Research, Director of Extension and Director of Schools and for preparing a list of eligible candidates.
582/2015	Approve Sree Narayana Gurukulam College of Engg. be recognised as an approved Research Centre of KUFOS.
584/2015	Decided to approve the proposal for granting Financial autonomy to the extent as stipulated above is delegated with the Directors of Schools. The Directors of Schools will open separate SB Accounts for the purpose and an amount of Rs. One lakh each will be released and credited to the SB Accounts of each Directors of Schools.
589/2015	Decided to accept the proposal submitted by M/s Omega Elevators for the supply and installation of one passenger lift in Administrative block at main campus at the negotiated rate of Rs.19,50,000/- (Rupees Nineteen lakh and fifty thousand only). The expenditure will be met from the internal revenue and later rebook to ICAR Development Grant.
591/2015	University Governing Council decided to appoint Dr. K.V. Jayachandran, Prof., as the Director of Research and also decided to appoint Dr. M.S. Raju, Prof., as the Director, School of Management & Entrepreneurship.
598/2105	Decided to approve the proposal of installation of 2 <sup>nd</sup> phase of CCTV at KUFOS western campus, at a total cost not exceeding Rs. 35,00,000/- (Rupees Thirty five lakhs only)
602/2105	Accepted the proposal for construction of Guest House at KUFOS Hedaquarters, Pananagd by Department of Tourism. It was also decided to convey the same to Department of Tourism.

### 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

	Name	Phone
The Vice Chancellor, Chairperson	Prof.(Dr.) B. Madhusoodana Kurup	0484 2703781 (Direct), (Res) 0484 2703944, 2700424 Fax:-91 484 2700337
Director of Fisheries, Govt. of Kerala		0471-2303160 0471-2304355(Fax)
Director of Central Marine Fisheries Research Institute		0484-2394798
Director of Central Institute of Fisheries Technology		0484-2666880
Director of Centre for Marine Living Resources and Ecosystem		0484-2427790
Director of National Institute of Oceanography		0484-2390814
Director of School of Fisheries Resource Mgt.& Harvest Technology	Dr. K.V. Jayachandran,	09446493765
Director of School of Aquatic Food Products & Technology	Dr Sajan George	09847872261
Director of School of Mgt. & Entrepreneurship	Dr. M.S. Raju	0484-2700598(Extn)30
Director of School of Aquaculture & Biotechnology	Dr. S. Shyama,	9495350319
Director of School of Fishery Environment	Sri. N.N. Raman	09447509484
Faculty member from Local Administration Centres/ Regional Centres	Dr. K. Dinesh Asst. Professor & Head, Fisheries Station,Puduvypu	9446032977
Post graduate students	Kum.Sandhya K.S. (M.F.Sc Student, 2011 batch)	
	Sri. Naukum Alpeshbhai Jadavbhai	

Decision No.	1 <sup>st</sup> meeting held on 08.08.2012
01/12	The Academic Council of KUFOS ratified the action taken by Hon. Vice-Chancellor and Governing Council of KUFOS and accorded sanction for starting five different P.G. Programmes in the Academic Year 2012-13. Courses started are (i) M.F.Sc. - Fish Nutrition and Feed Technology, (ii) M.F.Sc. - Fisheries Economics (iii) M.B.A, (iv) M.Sc. - Physical Oceanography & Ocean Modeling and (v) M.Sc. - Biological Oceanography & Biodiversity
03/12	<p>A sub committee with the following members has been constituted for framing Ph.D. regulations.</p> <ol style="list-style-type: none"> <li>1. Dr. K.V. Jayachandran, Dean, KUFOS ( Convenor)</li> <li>2. Dr. Sajan George, Professor, KUFOS</li> <li>3. Dr. M.S. Raju, Professor,KUFOS</li> <li>4. Dr. M.R. Boopendranath, CIFT</li> <li>5. Dr. V.N. Sanjeevan, Director, CMLRE</li> </ol>
04/12	<p>A Sub Committee has been constituted for framing academic regulations</p> <ol style="list-style-type: none"> <li>1. Dr. M.S. Raju, Professor, KUFOS (Convenor)</li> <li>2. Sri. N.N. Raman, Assoc. Professor, KUFOS</li> <li>3. Director / Addl. Directors Fisheries</li> <li>4. Dr. K.V. Jayachandran, Dean, KUFOS</li> <li>5. Kum. Sandhya K.S., Student's Representative</li> </ol>
07/12	Academic Council ratified all actions taken by Hon. Vice-Chancellor and Governing Council in connection with academic matters in the ambit of the Act of KUFOS and Statute of KAU.
2 <sup>nd</sup> meeting held on 03.11.2012	
09/2012	<p>First semester syllabus for MBA programme was approved with the following modifications.</p> <ol style="list-style-type: none"> <li>1. The title of the paper 516 will be changed into Fisheries Resource Management instead of Fisheries Management. Also decided to modify the content incorporating recent advances in this area.</li> <li>2. Instead of 516, paper 502 ie., Industrial and Labour Laws will be Also decided to included in First Semester as a core paper.</li> <li>3. Also decided to modify the content of paper 515 ie. Quantitative Techniques for Managers by including two units on computer applications without reducing the contents of statistics portions.</li> <li>4. Follow the common course coding system as decided by the committee constituted for the same.</li> </ol>
10/2012	The first semester syllabus for M.Sc. Physical Oceanography and Ocean Modelling is approved without any change
11/2012	To Consider approval of Syllabus for starting M.Sc. Degree programme in Biological Oceanography and Biodiversity.
12/2012	The syllabus for M.F.Sc. programme in Fish Nutrition and Feed Technology is approved without any change (ICAR approved syllabus)

<b>3<sup>rd</sup> meeting held on 02.01.2013</b>	
20/2012	Recommended to revise fee structure of all, UG, PG and Ph.D. courses offering from KUFOS
23/2012	The proposal for starting 8 PG Courses such as M.F.Sc. Aquatic Animal Health Management, M.F.Sc. Fisheries Engineering and Technology, M.Sc. in Applied Geo Science, LLM in Maritime Law, M.Sc. Remote Sensing, GIS & Satellite Oceanography, M.Sc. Business Statistics, M.Sc. Food Science & Technology and M.Tech. Integrated Coastal Zone Management for the academic year 2013 – 14 was approved and authorized Hon'ble Vice Chancellor to constitute various committees for preparing draft syllabi and Academic Regulations.
<b>4<sup>th</sup> meeting held on 19.04.2013</b>	
31/2013	Decided to establish 'Chair for Socio Economic Empowerment of Fishery folk and Archiving Indigenous Knowledge' and approved qualification for the post of Professor of Eminence for the Chair.
36/2013	Approved the syllabus of two courses proposed from Fisheries Station, Puduveyypu.
41/2013	Approved the eligibility for admission, number of seats, course fee etc., of various PG and Diploma programmes proposed to be started during the academic year 2013 – 14.
<b>5<sup>th</sup> meeting held on 13.05.2013</b>	
44/2013	Approved the guidelines for recognizing other institutions as approved Research Centres of KUFOS.
<b>6<sup>th</sup> meeting held on 25.06.2013</b>	
49/2013	Approved the revised syllabus of M.Sc. Physical oceanography & Ocean Modelling
52/2013	Approved Ph.D Regulations
53/2013	Endorsed UGC regulations 2010
<b>7<sup>th</sup> meeting held on 29.11.2013</b>	
59/2013	Decided, subject to approval of Governing Council to reserve one seat of B.F.Sc. Course for eligible children of Permanent Labourers of KUFOS. If no eligible candidates are available, it will be kept open for eligible children of employees of KUFOS. If no candidates are available from the above two categories, it will be filled through Open quota.
60/2013	Approved mutual shifting of the course MBAC 25 to 1 <sup>st</sup> semester and MBAC 517 to 2 <sup>nd</sup> semester.
62/2013	Decided to change the title of course M.F.Sc. (F. Hydrography) as M.F.Sc.(Aquatic Environment Management).
63/2013	Approved the Academic Regulation of Diploma Course offering from Fisheries Station, Puduveyypu.
64/2013	Approved the Academic Regulations of PG Courses.
65/2013	Constituted a Committee for granting Grace Mark to differentially abled students.

69/2013	Decided to start Fellowship @ Rs. 8,000/- per month to eligible Ph. D. students as decided in Governing Council. Each School will have five Fellowships.
74/2013	Decided to appoint Sri. Santhosh Kurup as Adjunct Faculty for conducting Training / Orientation Programmes to all graduate and post graduate students of KUFOS.
<b>8<sup>th</sup> meeting held on 20.06.2014</b>	
76/2014	Decided to approve the format of M.F.Sc. Grade card/Transcript and the same will be condensed to single sheet and the guidelines and footnote will be in single line.
79/2014	Decided to start a PG Diploma course in Water /Atmosphere, environment Pollution as per the direction of State Government. Sri. N.N. Raman, Director i/c. School of Fishery Hydrography is identified as the Nodal Officer for preparing the syllabus
83/2014	The Syllabus of the following courses to be started during the current year 2014-15 were approved <ol style="list-style-type: none"> <li>1. M.Tech in Integrated Coastal Zone Management</li> <li>2. MSc in Marine Microbiology and Marine Drugs</li> <li>3. MSc in Climate Science &amp; Marine Drugs</li> </ol>
89/2014	Ratified the action in having revised and refixed the fee structure of various courses such as Diploma, UG, PG, & Ph.D. and it was also decided to maintain this fee structure for the next three years.
<b>9<sup>th</sup> meeting held on 16.01.2015</b>	
92/2015	Decided to approve PBAS Score format for Career Advancement Scheme. It was also decided to include NAAS also. Awards / recognitions / fellowships will be added against item No. III E (iv).
93/2015	Approved the score sheet for recruitment of permanent faculty members in KUFOS.
94/2015	Decided to adopt malpractice rules now following in CUSAT. Clause 27 in the regulations modified accordingly. It was also decided to include electronic communication devices to contain malpractices.
95/2015	Ratified the action of Hon'ble Vice Chancellor in having revised the rate of remuneration payable to various functionaries with retrospective effect from 25.07.2014. Remuneration for external Chairman for UG/PG is fixed at Rs. 1,000/-
96/2015	Ratified the action of Hon'ble Vice Chancellor in having modified the fee structure of various courses for the year 2014 – 15.
98/2015	Decided to allot 15% seats for UG and 25% seats for PG and Ph.D. programmes allotted through ICAR All India Entrance Examination. If ICAR candidates are not available, admission will be provided as per KUFOS norms. It was decided to draft a letter to ICAR informing the above matter
99/2015	Decided to grant grace marks to differently abled students of KUFOS @25% on the mark they have scored in each paper. The grace mark sanctioned will not be counted for rank and the upper limit after sanctioning grace mark is fixed as 90%. Entrusted Hon'ble Vice Chancellor in effecting further changes if any

101/2015	Approved the revised curricula of M.Sc. (Food Science & Technology) and revised syllabus of M.Sc. Marine Microbiology & Marine Drugs and M.Sc. Climate Science. Credit shall be regulated to 18 hrs on credit as per UGC regulations. Changes and comments if any will be incorporated within two weeks.
102/2015	Ratified the action of Hon'ble Vice Chancellor in redesignating the name of posts vide order No.GA5 -2339 /IX dated 12.5.2014 in connection with selection of teaching staff on permanent basis in various disciplines.
103/2015	Ratified the action of Hon'ble Vice Chancellor in having corrected the name of Department vide order No. GA5/2339/14 dated 22.8.2014 in connection with selection of teaching staff on permanent basis in various disciplines.
104/2015	Approved the minutes of the meeting held on 08.01.2015 regarding the setting up of incubation centre/entrepreneurship development/start up villages.
108/2015	Decided to approve the Regulations for improvement of Internal marks for all PG Programmes except MFSc. Programmes
109/2015	Decided to rename the course title of M.Sc. (Applied Statistics) to M.Sc. (Statistics) and approved the revised syllabus of the course MSTC III: Statistical Methods
110/2015	Decided to issue Rank Certificate and the same will be given as I, II and III
111/2015	Decided to modify PG Regulations to the effect that "before closing the admission procedure admission fee will be retained and all other fees will be released. No kind of fee will be released after commencement of classes."
112/2015	Decided to commence 12 Nos. of new courses viz., M.Sc Applied Marine Chemistry, MBA in energy Management, Starting of Entrepreneurship as Massive Online Course, B.Tech in Marine Safety Engineering, M.Tech in Fisheries Engineering, M.Tech in Underwater Acoustics, M.Tech in Petroleum Engineering, M.Tech in Coastal and offshore Engineering, M.Tech in Coastal Harbour Engineering, M.Tech in Ocean Coastal Safety, Conversion of on-going fulltime LLM course as evening course and PG Diploma in Law during the Academic Year 2015 – 16.
113/2015	Approved the modified Syllabus of M.F.Sc. & Ph. D. programme in Aquaculture, M.F.Sc. & Ph. D. programme Fish Nutrition & Feed Technology and M. Tech. Coastal Zone Management. 3 credits for viva voce in MBA & LLM will be deleted.
<b>10<sup>th</sup> meeting held on 18.06.2015</b>	
114/2015	Decision on item No. 113/2015 is modified as "Approved the modified syllabus of M.F.Sc. & Ph.D. programme in Aquaculture and M.F.Sc. & Ph.D. programme in Fish Nutrition & Feed Technology. 3 credits for viva voce in MBA & LLM will be deleted. Also approved the minutes of Board of Studies in respect of Departments of Integrated Coastal Zone Management, Business Administration & Management and Legal Studies."
115/2015	Decided to issue transcript of all PG courses to PG students and the rate of transcript is fixed as Rs. 2,000/- per each.
116/2015	The criteria for applying for various Post Graduate courses of KUFOS is modified as the percentage of the aggregate of marks scored in the last but one semester examination of the qualifying degree examination of the students, from 2015-16 onwards.

117/2015	The following modifications in the academic regulations of B.F.Sc programme of KUFOS were effected. They are, (1) the conduct of examinations shall be vested with the Department as is done for other courses (2) Arrangements shall be made by the examination section for setting question papers and evaluation of answer books (external) and (3) the results shall be finalized in a passing board with three members consisting of the Director (Chairman) and two faculty members of which one shall be internal and the other external. The members of the passing board shall be nominated by the Controller of Examinations. The results shall be published within one week after the passing board meeting is over.
118/2015	Decided to implement double valuation in M.F.Sc. programmes with one internal examiner and one external examiner and out of the total marks, 50% marks each will be allotted to both internal and external examinations w.e.f. 2015 – 16 (admission) onwards. A student shall be permitted to discontinue his/her Diploma/Under graduate/Postgraduate/ Ph. D. programme permanently on valid grounds by the Head of the Institution on recommendation of the concerned Director of School and shall be intimated to the Registrar. In such cases, the student has to remit full tuition fee to KUFOS in lump.
119/2015	Decided to effect the following modifications in the academic regulations for Ph.D. programmes of KUFOS : - Open defence will be conducted in University level rather than in Department level. Ph.D. will be awarded after completion of the following: (1) After the approval of Advisory Committee, (2) synopsis presented at School level by inviting students faculty from other schools and from sister institutions in and around Cochin (3) Adjudication process will be by selecting three experts selected by Hon'ble Vice Chancellor from a panel of 10 (ten) experts out of which five experts shall be from out of state and shall be above the rank of Associate Professor (4) Thesis valuation will be done by three subject experts. Once valuation reports were received from three examiners, Vice Chancellor will constituted a board of conduct viva voce and to conduct open defence at University level. The candidates shall completed all the above procedure for fulfilling the requirement of Ph.D award.
120/2015	Decided to redeploy the excess vacant posts of faculty members to other Department / Schools as per the proposal placed before the Council. Also decided to approve the qualifications as prescribed by UGC (1) for science (2) MBA (3) Engineering. Also approved the procedure stipulating for selection, screening, screening committee, qualification fixation etc.
121/2015	Ratified the action in having re-designated the post as Assistant Professor (Fish Nutrition) against the existing vacancy of Assistant Professor (Biochemistry) and in re-designating the post of Assistant Professor as Fisheries instead of Fisheries Oceanography.
<b>11<sup>th</sup> meeting held on 24.08.2015</b>	
132/2015	Approved the syllabus of MBA in energy management. It was also decided to incorporate all four year programme in UG viz B.F.Sc, B.Sc. ( Agri), B.V.Sc etc. as intake qualification from 2015-16 admission onwards
135/2015	Approved the syllabi of M.Tech , Harbour Engineering & OCSE

137/2015	Ratified the action of Hon'ble Vice Chancellor in having redesignated one post each of Bioinformatics in Department of Biotechnology & Bioinformatics and Food Engineering in Department of Food Science and Technology as Assistant Professor in Marine Biodiversity and Assistant Professor in Marine Ecology.
138/2015	Academic Council approved the syllabus of M.Tech. in Fisheries Engineering
140/2015	Decided to approve the curriculum and syllabus in respect of M.Sc. (Marine Chemistry) Programme and the course should be in UGC stream
143/2015	Decided to accept the proposal regarding Master's degree in relevant subjects as per the UGC regulations 2010 in respect of various faculty positions propose to be recruited.



**Prof. (Dr.) K. V. Jayachandran**  
Dean (18.08.2011 to 08.08.2013)



**Prof. (Dr.) Sajan George**  
Dean (08.08.2013 to 27.04.2015)



**Dr. K. Gopakumar**  
Professor of Eminence, KUFOS,  
Former DDG, ICAR  
**Dean of the Faculty**

## 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

1. Dean - Dr. K. Gopakumar, DDG (Fisheries) Rtd., ICAR, Professor of Eminence, KUFOS
2. Chairperson of Board of Studies of Aquaculture and Biotechnology - Member
3. Chairperson of Board of Studies in Aquaculture Nutrition and Feed Technology - Member
4. Chairperson of Board of Studies in Aquatic Animal Health Management - Member
5. Chairperson of Board of Studies in Fisheries Resource Management - Member
6. Chairperson of Board of Studies in Fishery Hydrography - Member
7. Chairperson of Board of Studies in Preservation & Packing Technology - Member
8. Dr. S. Suresh Kumar, Professor, Fishery Hydrography, KUFOS (Board of Studies Nutrition and Feed Technology) - Member
9. Dr. A. A. 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, Professor, Dept. of Meteorology, CUSAT, Kochi (Board of Studies: Fishery Hydrography) - Member
12. Dr. T. V. Sankar, Head of Division, CIFT, Kochi (Board of Studies; Preservation and Packing Technology) - Member
13. Dr. Shivananda Murthy, Professor and Head, Dept. of Aquaculture, College of Fisheries, Mangalore - Member



**Dr. N. Chandrasekar**  
Professor, M S University  
**Dean of the Faculty**

## II Faculty of Ocean Science and Technology

1. Dean – Dr. N. Chandrasekhar, Professor & Head, Centre for Marine Geotechnology, Manonmaniam Sundaranar University, Thirunelveli, Tamil Nadu - Chairman
2. Chairperson of Board of Studies in Applied Geo Science- Member
3. Chairperson of Board of Studies in Biological Oceanography - Member
4. Chairperson of Board of Studies in Physical Oceanography and Ocean Modeling - Member
5. Chairperson of Board of Studies in Food Science & Technology - Member
6. Chairperson of Board of Studies in Marine Microbiology - Member
7. Chairperson of Board of Studies in Biotechnology and Bioinformatics - Member
8. Dr.M.R.Boopendranath, Principal Scientist (Rtd.), Central Institute of Fisheries Technology (CIFT), Kochi (Board of Studies Biological Oceanography) - Member
9. Dr.Kamalakshan, Kokkal, Joint Director, KSCSTE, Sasthra Bhavan (Board of Studies Geoscience) - Member
10. Dr.L.Harenduprakash, Director (Board of Studies in Physical Oceanography and Ocean Modeling)- Member
11. Dr.S.Girija, Director NIFPHATT, Kochi 17 (Board of Studies Food Science and Technology) - Member
12. Dr.K.V.Lalitha, Principal Scientist, CIFT, Kochi (Board of Studies Marine Microbiology) - Member
13. Dr.C.Justin David, Academic Consultant, Dept.of Biotechnology and Bioinformatics, KUFOS (Board of Studies Biotechnology and Bioinformatics) - Member
14. Dr.Baban Ingole, Scientist F., NIO, Goa - Member



**Prof. Krishnan Kutty**  
Professor, IITM  
**Dean of the Faculty**

## III Faculty of Ocean Engineering

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



**Prof. (Dr.) N. R. Menon**  
Emeritus Professor, CUSAT  
**Dean of the Faculty**

#### **IV Faculty of Climate Variability and Aquatic Ecosystem**

1. Dean - Prof. (Dr.) N. R. Menon, Professor Emeritus, Dept. of Marine Biology, Microbiology and Biochemistry, CUSAT, Kochi -16 - Chairman
2. Chairperson of Board of Studies in Coastal Zone Management - Member
3. 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



**Prof. (Dr.) Bhassi**  
Professor, CUSAT  
**Dean of the Faculty**

#### **V Faculty of Management, Humanities and Social Sciences**

1. Dean - Prof. (Dr.) M. Bhassi, Director, School of Management Studies, CUSAT, Cochin -22 - Chairman
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

## Directors of Various Schools

Sl.No.	Name & Designation	School
1	Dr. K. V. Jayachandran, Professor	Director (i/c), School of Fisheries Resource Management and Harvest Technology
2	Dr. Sajan George, Professor	Director (i/c), School of Aquatic Food Products
3	Dr.M.S.Raju, Professor	Director, School of Management and Entrepreneurship
4	Dr.K.Gopakumar, Prof. of Eminence	Director (i/c), School of Aquatic Food Products & Technology
5	Dr.S.Shyama, Professor	Director (i/c), School of Aquaculture & Biotechnology
6	Dr.S.Suresh Kumar, Professor	Director (i/c), School of Ocean Science & Technology
7	Sri.N.N.Raman, Associate Professor	Director (i/c), School of Fishery Environment
8	Dr.K.Ranjeet, Associate Professor	Director (i/c), School of Fishery Resource Management and Harvest Technology
9	Dr.M.K.Sajeevan, Associate Professor	Director (i/c), Director, School of Ocean Engineering and Underwater Technology

## Heads of Departments

Sl.No.	Name & Designation	Department
1	Dr. S. Shyama, Professor	Dept. of Aquaculture
2	Dr. S. Shyama, Professor	Dept. of Fish Nutrition and Feed Technology
3	Shri N. N. Raman	Dept. of Fishery Hydrography
4	Dr. Devika Pillai, Associate Professor	Dept. of Aquatic Animal Health & Management
6	Dr. Sajan George	Dept. of Aquatic Food Products
7	Dr. M.K. Sajeevan, Associate Professor	Dept. of Fisheries Resource Management
8	Dr. S. Krishnakumar	Dept. of Fishing Technology
9	Dr. Manoj Kumar B.	Dept. of Fishing Technology
10	Dr. V. K. Venkataramani, Academic Consultant	Dept. of Biological Oceanography and Biodiversity
11	Dr. V. K. Venkataramani, Academic Consultant	Dept. of Biotechnology
12	Dr. V. K. Venkataramani, Academic Consultant	Dept. of Integrated Coastal Zone Management
13	Dr. C.V.K. Prasada Rao, Academic Consultant.	Dept. of Physical Oceanography and Ocean Modeling .
14	Dr. S. Rajendran, Academic Consultant.	Dept. of Applied Geoscience
15	Dr. S. Rajendran, Academic Consultant.	Dept. of Remote Sensing Tech.&GIS
16	Dr. S. Rajendran, Academic Consultant.	Dept. of Disaster Mgt.
17	Dr. K. Gopakumar, Prof.of Eminence	Dept. of Food Science & Technology
18	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. T.V. Anna Mercy Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
3	Dr. K.V. Jayachandran Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
4	Dr. J. Rajasekharan Nair Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
5	Dr. K.M. Mathew Professor	Commerce	Management Studies and Entrepreneurship
6	Dr. K.S. Purushan Professor	Fisheries Extension	Management Studies and Entrepreneurship
7	Dr. Sajan George Professor	Fish Processing	Aquatic Food Products and Technology
8	Dr. P.M. Sherief Professor	Fish Processing	Aquatic Food Products and Technology
9	Dr. S. Shyama, Professor	Aquaculture	School of Aquaculture and Biotechnology
10	Dr. V. Ambilikumar Professor	Business Management	Management Studies and Entrepreneurship
11	Dr. S. Suresh Kumar Professor	Biological Oceanography	Fisheries Resource Management and Harvest Technology
12	Dr. M. M. Jose Associate Professor	Fish Processing	Aquatic Food Products and Technology
13	Dr. Devika Pillai, Associate Professor	Aquaculture	School of Aquaculture and Biotechnology
14	Dr.B. Manoj Kumar Associate Professor	Fishing Technology	Fisheries Resource Management and Harvest Technology
15	Sri. N.N. Raman Associate Professor	Marine Meteorology	Fisheries Resource Management and Harvest Technology
16	Dr. Daisy C. Kappan Associate Professor	Fishery Extension	Management Studies and Entrepreneurship
17	Sri.Mathew Sebastian Associate Professor	Statistics	Management Studies and Entrepreneurship
18	Smt. V. Malika Associate Professor	Statistics	Management Studies and Entrepreneurship
19	Smt. Alphy Korath Associate Professor	Fishery Statistic	Management Studies and Entrepreneurship
20	Mrs. Susy V. John Associate Professor	Physical Education	Physical Education
21	Dr. K. Dinesh Associate Professor	Aquaculture	Fisheries Resource Management and Harvest Technology
22	Dr. Ranjeet K. Associate Professor	Biological Oceanography	Fisheries Resource Management and Harvest Technology
23	Dr M. K. Sajeevan Associate Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology

24	Dr. K.R.Salin Assistant Professor	Aquaculture	Fisheries Resource Management and Harvest Technology
25	Dr. Anu Gopinath Assistant Professor	Chemical Oceanography	Fisheries Resource Management and Harvest Technology
26	Smt. Safeena M.P. Assistant Professor	Microbiology	Aquatic Food Products and Technology
27	Dr. Blossom K.L. Assistant Professor	Food Science & Nutrition	Aquatic Food Products and Technology
28	Dr. Prabhakaran M.P. Assistant Professor	Fisheries Oceanography	Fisheries Resource Management and Harvest Technology
29	Dr. Chiranjiv Pradhan Assistant Professor	Fish Nutrition	School of Aquaculture and Biotechnology
30	Dr. Punnedath Preetham Assistant Professor	Biochemistry	Aquatic Food Products and Technology
31	Dr. S.M. Rafi Assistant Professor	Biological Oceanography	Fisheries Resource Management and Harvest Technology
32	Dr. K. Jayalakshmi Assistant Professor	Fish Biology	Fisheries Resource Management and Harvest Technology
33	Dr. Rajeev Raghavan Assistant Professor	Fish Taxonomy	Fisheries Resource Management and Harvest Technology
34	Dr. Linoy Libini Assistant Professor	Aquaculture	School of Aquaculture and Biotechnology
35	Dr. Abhilash Sasidharan Assistant Professor	Fish Processing	Aquatic Food Products and Technology
36	Dr. Binu Varghese Assistant Professor	Fish Breeding	School of Aquaculture and Biotechnology
37	Dr. Rejish Kumar Assistant Professor	Aquaculture	School of Aquaculture and Biotechnology
38	Dr. Swapna P. Antony Assistant Professor	Fish Pathology	School of Aquaculture and Biotechnology
39	Dr. Pramila S. Assistant Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
40	Dr. Anwar Ali P.H. Assistant Professor	Fishery Biology	Fisheries Resource Management and Harvest Technology
41	Dr. Mithun Sukumaran Assistant Professor	Aquaculture	School of Aquaculture and Biotechnology

### 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	Management and Entrepreneurship
3	Dr. D.D. Namboothiri	Food Science & Technology	Ocean Science and Technology

### 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	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. C. Justin David	Biotechnology	Ocean Science and Technology
6	Dr. N. Rajendran	Microbiology	Ocean Science and Technology
7	Dr. Benny N. Peter	Coastal Zone Management	Ocean Engineering and Underwater Technology
8	Dr. P.T. Lakshmanan	Marine Chemistry	Ocean Science and Technology
9	Dr. K.V. Thomas	Disaster Management	School of Ocean Engineering and Underwater Technology

### Teachers on contract basis

Sl. No.	Name & Designation	Discipline	School
1	Dr. Mariya T. Cheeran	Rural Management	Management and Entrepreneurship
2	Dr. Sneha Susan Simon	Fish Processing	Aquatic Food Products & Technology
3	Sri. Hamid Hussain. V	Disaster Mangement	Fishery Environment
4	Dr.. Suresh P.R.	Economics	Management 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	Sri. Arun Kumar V.S.	Ocean Engineering	Ocean Engineering and Underwater Technology
10	Sri. Sreenal Sreedhar	Remote Sensing	„
11	Smt. Ashamol V.		Management and Entrepreneurship
12	Smt. Mary Jisha Francis	Physical Oceanography	Ocean Sciences and Technology
13	Smt. Sandhya Lekshmi	Aquaculture	Aquaculture and Biotechnology
14	Sri. George Joseph	Human Resource Management	Management and Entrepreneurship
15	Sri. Rajeeve G.K.	Marketing Management	Management and Entrepreneurship
16	Sri. Shajeera K.A.	General Management	„
17	Dr. Sanu Jacob	Food Science	Ocean Sciences and Technology
18	Smt. Ashamol	Management	Management and Entrepreneurship

### Guest Lecturers

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

### Non - Teaching Staff

Sl. No.	Name & Designation	Section
<b>GENERAL ADMINISTRATION</b>		
1	Smt. M. D. Kunjamma, Deputy Registrar	Administration
2	Sri. K. P. Sajan, Assistant Registrar	,,
3	Sri. Gopinathan Kartha, Assistant Registrar	,,
2	Sri. K. M. Mohammed Iqbal, Assistant Registrar	,,
3	Sri. P.R.Sreekumar, Section Officer	,,
4	Smt. Meera. T. M., Section Officer (FC& D)	
5	Sri. S. Shaheer, Asst. Section Officer	,,
6	Sri. Vijayshine. K. V, Asst. Section Officer	,,
7	Sri. K. K. Faizal, Asst. Section Officer	,,
8	Sri.Muhammed Shanar, Asst. Section Officer	,,
9	Smt. H. K. Khadeeja Beevi, O.S. (Hr. Gr.)	,,
10	Smt. K. A. Geetha, O.S. (Hr. Gr.)	,,
11	Smt. K. D. Rossily, O.S. (Hr. Gr.)	
12	Smt. Ajitha T. C, O.S. (Hr. Gr.)	
13	Smt. Litty Fernandez, Sel. Gr. Computer Asst.	,,

14	Sr. T. M. Devassy, Asst. Section Officer	Fisheries Station, Puduveyypu
	Smt. Rama V. K., O.S. (Hr. Gr.)	„
	Smt. Rajani M. P., O.S. (Hr. Gr.)	„
<b>PLANNING &amp; DEVELOPMENT</b>		
15	Sri. P.V. Asokan, Assistant Registrar	Planning & Devt.
16	Sri. Raju Kurian. M, Asst. Section Officer	„
17	Smt. Vinu C.V., Asst. Section Officer	„
18	Dr. P.Sunilkumar, Asst. Section Officer	
<b>ACADEMIC</b>		
19	Smt. Piusa Felix, Assistant Registrar	Academic
20	Smt. Deepthi. V., Asst. Section Officer	„
21	Sri.Ajith Kumar K. K., Asst. Section Officer	„
22	Smt. T. M. Dhanya, Sr. Gr, Computer Asst.	„
<b>FINANCE</b>		
23	Sri. C. Pradeep, Deputy Registrar	Finance
24	Sri.T.K. Deleep, Section Officer	„
25	Mr. P. Santhosh, Section Officer	
26	Smt. Elizabeth Edward, Section Officer	„
27	Smt. Seema M.C., Sel. Gr. Computer Assistant	Fisheries Station, Puduveyypu
28	Mr. P. J. Cleetus, Section Officer	
29	Mr. H. Abdul Hakim, Section Officer	
30	Mr. Nazeer Khan, Section Officer	
31	Smt. Seema M. C., Asst. Section Officer	
<b>GENERAL</b>		
32	Smt. K.B. Jaya, Assistant Registrar & PS to Vice Chancellor	Office of Vice Chancellor
33	Smt. Priya M., Asst. Section Officer	„
34	Sri. A.V. Thomas, Sel. Gr. Computer Assistant	„
35	Sri. Vijayan, Office Superintendent	Office of Pro Vice Chacnellor
36	Sri. N. B. Sudheer, Assistant Registrar & PA to Registrar	Office of Registrar
37	Smt. Thressiamma John, Office Superintendent	„
38	Smt. Tessy K. Thomas, Computer Programmer	
39	Sri.Kunjumammed. V. S., Assistant Librarian	Library
40	Smt. P. V. Vijayalakshmi, Reference Assistant	„
41	Smt. Ramya Raveendran, Technical Assistant	„

42	Smt. Padma Narayanapillai, Farm Superintendent	Farm Staff
43	Sri. K.K. Reghuraj, Farm Manager Gr. I	,,
44	Smt. Bindumol Abraham, Farm Manager Sel. Gr.	,,
45	Sri.K.K. Sreekumar, Pump Operator	
46	Sri. P. M Beneesh	Lab Assistant
47	Smt. P. S. Surya	,,
48	Smt. Rajamma K.M.	,,
49	Mr. A. M. Kareem	
50	Mr. P. Madhavan Kutty	
51	Sri. A. M. Abdul Khadar, HDV Driver	Transportation Wing
52	Sri. K. Surendran, HDV Driver	,,
53	Sri. N.C., Jose, LDV Driver	,,
54	Sri. A.T. Gheevarghese, LDV Driver	,,
55	Smt.Girijamma G., Matron Sel. Gr.	Hostel
56	Sri.K.J. Jose, Dupli. Machine Operator Sr.Gr.	Office
57	Sri.Lineesh K.R.	Office Attendant
58	Sri. Arun K.J.	,,
59	Sri. Renjith.A.R.	,,
60	Smt.Sindhu Devi (On deputation)	,,

**Sri. V. S. Kunju Mohammed** - Asst. Librarian

**Sri. K.V. Abdul Khadar** - Publication & Public Relations Officer

### Contract Staff – External Aided Project / Plan Project

Sl. No.	Name	Designation
1.	Sri. Rajeesh P.M.	Research Fellow
2.	Smt. Mekha Bose	Tech. Assistant
3.	Sri. Sanju K.	Research Fellow
4.	Smt. Resmi M.R.	Field Assistant
5.	Smt. Shiny Peter	,,
6 .	Smt. Anju M.S.	,,
7.	Smt. Salini N.S.	,,
8.	Smt. Henamol A.A.	,,
9.	Smt. Hema A.A.	,,
10.	Smt. Syamala V.K.	,,
11.	Smt. Remya L. Sundar	Research Fellow
12.	Sri. S. Thiruvvarasu	,,

13.	Smt. Maneeja Murali	,,
14.	Sri. Sreenath V.R.	Senior Research Fellow
15.	Smt. Divya V. Haridas	,,
16.	Smt. Anu Remanan	Research Fellow
17.	Smt. Gilgi M.G.	Nursery Attendant
18.	Smt. Surya A.B.	SRF
19.	Smt. Sreeja P.V.	Field Assistant
20.	Sri. Vineeth kumar	,,
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-Accountant
32.	Smt. Geeji M.T.	SRF
33.	Smt. Sneha K.G.	SRF
34.	Sri. Rakesh C.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)

#### Contract Staff – Engineering

Sl. No.	Name	Designation
1	Smt. Anija G.T.	Assistant Engineer (Civil)
2	Smt. Shiny M.V.	Overseer
3	Sri. Santhosh Kumar K.P	Electrician
4	Sri. Aneesh T.	,,
5	Sri. Mohandas S.	Assistant Engineer (Elec.)
6	Kum. Anjana Anilkumar	Computer Engineer

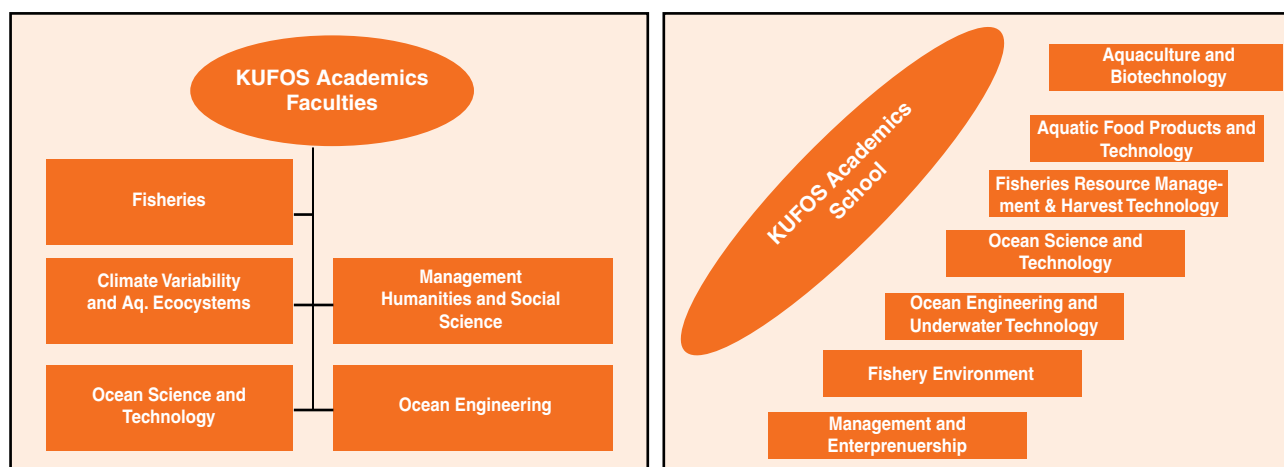
**Daily Wage Staff**

Sl. No.	Name	Designation
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 Attendant
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	Sri. Saneer N. S.	Field Assistant
26	Sri. Nazeer T. K.	Pump Operator
27	Sri. Sasidharan Pillai	Security Guard.

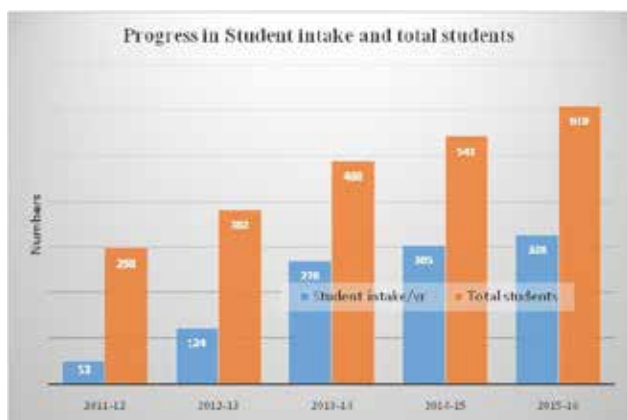
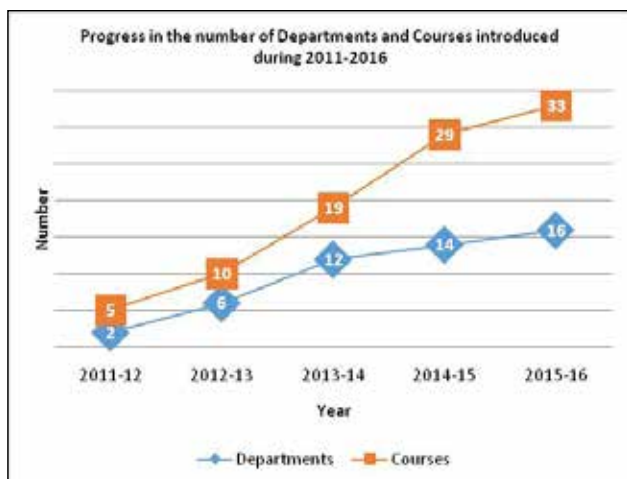
## Academic Progress

Kerala University of Fisheries and Ocean Studies (KUFOS), Panangad had its inception in 2011 to address the intricacy in the fisheries sector, development of the human resource required for the growth of this sector and to solicit the related opportunities in our country in general and Kerala in particular. The academics of this university is well planned and highly systematic in order to fulfil and cater to the need of the industry and research in fisheries and ocean studies and to create an impressive future generation equipped with skills, research attitude and foresight to develop the fisheries sector.

There are seven schools in KUFOS under five faculties as shown below.

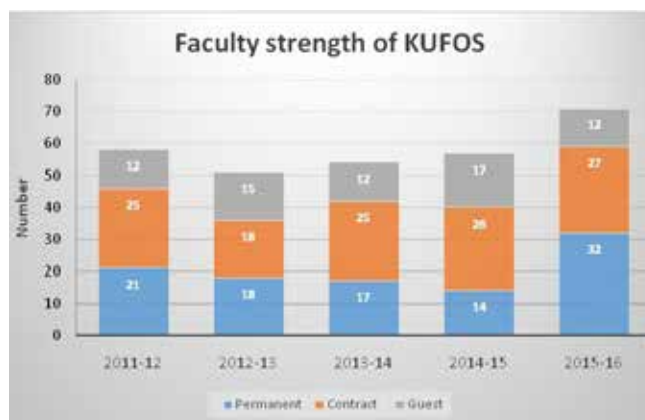


KUFOS attained tremendous progress in the academic field by initiating a number of programmes in fisheries and ocean sciences. Starting of new postgraduate programmes are going in tune with the goal fixed in “Vision 2020” document. At the time of inception of KUFOS, there was only one UG and four PG programmes. During the short span of two years the number of courses have increased exponentially to one UG and 33 PG programmes.



The number of students also showed similar growth, from 150 to 750 with an improvement in student intake from 53 to 328 per annum.

Faculty strength in KUFOS has also achieved a remarkable progress with the recruitment of 20 teaching staff including Professors, Associate Professors and Assistant Professors. Presently KUFOS have five professors, 8 Associate Professors and 19 Assistant Professors. Besides, one Professor of Eminence, eight Academic Consultants and 12 Assistant Professors are working on contract. In addition, KUFOS is availing the service of eminent scholars of national repute as adjunct faculties and guest lecturers.



## Various Schools

### School of Aquaculture and Biotechnology

Aquaculture is a dynamic field which requires equal emphasis in all sectors of practical aqua farming such as farming, feeds and feeding, seed production, health management, soil and water quality management. The academic programmes of the School of Aquaculture and Biotechnology are designed so as to ensure competence to fisheries professionals in all specialised areas of aquaculture. The School of Aquaculture and Biotechnology aims at equipping fisheries graduates to become qualified, competent, fisheries professionals, well versed in addressing and managing all relevant aspects of aquaculture. The School offers M.F.Sc programmes in Aquaculture, Fish Nutrition and Feed Technology, Aquatic Animal Health Management.

#### Departments

1. Aquaculture
2. Fish Nutrition and Feed Technology
3. Aquatic Animal Health Management
4. Aquaculture Biotechnology and Genetic Engineering

#### Research Centres

1. Centre for Nutritional Research, Feed formulation and standardization / enforcement of feed quality
2. Centre for Biofloc Technology
3. Centre for Aquatic Animal Health Management
4. Centre for Aquaculture Genetics and Biotechnology
5. Fish and Prawn Seed Bank
6. Prof. Alikunhi Chair for Sustainable Aquaculture Systems

#### Academic Programmes

B. F. Sc. is offered as an interschool programme

M. F. Sc. programmes in

- ❖ Aquaculture
- ❖ Fish Nutrition and Feed Technology
- ❖ Aquatic Animal Health Management
- ❖ Fish Genetics and Breeding

**Faculty Members**

Dr. Shyama S.	Director (i/C), School of Aquaculture and Biotechnology Professor and Head Dept. of Aquaculture Dept. of Fish Nutrition and Feed Technology
Dr. M. M. Jose	Associate Professor (upto 29-11-2011)
Dr. Devika Pillai	Associate Professor and Head Dept of Aquatic Animal Health Management
Dr. Salin K.R.	Assistant Professor (Aquaculture)
Dr. Chiranjiv Pradhan	Assistant Professor (Fish Nutrition)
Dr. Binu Varghese	Assistant Professor (Fish Breeding)
Dr. Linoy Libini	Assistant Professor (Aquaculture)
Dr. Rejish Kumar	Assistant Professor (Aquaculture)
Dr. Swapna Antony	Assistant Professor (Fish Pathology)
Dr. Mithun Sukumaran	Assistant Professor (Aquaculture)

**Assistant Professors (Contract)**

Dr. Juliet Joseph
Ms. Preetha. P.M.
Ms. Sumangala Sivaraman
Dr. Rachel Fernandez
Dr. Binoy Rajan

**a. Non-Teaching Staff**

Sri K. Madhavankutty, Laboratory Assistant

**Research Projects (Externally aided projects)**

SI No.	Title of Project	Funding Agency
1	Setting Up of Aquatic Animal Health and Environment Management Laboratory (AAHEL) at the Kerala University of Fisheries and Ocean Studies, Kochi - A Referral Laboratory for the State of Kerala" (PI- Dr. Devika Pillai)	National Fisheries Development Board, Hyderabad
2	National Surveillance Programme on Aquatic Animal Diseases (NSPAAD) (PI- Dr. Devika Pillai)	NFDB
3	Distribution of gelatinous zooplankton in the west coast of India and their identification (Co-PI)	CMLRE, Ministry of Earth Sciences
4.	Shrimp Disease Surveillance in the State of Kerala and formulation of the best health management practices with respect to each region (PI- Dr. Devika Pillai)	RKVY
5.	Development of a detection kit for white tail disease of <i>M. rosenbergii</i> by loop mediated isothermal amplification (LAMP) (PI- Dr. Devika Pillai)	DBT

6.	Establishment of an aquaclinic at College of Fisheries, Panangad (PI- Dr. Devika Pillai)	RKVY
7.	Biodiversity of cultivable air breathing fishes of Kerala and development of appropriate culture strategies for <i>H.fossilis</i> and <i>Clarius</i> spp. (Co PI- Dr. Devika Pillai)	Department of Fisheries, Kerala
8.	Environmental and socio-economic impacts of aquaculture in pokkali fields of Kerala (Co PI- Dr. Devika Pillai)	ADAK, Govt. of Kerala
9.	The impact of one crop paddy- one crop prawn rotational farming on environment and socio-economics in Kuttanad (Co PI- Dr. Devika Pillai)	ADAK, Govt. of Kerala
10.	ICAR Seed project-“ Seed production in agriculture crops and fisheries” (Co PI- Dr. Devika Pillai)	ICAR
11.	Characterization of different stocks of <i>Macrobrachium rosenbergii</i> and development of genetically improved strain through selective breeding (Co PI- Dr. Devika Pillai)	Dept. of Fisheries, Govt. of Kerala
12.	Isolation, purification and characterization of antibacterial agent and anticancer agent from the accessory nidamental gland and ink of the cuttlefish, <i>Sepia pharaonis</i> Ehrenberg (Co PI- Dr. Devika Pillai)	DBT, Govt. of India, New Delhi.
13.	Production of bioactive substances from squid and cuttlefish processing wastes” (Co PI- Dr. Devika Pillai)	NATP

### University Research Projects

1. Plan project on 'Establishment of the Centre for Aquatic Animal Health Management' –Kerala University of Fisheries and Ocean Studies 2012-17.
2. KUFOS Aided Project on 'Micro propagation for increasing the production of ornamental aquarium plants'-2013-14
3. Plan project on 'Establishment of Biotechnology Unit' with subproject 'In vitro studies on the effect of the active components of selected plants and aquatic algae in inhibiting bacterial and viral pathogens of finfish/ shellfish. 2003-06. College of Fisheries, Panangad, Kerala Agricultural University.
4. Investigations on the breeding of sucker catfish (*Hypostomus plecostomus*), Koi carp (*Cyprinus carpio*) and Pearl gourami (*Trichogaster leerii*). College of Fisheries, Panangad, Kerala Agricultural University. 2000-2002
5. “Development of high production technologies for brackish water fishes” College of Fisheries, Panangad, Kerala Agricultural University. 1999-2002

### Achievements of Faculty

1. Best Paper Award  
Sreejisha P.S. and Devika Pillai (2013). An In Silico Approach to design a 3D structure of envelope protein VP19 from white spot syndrome

virus (WSSV). Paper presented at the National Seminar on Emerging Trends in Indian Aquaculture (Etia 2013), 21-23 March, 2013, Dept. of Aquatic Biology & Fisheries, University of Kerala, Kariavattom, Thiruvananthapuram.

2. Best Poster Award

Divya V. Haridas, Devika Pillai, Manojkumar B., Nair C.M and, Dinesh K. (2013). Shrimp disease surveillance in the State of Kerala and formulation of the best health management practices with respect to each region. Poster presented at the National Seminar on Emerging Trends in Indian Aquaculture (Etia 2013), 21-23 March, 2013, Dept. of Aquatic Biology & Fisheries, University of Kerala, Kariavattom, Thiruvananthapuram.

3. Developed a kit for rapid detection of white tail disease of the giant freshwater prawn *Macrobrachium rosenbergii* by LAMP technology
4. Developed and standardized micropropagation of four ornamental aquarium plants
5. Certificate of Appreciation of the Asian Fisheries Society Indian Branch (AFSIB) in 2012 for the service rendered for the society, Mangalore, 2012.
6. Certificate of Appreciation of the Asian Fisheries Society for meritorious service rendered during 8<sup>th</sup> Asian Fisheries Forum, Kochi from 20-23 November, 2007

**Placement Details :** The department was established in 2013 and the first batch of M.F.Sc. students will complete their master's degree programme shortly.

### Research Highlights

#### Technology developed or transferred

- ❖ Characterized the wild and cultured populations of giant freshwater prawns in India using mtDNA and microsatellite markers, and outlined the significant genetic diversity existing within and among the different Indian prawn stocks.
- ❖ Analysed the transcriptome profile of the giant freshwater prawn genome for the first time in India using Next-Generation Sequencing Technology.
- ❖ Shrimp disease surveillance was carried out in the state of Kerala, particularly in Kollam district in the south, Ernakulam district in mid Kerala and Kannur district in North Kerala. Samples showing clinical signs / unhealthy post larvae, juveniles and adults were collected from different regions. Water and soil samples were also collected. Screening of different viruses by PCR was carried out.
- ❖ Considering the importance of ornamental aquarium plants in international trade and domestic market, the micro-propagation of five ornamental aquarium plants, viz; *Anubias minima*, *Bacopa caroliniana*, *Rotala rotundifolia*, *Nymphoides cristata* and *Aponogeton ulvaceus* was

taken up. Micro-propagation was successfully standardized in the first four plants.

- ❖ The immense potential of substrate based biofilm was demonstrated in a wide range of species
- ❖ Eco-friendly feeds were developed for cultivable finfish and shellfish
- ❖ Utilisation of processing wastes in aquafeed formulation was assessed

### Extension

#### a. Outreach activities

Disease diagnosis and surveillance

Analysis of water samples

Sale of aqua feed / seeds of ornamental and food fishes / freshwater prawn

#### b. Consultancy services

Consultancy services made available to the public in the following areas:

Feasibility study of fish / prawn / ornamental fish culture operations

Site selection for aquaculture ventures

Eco-friendly Aqua feed production

Feed management

Ornamental fish culture

Fish Breeding

Disease diagnosis and surveillance

Water quality assessment

Health management

Remediation of water quality problems

### Facilities

#### Laboratories

Aquaculture

Nutrition

Biotechnology

Histopathology

Genetics

#### Hatcheries

Chinese circular hatchery

Jar hatchery

Fresh water prawn hatchery

Instructional Farm

## School of Fisheries Resource Management & Harvest Technology

The School of Fisheries Resource Management and Harvest Technology is one of the important school of the University. The school has been established as per the KUFOS ACT 2010. Under this school four major departments – Department of Fisheries Resource Management, Fishery Hydrography, Fishing Technology and Fishery Engineering, which were functioning under erstwhile College of Fisheries under Kerala Agricultural University have been included. In addition two new departments, namely, Department of Taxonomy and Department of Basic Sciences have also been created. This is one of the three schools offering fisheries education under ICAR system. Three centers, namely, Center for Taxonomy, Center for Inland Data Base and Center for Germplasm Conservation of Inland Aquatic Organism have also started functioning under the School. The School undertakes teaching, research and extension in marine, brackish and freshwater ecosystems.

The main objectives of the school are –

- ❖ To impart education for B. F. Sc., M. F. Sc. and Ph. D. students so as to create man power for the efficient management of fisheries in the state
- ❖ To impart education in areas of Taxonomy, Anatomy, Physiology, Biology, Capture Fisheries, Stock Assessment, Gear Technology, Navigation, Refrigeration and Equipment Engineering, Fishing Craft Technology and so on.
- ❖ To offer training programmes in relevant fields to farmers, officers, teachers, scientists
- ❖ To undertake problem specific research in areas of capture fisheries, biology, taxonomy, Population Dynamics and Stock Assessment, Anatomy, Physiology, Biodiversity, Conservation, Gear Technology, Fishing Technology, Fishing Craft Technology and so on
- ❖ To carry out extension activities in fisheries sector, especially for conservation of resources, judicious exploitation, utilization of unutilized biodiversity and so on.
- ❖ To work for the ecosystem balance.

### Departments of the School

1. Department of Fisheries Resource Management
2. Department of Fishery Hydrography
3. Department of Fishing Technology
4. Department of Fishery Engineering

### Staff

1. Dr. T. V. Anna Mercy, Professor (upto 19-02-2014)
2. Dr. K. V. Jayachandran, Professor & Director (upto 02-08-2015)

3. Dr. J. Rajashekar, Professor (upto 24.11.2015)
4. Dr. S. Suresh Kumar, Professor (Biological Ocenaography)
5. Mr. N. N. Raman, Associate Professor (Metereology)
6. Dr. B. Manoj Kumar, Associate Professor (Fishing Technology)
7. Dr. K. Ranjeet, Associate Professor (Biological Ocenaography)
8. Dr. M. K. Sajeevan, Associate Professor (Fishery Biology)
9. Dr. Rajeev Raghavan, Assistant Professor (Fish Taxonomy)
10. Dr. S. Pramila, Assistant Professor (Fishery Biology)
11. Dr. K. J. Jayalaxmi, Assistant Professor (Fisheries)
12. Mr. Anvar Ali, PH, Assistant Professor (Fishery Biology)
13. Dr. S. M. Raffi, Assistant Professor (Biological Ocenaography)
14. Dr. Anu Gopinath, Assistant Professor (Chemical Ocenaography)
15. Dr. M. P. Prabhakaran, Assistant Professor (Fisheries Ocenaography)

#### **Research Centres of the School of Aquaculture and Biotechnology**

1. Prof. Alikunji Chair for Sustainable Aquaculture Systems
2. Centre for Taxonomy of Aquatic Animals
3. Centre for Germplasm Conservation of Inland Aquatic Organisms
4. Centre for Inland Fishery Database

#### **Academic Programmes**

BFSc  
 MFSc (Aquatic Environment Management)  
 MFSc (Fisheries Resource Management)  
 MFSc (Fishery Engineering Technology)  
 PhD programme

#### **Research Projects (Externally aided projects)**

#### **Facilities**

The School is equipped with smart class rooms, labs for biology, chemistry, meteorology lab., Wet laboratory, PG laboratory and Ph. D. laboratory, Fishing Technology lab and museum, Fishery Engineering lab and models, Referral Museum

#### **1. Academic**

School of Fishery resource Management and Harvest Technology  
 Department of Fisheries Resource Management

The school was constituted under the KUFOS Act 2010 (5 of 2011) by Government of Kerala and KUFOS first statute 2013 as per G.O. (P) No.67/2013/F&PD dated 16th November 2013. The school of School of Fisheries Resource Management and Harvest Technology comprises of 6 departments.

Offers B.F.Sc. (along with other Schools), 2 M.F.Sc. and PhD programmes. The main mandate of the school is to offer academics, research and extension programs in area of Fisheries Resource Management, Fisheries Engineering and Technology and allied fields. Establishing research centers in area of great relevance and thrust comes under the purview of the school.

The Department is equipped with smart class rooms, labs for biology, wet laboratory, P G laboratory and Ph. D. laboratory, Fishing technology lab and museum, fishery engineering lab and models, referral museum

### Projects under this School

1.	Barcoding of shrimps – CMLRE funded project
2.	Distribution of Gelatinous zooplankton in the West Coast of India and their identification – CMLRE funded project
3.	Taxonomy of aquatic animals – Govt. of Kerala plan project
4.	Center for Inland Data Base– Govt. of Kerala plan project
5.	Center for Germplasm Conservation of Inland Aquatic Organism – Govt. of Kerala plan project

### 1. Activities/Events

(For enhancement of intellectual knowledge- participation of Faculty Improvement programmes-Seminars, Training, Short courses- Invited talks etc)

### 2. Achievements of Faculty

Dr. K. V. Jayachandran got Naga international awards of the World Fish Center for 2002 and 2003

Dr. Anna Mercy got Women's World summit Foundation (WWSF) Award, Geneva

Invited Visiting Professorship of Mexico

Dr. K. V. Jayachandran got recognition award of the Zoological Society of India

Dr. K. V. Jayachandran got Senior Scientist award of the Zoological Society of India

Dr. K. V. Jayachandran got Prof. Bensare Award on Biodiversity of Zoological Society of India

Dr. K. V. Jayachandran got best teacher award of the Professional Fisheries Graduates Forum

### Future plans

To develop the school as a nodal centre for developing policies and framework for Fisheries Resource Management in the state.

To create a centre for excellence in taxonomy for freshwater fishes and develop a centre for germplasm conservation of indigenous endangered fishes

To provide a platform to budding marine biologists, fishery biologists in understanding the subject through research and skill based education

To facilitate, promote and support collaborative ocean-related research and education.

To develop and strengthen networks that enable timely identification of future potential areas of oceanographic study and distribution of research results at grass root level for the benefit of the society

# School of Aquatic Food Products & Technology

## Introduction

The School of Aquatic Food Products and Technology is one of the schools that constitute the Faculty of Fisheries of KUFOS. The major areas covered by the school are fish processing technology, biochemistry and microbiology. Teaching, research and extension activities related to post harvest of fish are the main activities of the department. Courses in fish processing, biochemistry and microbiology are being offered to students of B.F.Sc. degree programme. In addition, the school provides them with facilities for undergoing in-plant training in commercial fish processing plants (RAWE) and Experiential Learning Programme. PG degree programmes of the school include M.F.Sc. in Fish Processing Technology and Ph.D. in Fish Processing Technology.

## Departments of the School of Aquaculture and Biotechnology

1. Preservation and packaging technology.
2. Microbiology
3. Biochemistry

## Academic Programmes

1. B. F. Sc. offered as an Interschool program
2. M. F. Sc. programs in  
Fish Processing Technology
3. PhD

## Faculty Members

- |                            |  |
|----------------------------|--|
| 1. Dr. Sajan George        | Professor (upto 27-04-2015)                        |
| 2. Dr. P. M. Shereef       | Professor  |
| 3. Dr. S. Krishnakumar     | Professor  |
| 4. Dr. K Gopakumar         | Professor of Eminance and Director                 |
| 5. Dr. M. K. Sajeevan      | Professor (i/c)                                    |
| 6. Dr. Abhilash Sasidharan | Assistant Professor,<br>Fish Processing Technology |
| 7. Dr. Safeena M.P.        | Assistant Professor, Microbiology                  |
| 8. Dr. E. P. Preetham      | Assistant Professor, Biochemistry                  |
| 9. Dr. Blossom K.L.        | Assistant Professor,<br>Food Science & Nutrition   |

## Facilities

- ❖ Seafood by-product laboratory
- ❖ Modern seafood pre-processing facility
- ❖ Biochemistry laboratory
- ❖ Microbiology laboratory
- ❖ Instrumentation room
- ❖ Smart classroom

## School of Ocean Science and Technology

The school was constituted under the KUFOS Act 2010 by Government of Kerala and KUFOS first statute 2013 to offer academics, research and extension programmes in various aspects of Food Science and Technology, Biological oceanography, Biodiversity, Marine microbiology, Biotechnology, Geoscience and Marine Chemistry and related fields. The School presently comprises of 4 departments and offering 7 M.Sc. programmes and PhD in respective subjects. The man power requirements in the field of ocean studies are huge and hence the post graduate programmes have great relevance. The students were given intensive hands on training in Central Research Institutes such as CMFRI, NIO, CIFT, NERCI and CIFNET and the students were given in depth practical exposure in all along maritime districts of Kerala to learn and assess about marine biodiversity. The students undertaking the course will be fitted in the leading research institutions, universities and also they have excellent placements in international institutions.

### Departments of the School of Ocean Science and Technology

1. Biological Oceanography
2. Physical Oceanography and Ocean Modelling
3. Food Science and Technology
4. Applied Geo Sciences

### Academic Programmes

1. M.Sc. Biological Oceanography and Biodiversity	20 seats
2. M.Sc. Biotechnology and Bioinformatics	15 seats
3. M.Sc. Physical Oceanography and Ocean Modelling	15 seats
4. M.Sc. Food Science and Technology	20 seats
5. M.Sc. Applied Geo Sciences	10 seats
6. M.Sc. Marine Microbiology and Marine Drugs	15 seats
7. M.Sc. Marine Chemistry	15 seats

### Faculty Members

1. Dr. S. Suresh Kumar, Professor, Director (I/C)
2. Dr. K. Gopakumar, Professor of Eminence
3. Dr. V.K. Venkataramani, Head & Academic Consultant. Biological Oceanography and Biodiversity
4. Dr. C. V. K. Prasada Rao, Head & Academic Consultant. Physical Oceanography and Ocean Modeling
5. Prof. S. Rajendran, Head & Academic Consultant. Applied Geo Sciences
6. Dr. N. Rajendran, Academic Consultant
7. Dr. Justin David, Academic Consultant
8. Dr. P. T. Lakshmanan, Academic Consultant

### **Assistant Professors (Contract)**

1. Dr. Raghul Subin
2. Dr. Reynold peters
3. Dr. Vasundhara G.
4. Dr. Manjusha
5. Dr. Sanu Jacob
6. Dr. Bini Y.
7. Dr. Smitha
8. Er. V. S. Arun Kumar
9. Mr. Mahesh J.
10. Mr. Sreenal Sreedhar
11. Mr. Sarath Prasanth
12. Mr. Basil
13. Mrs. Rachanamol
14. Mr. Linu Jacob

### **Research Projects (Externally aided projects)**

#### **Achievements**

Dr C.V.K. Prasada Rao (Academic Consultant, KUFOS) chaired a technical session on Ocean Technology and Acoustics in the 4<sup>th</sup> National Conference of Ocean Society of India (OSICON 15) which was held at NIO, Goa during 22-24 March 2015. He has also attended various meetings/ assessment board interviews for the Ministry of Earth Sciences (MoES) and Department of Research & Development Organisation (DRDO) as technical expert member.

Dr. Smitha C.K. awarded the Best Paper Award in a National Seminar on "Marine and Coastal Biodiversity and its Conservation for Future Generations" organized by St. Stephen's College, Pathanapuram, Kerala during 22<sup>nd</sup> to 23<sup>rd</sup> September, 2014.

Dr, M.P. Prabhakaran – got the approval as Research Guide in Biological Oceanography under the Faculty of Ocean Sciences, KUFOS

#### **Facilities**

From 2015 batch onwards for M.Sc. (PO & OM) programme very extensive courses on ocean modelling have been introduced in the curriculum. In order to offer requisite training in these areas it is proposed to have a centre /Lab for ocean modelling activities. The proposed Ocean Modelling Centre (OMC) will consist of advanced PCs/servers, a few nodes and ocean modelling software modules. The necessary air-conditioning and UPS are also needed for this centre. OMC facility can be effectively utilised not only by M.Sc. (PO&OM) students but also by the students of M.Tech. courses like ICZM, coastal & harbour engineering, etc.

- i) A reference museum was installed in the Department. About hundreds of marine species were deposited to give the practical knowledge to the students.
- ii) A well-furnished wet laboratory was established which is equipped with microscopes, water quality testing equipments and LCD projectors. The laboratory is now fully functional for the research activities. Graduate, Post-Graduate and Research Students are utilising these facilities.

A well-furnished Instrumentation Room is also functioning and all the major equipments purchased to the tune of seven lakhs is kept in the room for the students and researchers.

- iii) Major Equipments: Dissection, Stereo, Binocular, Trinocular and Inverted Microscopes, pH meter, Conductivity meter, Multi-parameter Equipment for water quality analysis, etc.
- iv) Two well-furnished smart class rooms

New two state of the art laboratories on biochemistry and microbiology have been constructed.

#### **Activities/Events**

- i) World Ocean Science Congress - February 2<sup>nd</sup> to 5<sup>th</sup> 2015
- ii) World Environment Day 2014
- iii) World Ocean Day 2015

Department of Physical Oceanography and its faculty have taken a very active role in conducting World Ocean Science Congress (WOSC) 2015 at Kochi, during 05-08 February 2015. Faculty members from this department presented papers during this conference.

Different sessions of WOSC 2015 were organised and technical sessions on Eco-Tourism was chaired by Dr K. Gopakumar and by Dr CVK Prasada Rao. Another technical session on Ocean and National Security for WOSC 2015 was also chaired by Dr CVK Prasada Rao.

National Technology Day was celebrated on 14 May 2015 on the theme "Recent advances in postharvest technology and quality control of cash crops of Kerala". This event was funded by Kerala State Council for Science, Technology and Environment (KSCSTE).

PG students from the Department are actively participating in community development programs/seminars such as Vembanad fish count, Young Entrepreneurs Summit (YES-2014) conducted by various government and non governmental agencies.

Regular conduct of group discussions on relevant topics pertaining to the courses is being conducted among the students to increase their scientific domain knowledge. Presentation and review of recent scientific papers and books pertaining to the recent developments in the interested fields of specialization is routinely conducted by students.

### Linkages with Research Institutes

Presently twelve students are doing their PG dissertation in reputed institutes, three in National institute of oceanography NIO), four in Central Marine Fisheries Research Institute (CMFRI), three in Inter University Center for Marine Biotechnology at CUSAT and two in Nansen Environmental Research Center (NERC) India on the subjects such as marine microbial ecology, plankton dynamics, mangrove ecosystem, benthic ecology, bioactive compounds from marine organisms, application of remote sensing in marine primary productivity etc towards the transfer of knowledge and experience. Once the research is completed, salient findings of the research will be disseminated to the scientific community and policy makers.

### Placements:

Students of First (2012-14) are now working in various Research Institutes and Universities in research projects.

### Future plans

1. Centralised lab for biotechnology and biochemistry
2. Centralised lab for water and soil analysis
3. Bioinformatics Facility
4. Ocean Modelling laboratory.
5. M.Sc . Ecology
6. PG Diploma in Bioinformatics and Bio-computing
7. PG Diploma in Geoinformatics

## School of Ocean Engineering and Underwater Technology

The school was constituted under the KUFOS Act 2010 by Government of Kerala and KUFOS first statute 2013 to offer academics, research and extension programmes in various aspects of Ocean & Coastal Safety Engineering, Coastal & Harbour Engineering, Remote Sensing & GIS, Integrated Coastal Zone Management and related fields. The School presently comprises of 2 departments and offering 4 M-Tech and 1 M.Sc. programmes and PhD in respective subjects. The man power requirements in the field of Ocean Engineering and Underwater Technology are huge and hence the post graduate programmes have great relevance. The students get lot of opportunities to visit various places related to ports & harbours. The students undertaking the course will be fit to do their research in leading research institutions, universities and also they have excellent placements opportunities in International & National institutions.

### Departments of the School of Ocean Engineering and Underwater Technology

1. Department of Coastal and Remote Sensing
2. Department of Coastal and Offshore Engineering

### Academic Programmes

- |  |          |
|--|----------|
| 1. M.Tech. Ocean & Coastal Safety Engineering, | 10 seats |
| 2. M.Tech. Coastal & Harbour Engineering,      | 10 seats |
| 3. M.Tech. Integrated Coastal Zone Management, | 10 seats |
| 4. M.Tech. Fisheries Engineering,              | 10 seats |
| 5. M.Sc. Remote Sensing & GIS.                 | 10 seats |
| 6. Ph.D. in all the above discipline           |          |

### Faculty Members

- |                            |  |
|----------------------------|--|
| 1. Mr. N. N. Raman         | Director i/c, (2011-2014)  |
| 2. Dr. M. K. Sajeevan      | Director, School of Ocean Engineering<br>Associate Professor (2014-2015) |
| 3. Dr. S. Rajendran        | Head of Department of Coastal and<br>Remote Sensing, Academic Consultant |
| 4. Dr. V. K. Venkataramani | Head of Integrated Coastal Zone<br>Management Academic Consultant        |
| 5. Dr. Benny N. Peter      | Academic Consultant  |
| 6. Er. Sreenal Sreedhar    | Assistant Professor (on Contract)  |

- |    |                    |                |
|----|--------------------|----------------|
| 7. | Er. George Basil   | Guest Lecturer |
| 8. | Er. Pooja Prasanen | Guest Lecturer |
| 9. | Er. M. Meera       | Guest Lecturer |

### **Facilities**

Five well-furnished class rooms are available

Softwares Available: Matlab

### **Activities/Events**

The M. Tech students were taken for field trip periodically to coastal areas of Kerala State to learn the coastal processes, erosion and accretion problems, marine structures and to understand the socio-economic conditions of coastal inhabitants. Students visited Geological Survey of India, Marine division, Kakkanad, Kochi

The M. Tech students of 2014 -2016 batch has attended India-EU workshop on Marine Ecosystems and Climate in India, 30-31 July 2015, Ramada Resorts, Kochi

### **Achievements of Faculty**

Dr. Benny N. Peter Presented a paper entitled "Variability of Mindano Current and its interaction with Celebes Seas" at the International Conference on Earth Observation and Societal Impacts 2015Koahsiung, Taiwan, 28-30 June, 2015

### **Future Plans**

1. Centralised lab for Coastal & Harbour Engineering
2. Centralised lab for Ocean & Coastal Safety Engineering

## School of Fishery Environment

The School of Fishery Environment is one of the seven schools in the Kerala University of Fisheries and Ocean Studies and comes under the Faculty of Climate Variability and Aquatic Ecosystems. At present the School is offering two M.Sc. courses: (1) M.Sc. in Disaster Management and (2) M.Sc. in Climate Science.

### Departments in the School of Fishery Environment:

1. Department of Climate and Climate Services
2. Department of Coastal Zone Management
3. Department of Meteorology and Disaster Management
4. Department of Monsoon Studies

### Academic Programmes:

1. M.Sc. in Disaster Management
2. M.Sc. in Climate Science
3. Ph.D.

### 1. Facilities

Two well-furnished class rooms are available

Softwares Available: Matlab

Arrangements are made to purchase MIKE 21 coastal modeling software, which is highly essential for coastal process simulation studies

### 2. Activities/Events

The M. Tech students were taken for field trip periodically to coastal areas of Kerala State to learn the coastal processes, erosion and accretion problems, marine structures and to understand the socio-economic conditions of coastal inhabitants.

Students visited Geological Survey of India, Marine division, Kakkanad, Kochi

The M. Tech students of 2014 -2016 batch has attended India-EU workshop on Marine Ecosystems and Climate in India, 30-31 July 2015, Ramada Resorts, Kochi

### 3. Placement Details

The first batch of M.Tech. students (2013 – 2015) will be finishing their final semester in November 2015 only.

## School of Management and Entrepreneurship

### (Faculty of Management, Humanities and Social Sciences, KUFOS)

The School of Management & Entrepreneurship is one of the seven Schools established as per KUFOS ACT, 2010. The School is under the Faculty of Management, Humanities and Social Sciences. The mandate of the School is teaching, research and extension. The focused areas are fisheries business, management, fish marketing & trade, fisheries economics, co-operative management, maritime and fisheries laws, socio-economics of the fisherfolk & other stakeholders, statistics, entrepreneurship development, communicative English and information technology. For the planned development of fisheries in a sustainable manner training of the human resources needed for the fisheries sector and fisheries industry is of immense importance. So also, knowledge about commerce & marketing, in general promotion of innovation & entrepreneurship, fisheries trade & marketing and export procedure in particular, is quite essential, especially in the context of globalization. The success of fisheries enterprises depends upon the efficiency with which the available resources are utilized. The Master Plan of KUFOS prepared during 2011-12, streamlined the comprehensive action plan of the School during the XII Plan period. Subsequently, Curriculum Committees on various subjects with reputed experts as members were constituted. Based on the recommendation of the Committees, the various academic programmes were started in the School.

The First Statute of the University envisages the following Departments in the School:

1. Department of Economics and Statistics
2. Department of Fisherfolk Studies
3. Department of Legal Studies
4. Department of Business Administration and Management
5. Department of Social Work
6. Department of Foreign Languages
7. Department of Humanities and Social Sciences

Under the above Departments 10 PG programmes and Ph.D. Programmes are proposed. It also enlisted plan for starting new courses, viz., M.Phil., Integrated M.Phil, PG Diploma, Diploma and Certificate courses as per requirement in the above departments from time to time. The School of Management & Entrepreneurship started functioning from the Academic year 2012-13 by launching an MBA Programme.

### Academic Programmes

The School offers five Post Graduate programmes and Ph. D. Programme in various disciplines under its various Departments as per details given below.

### Post Graduate Programmes of the School:

M.Sc. (Statistics)  
 M.F.Sc. (Fisheries Economics)  
 M.B.A. (Dual Specialisation)  
 M.B.A. (Energy Management)  
 L.L.M. (Maritime Law)  
 Ph.D. Programme of the School:  
 Ph.D. (Management)

Besides, the school also offers courses for the various undergraduate and Post Graduate programmes run by the other six schools of the University.

B. F. Sc courses offered as an Inter-school programme

M.Sc., MFSc and M.Tech courses are also offered as Inter-school programmes

### Staff

Dr. M. S. Raju	:	Professor & Director
Dr. K. M. Mathew	:	Professor
Dr. K. S. Purushan	:	Professor
Dr. V. Ambilikumar	:	Professor
Smt. Alphi Korath	:	Associate Professor
Sri. Mathew Sebastian	:	Associate Professor
Smt. Malika V.	:	Associate Professor
Dr. Daisy C. Kappen	:	Associate Professor

### Departments & Academic Programmes:

#### 1. Department of Economics and Statistics

The Department offers Post Graduate Programmes, viz., M.Sc. (Statistics) and M.F.Sc. (Fisheries Economics). The intake capacity of the M.Sc. course is 10 and M.F.Sc. is five per year. A board of Studies for the Department was constituted in the year 2015-16. Twenty percent of the seats are reserved for the candidates from fisherfolk community. Two batches of M.Sc. (Statistics) are in progress.

#### 2. Department of Business Administration and Management

The Department offers Post Graduate Programmes, viz., M.B.A. (Dual Specialisation) and M.B.A. (Energy Management). The programmes were launched in the academic year 2012-13 and 2015-16, respectively. The intake of the M.B.A (Dual Specialisation) is 45 and M.B.A. (Energy Management) is 20 per year. A board of Studies for the Department was constituted during the year 2014-15. Ph.D. Programme is also offered from Department since 2014-15. Twenty percent of the seats are reserved for the candidates from fisherfolk community. The first batch of MBA students have passed out during the year 2014-15.

### (iii) Department of Legal Studies

The Department offers a Post Graduate Programmes in L.L.M. (Maritime Law). The course was launched in the Academic Year 2013-14. The intake of the course is 10 per year. A Board of Studies for the Department was constituted during the year 2014-15. Ph.D. Programme is also started in the Department since 2014-15. Twenty percent of the seats are reserved for the candidates from fisherfolk community.

### Research Centres of the School of Management and Entrepreneurship

1. 'Centre for Livelihood Security and Development Issues Among Fisherfolk of Kerala'
2. 'Centre for Indigenous Knowledge of Traditional Fisherfolk – Looping Traditional Knowledge and Science'
3. 'Centre for Survey and appraisal of Socio-economic Status of Fisherfolk'
4. 'Centre for Field Consultancy and Data Analysis'
5. Chair for Socio-Economic Empowerment of Fisherfolk and Archiving Traditional Knowledge of Fishermen

### Facilities

KUFOS provides state-of-the art infrastructural facilities and academic resources to students for nurturing and honing the management skills imparted in the lecture rooms.

### LIBRARY

The library is equipped with large number of books, journals and periodicals.



### Classrooms

The classrooms are spacious and specifically designed to facilitate participative learning. They are equipped with all the necessary modern teaching and presentation facilities.



### Awards, Achievements

A team of four students won second prize in Re-engineering case study competition conducted by NIT Trichy. The case study was on the firm 'Suguna Foods', which is one of the leading firms in poultry industry. About thirteen teams were selected for the final round presentation and our team was the only team selected from Kerala.



### Workshop on sea safety and fishermen welfare



School of Management and Entrepreneurship, KUFOS organised a Trainers' Training Programme on 24th Aug 2013 in the campus towards equipping the students on 'Sea safety and fishermen welfare'. The programme was conducted in four sessions. The sessions were engaged by experts from the Department of Fisheries, Indian Navy and Central Industrial Security Force. The services rendered by the respective agencies with a view to ensuring the safety of fishermen at sea and also the fishermen welfare schemes were discussed in the programme.

#### Non-Teaching Staff

Sri. Santhosh P. , Section Officer

Sri. Praveen C. Prasad, Office Asst.

Sri. Salim. P.A., Clas-IV

### WORKSHOP ON SEA SAFETY AND FISHERMEN WELFARE

**25<sup>th</sup> August 2013, Venue: Govt. Fisheries U. P. School, Njarakkal, Ernakulam**

As part of the Social Responsibility Programme of the 2012 Batch MBA students of SME, KUFOS jointly organised the workshop in association with the State Dept. of Fisheries, Indian Navy, Indian Coast Guard, CISF, Marine Enforcement wing, Kadalora Jagratha Samithi and Njarakkal Janamaitri Police. A total of forty one fisher-folk including full time and part time fishers registered for the workshop.

Former Fisheries Minister Sri S Sarma MLA inaugurated the workshop. He



urged all concerned departments to ensure the safety of fishermen at sea. Prof.( Dr). B Madhusoodhana Kurup, Hon'ble Vice Chancellor, KUFOS delivered the keynote address. Sri. Jude Pulikkan, President, Njarakkal Grama Panchayat, Prof.(Dr.) M.S. Raju, Director School of Management and Entrepreneurship, KUFOS, Prof. P. Kesavanath, Director of Extension, Dr. K.S. Purushan, Prof. of Eminence, Prof. K.M. Mathew, Sri. Anil Bali, Sr. Commandant, CISF and Smt. Mini Sudarsan, Ward Member also spoke during the occasion.

Sri. S. Sarma MLA, inaugurating the workshop; Sri. Jude Pulikkan, President, Njarakkal Grama Panchayat, Prof.( Dr). B Madhusoodhana Kurup, Vice Chancellor, KUFOS, Prof.(Dr.) M.S. Raju, Director School of Management and Entrepreneurship, Dr. K.S. Purushan, Prof. of Eminence were present.

## Fisheries Station, Puduveyypu

Fisheries Station, Puduveyypu was established in 1979 under Kerala Agricultural University and was brought under KUFOS in 2011. There are 26 staff members in the Station including 9 project personnel. The major mandates of the Station include the research and extension activities in the brackish water and marine aquaculture sector. A new job oriented Diploma Course named "Diploma in Brackishwater and Marine Aquaculture-DBMA" was started at Fisheries Station in 2013 with the duration of one year. Having been located at the southern tip of Vypin Island on the banks of Arabian Sea surrounded by dense patches of various species of mangroves, the Station has rich biodiversity and very special dynamic ecosystem. The most renowned brackish water food fishes of India like Grey Mullet, Milk fish, Asian Sea bass, Pearl spot, Indian white shrimp, Black tiger shrimp etc. are abundantly available in the area. Fisheries Station provides the seeds of cultivable fishes to the framing community since its inception. The fishes are farmed sustainably in the ponds of the Station. At present, there are four projects operated in the Station out of which two are Externally Aided Projects and two are Plan projects. First *Litopenaeus vannamei* farming trial in Kerala was undertaken at the Station with the support of Government of Kerala, CIBA, MPEDA in 2015. A hatchery exclusively for the production of Vannamei seed has been approved by the Coastal Aquaculture Authority and the first production cycle will be started in January 2016. All these facilities make the Station an excellent training centre for the student and farming communities. The Station has 20 acres of mangrove vegetation which offer enormous learning opportunities to the students, scholars, scientists and public.

### Research Centres of Fisheries Station

Mangrove Research Centre

### Academic Programmes

DBMA : Diploma in Brackishwater and Marine Aquaculture

PGDIA: Post Graduate Diploma in Industrial Aquaculture

### Research Projects (Externally aided projects)

PI	Establishment of Production cum Training Centre for Ornamental fish and shell fishes at Fisheries Station, Puduveyypu.	2013	96.3 lakhs	Centre for Marine Living Resources and Ecology, Ministry of Earth Sciences, Government of India.
PI	Establishment of an Ornamental fish culture unit at Pokalappara, Trichur for improving the livelihood of tribal community.	2012	8.78 lakhs	NABARD
PI	Improving the tribal livelihood of Western Ghats through ornamental fish culture.	2012	11 lakhs	Western Ghat Cell, Govt. of Kerala
PI	Establishment of a Mangrove Research Centre	2012	30 lakhs	Government of Kerala (Plan Project)
PI	Exploratory studies on alternative live feeds for larval rearing of commercially important fin and shell fishes	2012	1.3 lakhs	KUFOS Assisted Research Project

### Staff

Dr. K. Dinesh, Associate Professor & Station Head

### Achievements

First trial culture of Vannamei was successfully completed. Trained more than 600 farmers in various aquaculture and ecosystem oriented subjects. A new hatchery was established for Vannamei seed production first time in Kerala.

### Extension

During the period of 2011 to 2015 the Fisheries Station organized 15 training programmes on Best Management Practices of Brackish water Aquaculture (funded by NFDB through Department of Fisheries, Trichur), Ecological benefits of Mangroves, Family Agriculture, Marine Ornamental fish culture, Culture of *Litopenaeus vannamei* etc for the farming and academic fraternities.

### Facilities

Mangrove Nursery

Vannamei farm

Vannamei hatchery

Activities/Events

### Publications (2011-2015)

Knowledge Level of Brackish water Shrimp Farmers (2011)	Research Paper	J. Extension Education, 23 (2): 4616-4620.	0971-3123
Rediscovery of <i>Caridina carli</i> J. Roux, 1931 (Decapoda: Aatyidae) after a time gap of 80 years from Kerala waters.(2013)	Research Paper	J.Aquat.Biol.Fish., Vol.1 (1&2: 117-122)	--
Adoption of improved practices in freshwater fish farming (2013)	Research Paper	Fishery Technology, 50(2): 191-195.	0015-3001
Preferential indices of tribal fisher folk on selected attributes of indigenous fishes in three colonies existing on the banks of River Chalakudy, Kerala (2014)	Research Paper	J. Extension Education, Vol. 26 (3). (Accepted)	0971-3123
Heat penetration characteristics and shelf life of ready to serve Mahseer curry in opaque retortable pouches (2011)	Research Paper	Fishery Technology, 48(2): 141-148	0015-3001

# School of Aquaculture and Biotechnology



**Dr. Shyama S.**

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## Educational Qualification

M.F.Sc. College of Fisheries, Mangalore, University of Agricultural Sciences, Bangalore

Ph.D. College of Fisheries, Mangalore, University of Agricultural Sciences, Bangalore

## Professional Experience:

20 years of experience in teaching, research and extension in all relevant aspects of aquaculture including fresh water and brackish water aquaculture, farming systems, sustainable aquaculture practices, aquaculture nutrition, seed production and eco-friendly aquaculture. Conducted several training programmes in ecofriendly aquaculture, ornamental fish culture, freshwater prawn farming and aquafeeds.

## Membership in Professional Organisations

Member, Asian Fisheries Society  
Society of Fishery Technologists, India  
Professional Fisheries Graduates Forum



**Dr. Devika Pillai**

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Dept. of Aquatic Animal Health  
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## Academic Qualifications

M.F.Sc. College of Fisheries, Mangalore, University of Agricultural Sciences, Bangalore

Ph.D. University of Delhi, Delhi (Work done at the National Institution of Immunology, New Delhi).

Post doc. DBT Short term Advanced research training in biotechnology at University of Montpellier, France.

## Professional Experience:

20 years of experience in Aquatic Animal Health, Aquaculture and Biotechnology. Several publications in international and peer reviewed national journals. Served as Chairperson, Board of Examinations for MSc in Aquaculture and Fisheries Microbiology, Calicut University and MSc in Aquatic Biology and Fisheries, Kerala University. Member, Panel of Examiners for Colleges of Fisheries, Mangalore, Thoothukudi, Nellore and Orissa. Conduct awareness and training programmes for farmers in scientific health management in fish/shrimp culture. Work in close association with the fisheries department to promote best management practices in aquaculture.


**Dr. K. Dinesh**

Associate Professor &  
Head, Fisheries Station,  
Puduvype

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**Academic Qualifications :**

M.F.Sc. Aquaculture from College of Fisheries, Panangad.

Ph.D. Fisheries Science from Mahatma Gandhi University, Kottayam.

**Professional Experience**

Dr. K. Dinesh has a professional experience of more than 17 years including teaching experience of more than 13 years in College of Fisheries and KUFOS. He has been associated with the Fishermen community, Scheduled Tribes, Aquaculture farmers and the public since two decades for their upliftment through various Governmental projects. He is also the Senate Member and Academic Council Member of KUFOS. He also served as the Academic Council Member of Kerala Agricultural University from 2006 to 2009. He is a member of World Aquaculture Society (WAS) and a volunteer of Aquaculture without Frontiers (AwF), a global charity working for the upliftment of the rural communities of developing nations through aquaculture.

Having been visited more than 7 countries abroad on various missions, he networked and made strong academic ties with many Universities and other educational - research organizations. He was instrumental in implementing the first *Litopenaeus vannamei* farming in Kerala carried out by KUFOS at its Regional Research Station at Puduvaypu which attracted the attention of academic and business fraternities of Kerala and other States.


**Dr. Swapna P. Antony**

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**Academic qualifications**

M.Sc. Marine Biology (2004)

(Cochin University of Science and Technology, Kochi, India)

Ph.D. Marine Biotechnology (CUSAT 2012)

**Professional Experience**

Her Doctoral research was focused on molecular characterization and gene expression profiling of antimicrobial peptides in penaeid shrimps. Availled UGC-Kothari Post-Doctoral Fellow at National Centre for Aquatic Animal Health, encompassed heterologous expression of vitellogenin subunit of *P. monodon* for developing monoclonal antibodies and ELISA kit. After that she joined the National Centre for Aquatic Animal Health, CUSAT as DST-INSPIRE Faculty in 2013. Presently she is working as Assistant Professor in Fish Pathology at the Dept. of Aquatic Animal Health Management, Kerala University of Fisheries and Ocean Studies. Her research interests are in the areas of fish and shellfish immunology, proteomics and metagenomics. Her current research is focused on the phylogenetic and functional characterization of marine viruses using metagenomic approach. She has 25 publications in peer reviewed international journals and 60 GenBank Accessions.



**Dr. Linoy Libini, C.**

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**Academic qualifications**

M. Sc Coastal Aquaculture

M. Phil. Coastal Aquaculture

Ph D. Marine Biology

**Professional Experience**

After successful completion of doctoral programme he joined as a benthic ecologist in a UNCC funded research programme, "Oceanographic Survey in Support of the Marine Coastal Damage Assessment (OSDA)" to study the impact of 1991 Gulf war oil spill at King Fahd University of Petroleum and Minerals, Kingdom of Saudi Arabia. He has got seven years of research experience in the field of benthic diversity, distribution and their ecological significance in environmental impact assessment. Joined Central Marine Fisheries Research Institute, as Project Scientist and Team Leader in the Ministry of Earth Sciences (MoES) sponsored projects. The important achievements were the open sea farming and hatchery protocols for blacklip pearl oysters and mabe / half pearl and round pearl production from these oysters. He got almost ten years of experience in the field of aquaculture. Apart from these He has been worked for various research projects and participated in quite a lot of oceanographic cruises in Bay of Bengal, Arabian Gulf and Andaman Sea and analyzed samples from various habitats of coastal and offshore. During his research carrier, he has been conducted training and capacity building programme on marine/coastal biodiversity as well as aquaculture and also been attended and presented papers in national and international symposia and workshops. He has 23 publications including research papers, book chapters, and popular articles. He is working as an Assistant Professor (Aquaculture) in School of Aquaculture & Biotechnology, Kerala University of Fisheries & Ocean Studies since August 2015.



**Dr. Chiranjiv Pradhan**

Assistant Professor

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**Academic qualifications**

M.Sc. Fisheries and Aquaculture, Utkal University

Ph.D. Fisheries Science, Utkal University

**Professional Experience**

10 years of research experience in the field of Aquaculture and Fish nutrition. He was associated with Central Institute of Freshwater Aquaculture, Bhubaneswar for 8 years and worked in an International Research Project. He also worked as Scientist C in National Institute of Nutrition, Hyderabad in the aspect of child nutrition. Area of interest is non-conventional feed ingredients for fish and fatty acid metabolism. He is a life member of Society of Aquaculturist, Bhubaneswar.



**Dr. Rejish Kumar V. J.**

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### Academic qualifications

M.Sc. Marine Biology, Cochin University of Science and Technology (2000)

PhD . Marine Biotechnology, Cochin University of Science and Technology (2009)

### Professional Experience

He worked with National Centre for Aquatic Animal Health, Cochin University of Science and Technology, where he worked on various aspects of recirculating aquaculture systems (RAS) and on marine biotechnology for his PhD degree on 'Nitrifying Bioreactors Integrated into Shrimp and Prawn Hatchery Systems'. The doctoral research paved way for the commercialization of the two patented nitrifying Bioreactors. After PhD, he joined Yeungnam University, South Korea for postdoctoral research on the development of various probiotic bacteria for animal and human application. Upon awarding the JSPS fellowship he moved to Tokyo University of Pharmacy and Life Sciences, Japan; where he worked on chemical and microbial analyses of the simulated hydrothermal vent system and the development of a mathematical model. He participated in Southern Mariana Trough cruise for collecting hydrothermal vent samples, conducted by Japan Agency for Marine Earth Science and Technology (JAMSTEC), Japan. After completing 3 years research life in Japan in 2014, he joined National Institute of Oceanography (NIO), CSIR, Goa as Principal Investigator of the Project "Metagenomic and metatranscriptomic analyses of microbial communities involved in nitrogen biogeochemical cycling in the oxygen minimum zone of the Arabian Sea' under SERB, DST Young Scientist Scheme.



**Dr. Mithun Sukumaran**

Assistant Professor

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### Academic Qualifications

M.Sc. Aquatic Biology & Fisheries, University of Kerala

Ph.D. Aquaculture, Universiti Malaysia Terengganu

### Professional Experience

Worked for two years as Lecturer in Universiti Malaysia Terengganu, Malaysia conducting research on aquaculture, thrust on cage culturing of tilapia and *Pangasius* sp., and water quality monitoring systems. Research on taxonomy was also a key interest and was a principal researcher for one national project funded by Ministry of Education. Several other university research funds were gathered on probiotics, taxonomy, etc.

Worked as a scientist at Temasek Polytechnic, Singapore for three years, the research was mainly on mud crab, teaching various aquaculture subjects for part time diploma course and also worked very closely with farmers on improving the husbandry practices of cage culture on pompano, grouper, seabass, snapper, etc. several research grants were gathered on mud crab breeding, breeding of ornamental fishes, protein energy ratio for ornamental fishes, etc.



**Dr. Binu Varghese**  
Assistant Professor

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### Academic Qualifications

M.F.Sc. (Mariculture) ,Central Institute of Fisheries Education 1999

Ph.D. Fish & Fisheries Science (Fish Nutrition), Central Institute of Fisheries Education 2005

### Professional Experience

Post graduate in Mariculture and did doctoral research on “Nutritional studies on sebae anemone fish, *Amphiprionsebae* with special reference to protein and lipid requirements”. This is the pioneering work in the field of marine ornamental fish nutrition and it covered all the life stages of clownfish. Worked with a private firm in establishing a marine ornamental fish and sea cucumber hatchery in islands of Lakshadweep. Pilot scale production of native clownfish, *Amphiprionnigripes* was done successfully in the backyard hatchery facility.

For the past eight years (2007 -2015) worked with the Marine Products Export Development Authority (MPEDA), Kochi initially as State co-ordinator and later as Programme Manager in implementing the ornamental fish development activities. Instrumental in establishing more than 200 ornamental fish breeding units with a financial outlay in excess of 20 crores. Acted as local competent authority in issuing health certificates for ornamental fish export. In-charge of Ornamental Fish Training Centre of Kerala and organised many training programmes, orientation programmes, awareness programmes, seminars, workshops etc. Officiated in the organizing committees of many national and international aqua shows, exhibitions and seminars. Coordinated consultancy programmes for the mass production of ornamental fishes in association with experts from Israel, Germany and Australia.

# School of Fisheries Resource Management



## **Dr. T. V. Anna Mercy**

Professor

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Faculty of Fisheries

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### **Academic Qualifications**

M.Sc. Marine Biology

Ph. D. Aquatic Biology and Fisheries

### **Professional Experience:**

Prof. Annamercy has 27 years of experience in teaching, research and extension works. She is instrumental in developing ornamental fish rearing and training facility in KUFOS and many of the people trained in the centre are running ornamental fish farms. She developed the centre to hub for women empowerment through developing rural employment opportunities. Dr. Mercy served as principal investigator of external aided projects and published more than 75 scientific articles. She authored 4 books and prepared 6 training manuals on various aspects of ornamental fishes and fisheries. Four students obtained Ph.D. under her research guidance and she developed methods for the breeding of about a dozen of indigenous fishes of Western Ghats. She is recipient of many awards including Aquarium World Excellence Award in the category of Best Scientist 2011 and obtained several fellowships from International agencies and Universities. She actively engaged in extension activities of KUFOS by involve in radio and TV programmes on Fisheries.



## **Dr. J. Rajasekharan Nair**

Director

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Environment i/c

Phone No.: 0484 2236523 (R)

### **Academic Qualifications**

MSc. (Marine Biology – CUSAT)

Ph.D. (Aquatic Biology and Fisheries – University of Kerala)

Certificate Course in Japanese (Osaka University, Japan)

### **Professional Experience:**

Dr. Rajasekharan Nair has 29 years of teaching and research experience in fishery biology and fisheries resource management at the College of Fisheries, Kerala Agricultural University and subsequently at the Kerala University of Fisheries and Ocean Studies. During his service, Dr. Nair has received several prestigious scholarships including the Monbusho Scholarship from the Japan Government, and the Best Teacher Award from the Professional Fisheries Graduates Forum, Mumbai. He has published around 37 peer reviewed papers and has presented 30 papers at National and International Seminars and Symposia.



**Dr. S. Suresh Kumar**

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**Academic Qualifications**

MSc (Marine Biology) , MSc (Bioinformatics), PhD (Marine Biology)

**Professional Experience:**

The primary objective of his research is aimed at understanding the factors that naturally influence the primary productivity and related ocean processes of coastal sea of the West Coast of India. The variation in primary productivity with respect to the changing climatic patterns persistent in the region is the focus of research. Further attempts are ongoing to understand the nutrient fluxes, consumer community structure and physico-chemical factors that contribute to the productivity in this region of upwelling.

The diversity, habitat selectivity and interaction of reef community in the coral reef systems of the Lakshadweep archipelago is another area of his interest. His work also spans to freshwater ecosystems, including studies on the diversity of microalgae, aquatic macrophyte, periphytic organisms, fishes and their interactions. He is also interested in the functional annotation and developing structure activity relationship of molecules of marine origin especially small peptide toxins for drug development.



**Dr. B. Manoj Kumar**

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**Academic Qualifications**

MFSc from College of Fisheries, Managalore, University of Agricultural Sciences, Bangalore

PhD from College of Fisheries, Managalore, University of Agricultural Sciences, Bangalore

**Professional Experience:**

Dr. Manoj Kumar joined Indian Council of Agricultural Research as a Scientist in 1993 and worked in the Central Institute of Fisheries Technology and Central Marine Fisheries Research Institute. He joined in the College of Fisheries, Kerala Agricultural University as Assistant Professor in 1999. He held the position of Head, Department of Fishing Technology from 2000 to 2015 in the College of Fisheries Panangad and the Kerala University of Fisheries and Ocean Studies (KUFOS). He served as a member of various committees including the high power committee constituted by the Kerala State Government in 2002 to look into various aspects of monsoon trawl ban in the coast of Kerala. He is a recognised PhD guide with Mahatma Gandhi University, Kottayam. He served as Chairman of the committee for selecting the Best Fisheries Graduate of India (BFGI) during the period during 2009-10 to 2010-11. Currently a member of the executive committee of the Society of Fishery Technologist (India), Cochin. He also served as campus Officer from April 2009 to 2013 and in charge of overall development campus of the College of Fisheries, Panangad and latter KUFOS. Teaching and research expertise include in the fields of Fishing Technology, Gear Technology, Gelationus Zooplankton and Aquaculture Technology. More than a dozen research papers published in various journals.


**N. N. RAMAN**

Director i/c

School of Fishery Environment

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**Academic Qualifications**

M.Sc. in Meteorology from Cochin University of Science and Technology

**Professional Experience:**

35 years of experience in teaching at the undergraduate and post-graduate level. Working from November 1980 onwards in the Kerala Agricultural University and then in the Kerala University of Fisheries and Ocean Studies in different designations as Junior Assistant Professor, Assistant Professor and Associate Professor. Presently functioning as the Head, Department of Fishery Hydrography from May, 2007 onwards and the Director i/c., School of Fishery Environment from 2012 onwards.

Member in the Senate, Governing Council and Academic Council of the KUFOS. I am a member in the Boards of Studies of the Dept. of Fishery Hydrography and Dept. of Coastal Zone Management.


**Dr Ranjeet K**

Associate Professor

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**Academic Qualifications**

M.Sc. Marine Biology, Cochin University of Science and Technology, 1997

Ph.D Marine Sciences, Cochin University of Science and Technology, 2002 Postdoc Wageningen University, 2002-2003

**Professional Experience:**

Worked as Fishery Biologist at King Fahd University of Petroleum and Minerals, Saudi Arabia for United Nations Compensation Committee project on Impact of Oil spill following Gulf war in Saudi Arabian Gulf. Experienced in environmental impact assessment studies and developing mitigation strategies for conservation of marine and freshwater ecosystems. Knowledge empowerment of farmers through Internet portal based e-extension services on matters related to farming and trade in the field of aquaculture and fisheries. Has successfully completed independent projects on subjects related to impact of climate change on distribution of fish fauna, temporal and spatial pattern of distribution of ichthyofauna of commercial important fishes, and utilization of trawl by-catch in ornamental fish industry. Has seven years of PG level teaching experience in subjects related to Fisheries, Aquaculture and Biological Oceanography. Has taken part in many research and field based study of the fishery, stock assessment, bionomics and biology of fishes and crustaceans. Sea going experience in Research vessels as well as Commercial Trawlers in Indian Exclusive Economic Zones (EEZ) as well as Arabian Gulf. PhD Guide in Calicut University and Kerala University of Fisheries and Ocean Studies and four students are presently pursuing their PhD programme. Published 39 papers in journals and symposium proceedings, seven reports, two newsletters and has three genbank submissions.



**Dr. M K Sajeevan**

Associate professor

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### Academic Qualifications

M.F.Sc. Fishery Biology, Kerala Agricultural University

Ph.D. in Marine Science, CUSAT

### Professional Experience:

Teaching/ Research : 23 years

Overseas Experience: Served as a Member, Bay of Bengal Large Marine Ecosystem- Hilsa fisheries assessment working group, Thailand

Served as a member of Indian Ocean Tuna Commission( IOTC) Bill fish working group

Attended international training on Fisheries data collection and analysis at Wageningen International, Wageningen University, the Netherlands with NUFIC fellowship.

Attended fish stock assessment, population dynamics, population models, fishery management at BOBLME, Bangkok, Thailand.

Visited Netherlands, Belgium, Bangladesh, Myanmar, Thailand, La Reunion (France)



**Dr. Rajeev Raghavan**

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(Fish Taxonomy)

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### Academic Qualifications

MSc. (Aquaculture – University of Madras)

Ph.D. (Fish Ecophysiology – Chinese Academy of Sciences)

Postdoc (University of Hasselt, Belgium & Chinese Academy of Sciences, China)

### Professional Experience:

Research over the last thirteen years has focused on generating information and developing methods to support conservation decision-making in tropical freshwater ecosystems. Major research themes include taxonomy, conservation assessments, and small-scale inland fisheries. Much of the work is carried out in the Western Ghats of India, an exceptional region of freshwater fish diversity and endemism, from where he has described eight new species, one new genus and a unique family of freshwater fish to science.

Closely involved with the International Union for Conservation of Nature (IUCN), for whom he works in multiple roles including 1) South Asia Co-Chair of the Freshwater Fish Specialist Group (FFSG); 2) Freshwater Representative on the Red List Committee (RLC), 3) Coordinator of the Freshwater Fish Red List Authority (RLA) for South, South East, Far East Asia and Oceania; and 4) member of the SSC-WPCA Joint Task Force on Biodiversity and Protected Areas.

He has more than 100 publications in the primary literature including papers in leading fisheries and conservation journals, chapters in books and special publications by international conservation organizations (>600 citations and *h* index of 13).



**Anvar Ali P. H.**

Assistant Professor  
(Fishery Biology)

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### Academic Qualifications

M.Sc. Industrial Fisheries  
(Cochin University of Science and Technology, 2003)

### Professional Experience

As a fishery biologist, Anvar Ali has made significant contributions to the taxonomy and biology of freshwater fishes of South Asia through the discovery and description of five new fish species and one new genus of freshwater fish to science; assessing the extinction risk of over 100 species of Indian freshwater fishes for the IUCN Red List of Threatened Species, and generating the first information on the biology and population dynamics of several native freshwater fishes of peninsular India. Prior to joining KUFOS, Anvar worked with the Kerala State Fisheries Department as an Extension Officer for seven years.

Anvar's area of research interest include systematics, biology and biogeography of freshwater, estuarine and marine fishes of peninsular India and has published more than 60 papers in peer-reviewed journals and popular articles in various scientific and educational magazines. Currently, he is the Principal Investigator of two projects running in KUFOS - Professor Alikunhi Chair for Sustainable Aquaculture Systems and the Centre for Germplasm Conservation of Aquatic Animals.



**Dr. Prabhakarn M. P.**

Assistant Professor

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KUFOS, Panangad

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### Academic Qualifications:

MSc Marine Biology, School of Marine Sciences, Cochin University of Science and Technology

PhD in Marine Biology, Cochin University of Science and Technology

Post-Doctoral Research Associate (CSIR)

### Professional Experience

Served as Lecturer (ad-Hoc) in the Department of Aquaculture, Sacred Heart College, Thevara for two years. After this, post-doctoral research work was carried out with CSIR Fellowship at School of Marine Sciences, CUSAT for three years in the ecosystem modelling of mangroves. Joined at Kerala University of Fisheries and Ocean Studies as Assistant Professor (on contract) in 2013 in the Department of Biological Oceanography. In May, 2015, he joined in the Department of Fishery Hydrography as Assistant Professor in Fisheries Oceanography. He has a total of 21 publications, including research articles in international and national journals and 5 book chapters.

Area of research include assessment of marine biodiversity, seagrass ecosystems, marine ecosystem dynamics and ocean processes.



**Dr.S.M.Raffi**

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#### Academic Qualifications:

M.Sc. Marine Biology & Oceanography, 1998, CAS in Marine Biology, Annamalai University

M.Phil. Marine Biology, 2000, CAS in Marine Biology, Annamalai University

Ph. D. Marine Biology, 2003, CAS in Marine Biology, Annamalai University

#### Professional Experience

Previously, served as Assistant Professor in Centre of Advanced study in Marine Biology, Annamalai University, Tamilnadu from 5<sup>th</sup> November 2003 and is having more than 12 years of teaching experience in Post graduate level. Produced 5 Ph.Ds degrees and 8 M.Phil degrees under his research guidance. Edited/ published 5 monographs/books, produced more than 45 research papers in peer reviewed national and international journals and 5 Genbank submissions. Served as Organising Secretary and in various capacities in 8 conference/Seminar/Training courses and chaired as Resource Person as well as Chairperson in various international and national conferences. Involved in free consultancy service for Aqua-farmers in Cuddalore & Nagapattinam districts, Tamilnadu continuously for the past 14 years as part of extension activities of Annamalai University. Successfully completed two research projects as Principal Investigator funded by Department of Biotechnology (DBT), Govt. Ministry of Environment & Forests (MoEn &F), Govt. of India (No.22-9/2008-CS- I) each with a tune of 28 lakhs, besides successfully completed several consultancy and EIA projects. Serving as Assistant Warden – Men's Hostel, KUFOS from July 2016 onwards and Convener- Campus Development Committee from September 2106 onwards.



**Dr. Jayalakshmi K. J.**

Assistant Professor  
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#### Academic Qualifications

M. Sc Aquaculture & Fishery Biology, M. G. University

Ph D Marine Science, CUSAT

#### Professional Experience:

She is interested in studying the patterns in the fisheries ecology, especially on dynamic of plankton and its impact on fisheries. Meroplankton component, ie., the larval community of commercially important crustaceans especially penaeid shrimps is the thrust area of my research. Research on zooplankton ecology-higher taxa level (physico-chemical and biological aspects) in the marine as well as coastal waters and the response to various physico-chemical processes and the systematic and biology of marine prawns particularly from the commercial landings are the other areas of interest.

#### Previous Positions /Affiliations

Project Scientist D, Centre for Marine Living Resources and Ecology (2012-2015)

Project Scientist B, Centre for Marine Living Resources and Ecology (2008-2012)



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 (Chemical Oceanography)  
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#### Academic Qualifications

M. Sc Hydrochemistry, Department of Chemical Oceanography, CUSAT, 1998.

Ph D in Chemical oceanography, Department of Chemical Oceanography, CUSAT, 2004.

#### Professional Experience:

She joined as an Assistant Professor in Chemistry in St Tereasa's College, Ernakulam in 2005 and continued till 2015, May. Later she joined as an Assistant Professor in Chemical Oceanography in KUFOS in May 2015. She has received Department of Science and Technology, Government of India, Young Women Scientists Fellowship in 2006 and Department of Science and Technology, Government of India, Fast Track Scheme for Young Scientists in 2012.

She is a Commonwealth Fellow (British Council) in 2012 and did research at National Oceanography Centre, University of Southampton, UK and participated in Indian Arctic Expedition – twice – 2014 and 2016. She is handling three major research projects funded by DST, UGC and KSCSTE. She has 30 Publications in International peer reviewed journals and has authored three Books. Currently guiding several students for Ph D Programme.

Her research focus is on Coral Reefs of Lakshadweep Archipelago - coral bleaching and chemical factors, Marine Biogeochemistry, Polar research, Carbon cycle, Marine Nanotechnology, bioactive compounds from marine environment and biomarkers of paleoclimatic utility – estuarine and deep ocean environments.



**Dr . Pramila S.**  
 Assitant Professor  
 (Fishery Biology)  
 School of Fisheries resource  
 Management  
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#### Academic Qualifications

M.F.Sc. Mariculture, Central Institute of Fisheries Education, Mumbai

Ph.D Fisheries Science (Mariculture), Central Institute of Fisheries Education, Mumbai

#### Professional Experience:

At the post graduation level and for Ph. D., the field of specialisation was Pathology of fish and shell fish. Well versed in techniques of bacteriology, water chemistry, fish pathology, biochemical studies in fish pathology, chemotherapy and immunization of fish and maintenance of marine aquaria. Pioneering work in Indian on diseases of marine ornamental fishes with special emphasis on bacterial diseases was carried out for Ph. D. thesis.

Area of interest :Mariculture, Marine Fisheries management, conservation, Biodiversity, Marine Bio active compounds, Marine Ornamental fish, Fish disease management, Microbiology, Climate change, Ocean acidification

# School of Aquatic Food Products and Technology



**Dr Abhilash Sasidharan**

Assistant Professor  
(Fish Processing)

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## Academic Qualifications

M.Sc. Industrial Fisheries, Cochin University of Science and Technology 2003.

Ph.D. Marine Sciences, Cochin University of Science and Technology 2014.

## Professional Experience

Started career as a Senior Research Fellow at Central Institute of Fisheries Technology, ICAR Cochin in the DST Project on “State-of-the-art fisheries post harvest technologies” and later in the ICAR-ADHOC Project on “Suitability of indigenous polymer coated Tin Free Steel cans in canning of fish and fish products”. Served as a Junior Research Fellow in CMLRE Project on ‘Assessment of myctophid resources in the Arabian Sea and development of harvest and post harvest technology’ and as Research Associate in ICAR Project ‘Zonal Technology Management Centre’ at CIFT. Received Young Scientist Fellowship from DST and joined as a Principal Investigator at School of Industrial Fisheries, CUSAT under the project on “Fish waste management and its socio environmental impact assessment in Cochin Corporation and Aroor Industrial Area” and simultaneously completed the PhD on the topic “Studies on Fish Waste Management Practices in Aroor Seafood Industrial Belt, Kerala and conversion of seafood waste into a liquid plant growth supplement”. Served tenure as the Director of the co invented firm Green Allies Organics Pvt. Ltd, Cochin dealing with organic liquid fertilisers developed from seafood waste. Worked as Thematic Expert (Fisheries)/State Coordinator, Kerala at Reliance Foundation. Joined KUFOS as Assistant Professor in Fish Processing Technology on August 2015.



**Dr. Blossom K.L**

Assistant Professor  
(Food Science)

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## Academic Qualifications

M.Sc. Home Science (Food & Nutrition) from Mahatma Gandhi University

Ph.D. (Food Science & Nutrition) from Kerala Agricultural University,

## Professional Experience

Worked as Dietician cum tutor (B.Sc.& Post Basic Nursing) in West Fort Hospital, Thrissur. Also worked as Dietician cum tutor (PG Diploma in Nutrition& Dietetics) in M.O.S.C. Medical College Hospital, Kolenchery. One month Dietetic internship in Kovai Medical Centre &Hospital, Coimbatore. Worked as Project Fellow at Krishi Vigyan Kendra, Thrissur, Kerala Agricultural University. Joined KUFOS as Assistant Professor in Food Science & Nutrition in May 2015.



**Dr. E. P. Preetham**

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(Biochemistry)

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### Academic Qualifications

M.Sc. Biochemistry, (1998), University of Madras, Tamilnadu, India.

Ph.D. in Natural Science (Biochemistry & Immunology), University of Regensburg, Germany.

### Professional Experience

Worked as Lecturer at King Nandivarman College of Science, affiliated to University of Madras, Tamilnadu, India. Lecturer at Adhiparasakthi College of Science, affiliated to University of Madras, Tamilnadu, India. Tutor at Technolab, Institute for Research and Technology, Tamil Nadu, India. Research Assistant "Brain vasopressin is an important regulator of maternal behaviour in mice" in the Molecular Neurobiology Group of Prof. Dr. Inga Neumann, Regensburg, Germany. Did PhD in "Biochemical characterization of mouse ficolin-B" under the guidance of Prof. Daniela N. Mannel at the Institute for Immunology, Regensburg University, Germany. Post-doc in Biochemistry and Molecular Biology, University Of Wurzburg, Germany, Assistant professor (Guest faculty) at KNC college, affiliated to Madras university, Thellar, Tamilnadu. Joined as Assistant Professor in Biochemistry at KUFOS in May 2015.



**Dr. Safeena, M.P**

Assistant Professor  
(Microbiology)

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### Academic Qualifications

Ph.D. Fishery Microbiology. College of Fisheries, Mangalore, Karnataka, India.

M.F.Sc. 2008 College of Fisheries, Mangalore, Karnataka, India

### Professional Experience

She was selected for M.F.Sc based on a national level entrance test in which she secured 3rd rank and her outstanding performance led to her being awarded the "Junior Research Fellowship" by the Indian Council of Agricultural Research. She is the recipient of University Gold Medal, Prof. H.P.C Shetty Gold Medal and Prof. Tauro Gold Medal for outstanding performance in M.F.Sc. She carried out research on the topic "Molecular studies on Hepatopancreatic Parvovirus (HPV)" for her M.F.Sc in the Dept. of Fishery Microbiology, College of Fisheries Mangalore. She could generate the complete nucleotide sequence of the Indian strain of Penaeus monodon Densovirus (PmDNV). She continued her doctoral studies in the Department of Fishery Microbiology and was awarded a Senior Research Fellowship in an Indo-Australian project entitled "RNA Interference (RNAi) as an antiviral mechanism against Hepatopancreatic parvovirus (HPV)" funded by DBT. Under the project she went to James Cook University in Australia for three months to carry out collaborative research. She has developed monoclonal antibodies against HPV for their rapid detection and also developed recombinant protein vaccines to control HPV in shrimp. Her research has resulted in her publishing six scientific papers in International Journals of high impact factor.

# School of Management and Entrepreneurship



**Dr. M.S. Raju,**  
Professor & Director  
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## Academic Qualifications

M A Economics, University of Kerala

MPhil and Ph.D. (Applied Economics) from Cochin University of Science and Technology

## Professional Experience

He has more than 29 years of teaching/research/extension service together in Kerala Agriculture University and KUFOS. He has served in various capacities in KUFOS as Finance Officer and Enquiry Officer, Head of Department of Management Studies and Director-in-Charge of School of Management and Entrepreneurship. He engaged in teaching Economics, Fisheries Economics, Project Planning and Management, Aquaculture Economics, Economics of Fisheries Management, Research Methodology and related topics at undergraduate, postgraduate and Ph.D. levels. He also participated in the Kerala State Planning Board Programmes in various capacities such as Appraiser of Local-self government's Plans, District Level Technical Advisory Group (DLTAG) member, State Technical Advisory Group (STAG) member, Trainer's trainer, Extension Faculty Member of KILA, and Member of many Govt. Committees. He was awarded the K.C. S. Endowment Award 2003 for the Best Paper Published in Leading Journals, instituted by the Alumni of Department of Applied Economics, Cochin University of Science & Technology. Also, he received the Best Teacher award 2007 instituted by the Professional Fisheries Graduated Forum (PFGF), Mumbai and the Best Teacher Award 2008 of the Student's Union, College of Fisheries, KAU.



**Dr. V. AMBILIKUMAR**  
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## Educational Qualifications

M.Com., MBA and Ph.D.

## Professional Experience

He has teaching and research experience of nearly 24 years and interested in teaching subjects viz., Financial Management, Financial Accounting, Cost Accounting, Management Accounting, Project Management, Business Administration and Fisheries Administration & Legislation. He has completed three external aided projects and authored 35 research articles in national and international journals. He is also external expert for Ph.D., M.Phil., M.Com. and MBA programmes of Universities such as VIT, Chennai, M.S. University, Tamil Nadu, Cochin University of Science and Technology, University of Kerala, Thiruvananthapuram and Kerala Agricultural University. He is a member of Indian Accounting Association, Board of Studies in Commerce, Academic Council and Senate of the Cochin University of Science and Technology.



**Dr. Mathew K.M.**

Professor (Commerce)

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### Academic Qualifications

M.Com., M.Phil., Ph.D.

### Professional Experience

Dr. Mathew was in-charge of the Head of the Dept. of Legal Studies, KUFOS. He has joined in the post of Assistant Professor at the College of Fisheries, KAU, Panangad, Kochi on 23.09.1986 and superannuated as Professor & Head of Department on 23.10.2014. In all, he has 36 years of teaching and research experience. He was a member of the first Governing Council of KUFOS. He has served as Subject Expert in various universities for the Ph.D programme in Commerce and Management studies. He has undergone training in International Leadership and Communication at Hawaii, USA. Dr. Mathew has obtained the prestigious Air India Malayala Manorama Award for Excellence in teaching in 2004. He has played many a leadership role in KUFOS as Member of the Governing Council and several other bodies. He has also worked as a Trainer in leadership, personality development and communication. An editor and translator, he has 5 books and 20 articles to his credit. He was also a Technical Official at Commonwealth Games New Delhi, 2010.



**Smt. Susy V. John**

Associate Professor

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### Academic Qualifications

Master of Physical Education. Lakshmibai National College of Physical Education, Gwalior. Certificate Course in Table Tennis, Patiala

### Professional Experience

National Player in Shuttle Badminton, Played with Praksh Pudukone in Mixed Doubles at Gharkpur Nationals in 1974. All India inter-University Champion in 1968-69, 1969-70. Kerala Veteran Women Champion in 1999-2000. State Umpire in Shuttle Badminton. Member of combined University Shuttle Badminton, 1973-1974. Acted as Lady Team Manager of Kerala Agricultural University team in various All India Inter Agricultural University Meet. Attended refresher Courses, Seminars in the field of Physical Education and Sports Medicine. Joined K.A.U Head quarts in August 1978. Joined Fisheries College in 1992. Retired from Kerala University of Fisheries and ocean studies in September 2012, completing a period of 34 years in service.



**Prof. (Dr.) K.S. Purushan**

Professor of Eminence

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### Academic Qualifications

M.Sc., Ph.D., FZSI

### Professional Experience

Prof. (Dr.) K.S. Purushan is appointed as Professor of eminence for the 'Chair for Socio-economic Empowerment of Fisherfolk and archiving traditional knowledge of fishermen' in the Kerala University of Fisheries and Ocean Studies (KUFOS), Kochi. He was formerly Dean, College of Fisheries, Kochi, Kerala Agricultural University (KAU) and was the Head of Fisheries Research Station (KAU), Puduveypu for about 23 years. He started his career in the National Institute of Oceanography (NIO) and completed 38 years of service in the field of fisheries research, extension and education. Prof. Purushan was holding several key positions in scientific, planning and administrative committees in the Universities, Research and Development wings of state and central governments and cultural & scientific bodies viz., Member, Academic Council, Kerala Agricultural University; FROV Sagar Sampada Research Advisory Committee, Govt. of India; Board of Studies of Faculty of Fisheries, Kerala Agricultural University; Governing Board and Executive Committee, FIRMA & Governing Board, ADAK, Govt. of Kerala. He is a recognized state level faculty for KILA, Govt. of Kerala. Besides, he has been Principal and Co-Principal Investigator for many research projects funded by external agencies. In addition, he also served as member to the Sahodaran Ayyappan Smarakom, Dept. of Cultural Affairs, Govt. of Kerala for more than a decade. The Govt. of Kerala was pleased to appoint him as 1st Member (Fisheries Expert) in the Kerala State Fishermen Debt Relief Commission.



**Smt. Alphi Korath**

Associate Professor  
(Statistics)

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### Academic Qualifications:

M Sc. Agricultural Statistics (Kerala Agricultural University)

Area of specialisation : Agricultural Statistics

### Professional Experience

30 years of Teaching and Research experience.

Name of University	Period of Service
Kerala Agricultural University	7.1.1985 to 31.3.2011
Kerala University of Fisheries and Ocean Studies	1.4..2011 - continuing



**Shri Mathew Sebastian**

Associate Professor  
(Statistics)

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#### Academic Qualifications

M Sc. Agricultural Statistics Kerala Agricultural University 1985

#### Professional Experience

30 years of Teaching and Research experience.

Research Publications :

International : 5

National : 14



**Smt. Malika V**

Associate Professor  
(Statistics)

#### Academic Qualifications:

M Sc. Agricultural Statistics( Kerala Agricultural University)

Started the career as Assistant professor(Statistics)in 1985 at College of Fisheries, Kerala Agricultural University, Panangad, Kochi. Apart from teaching, associated with the management of Academic, Cultural and IT related activitiesof the University.

Research Publications :

International : 2

National : 5

Research Projects(Co-PI) : 2

Participation in Training programmes:

Refresher course/ Summer Institute: 1

Seminar / workshop/ Conferences: 2



**Dr. Daisy. C. Kappen**

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Director of Extension i/c

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#### Academic Qualifications

M.F.Sc. (Extension) Kerala Agricultural University

Ph.D Fisheries , Cochin University of Science and Technology

Life Member, Indian Society of Extension Education

Life Member, Extension Education Society (EES),TNAU, Coimbatore

Life Member, Society of Fisheries Technologists

#### Professional Experience

Transferred the technologies in the field of aquaculture viz. freshwater fish farming, brackish water fish farming, ornamental fish culture, integrated farming, Pen culture and cage culture of peral spot, red Snapper, Seabass, nile tilapia and giant trevally to the target group. Participated in various exhibitions organized by state/national/international organizations and secured several prizes and awards. Organized training programmes to the fisherfolk in freshwater fish farming, brackishwater fish farming, cage culture etc.



**Prof. (Dr.) G. Sadasivan Nair**

Academic Consultant

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#### Academic Qualifications

LL.M, Ph.D.

#### Professional Experience

Post Graduate Law Teaching Experience in the School of Legal Studies, CUSAT, From Feb, 1980 - April, 2007

Professor of Law from Feb, 1995 and Director of the School of Legal Studies during July, 1998 – July, 2001 and from May, 2006 – Dec, 2006.

Academic Consultant for LL.M., KUFOS,



**Dr. P R Suresh**

Assistant Professor  
(On Contract)

#### Academic Qualifications

Master of Business Economics, Cochin University of Science and Technology, 2004

M.Phil. Applied Economics, Cochin University of Science and Technology, 2006

Ph.D., Cochin University of Science and Technology, 2015

#### Professional Experience

Teaching: Assistant Professor in Economics at School of Management and Entrepreneurship, KUFOS

Industry Experience: Worked with Ernst and Middle East Pvt. Ltd., Technopark, Trivandrum as Assistant Information and Research Analyst



**Dr. George Joseph**

Assistant Professor (Contract)

School of Management &  
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#### Academic Qualifications

Ph.D. 2015 - Projects and Operations

MBA. 2009- Cochin University of Science and Technology, India

#### Professional Experience

Young Researcher Award-4<sup>th</sup> International Research Symposium in Service Management (IRSSM 4)-2013 awarded by Service Research Institute, USA

Best Technical Paper Award-Project Management Institute, USA, Indian Chapter-"Waves 2013"

Best Technical Paper Award- Project Management Institute, USA, Indian Chapter-"Waves 2015"

Award for Research Excellence by Cochin University of Science and Technology

National Eligibility Test qualified



**Dr. Meria T. Cheeran**  
Assistant Professor (Contract)  
School of Management and  
Entrepreneurship

#### Academic Qualifications

Ph.D. Social Work from M.G University.  
M.S.W. University of Calicut (Rank holder)  
Post Graduate Diploma in Human Resource Management from IGNOU in 2012

#### Professional Experience

More than 9 years teaching experience( more than 7.5 years in P.G level. Working as Assistant Professor in School of Management and Entrepreneurship, Kerala University of Fisheries and Ocean Studies, Panangad, Kerala since June 2013. Worked as lecturer in the Rajagiri School of Social Work , Rajagiri college of Social Sciences, Kerala ,from 1<sup>st</sup> November 2006 to 30<sup>th</sup> June 2012 . Worked as lecturer in the Dept.of Social Work , A.W.H Special College ,Calicut , Kerala from September 2003 to October 2004. Worked as lecturer in the Dept of Social Work , Vimala College, Thrissur ,Kerala on leave vacancy from June 2003 to august 2003



**Smt. Shajeera K.A**  
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School of Management &  
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#### Academic Qualifications

M. Phil (Business Studies). –M.G University, Kottayam, 2010  
MBA- M.G University, Kottayam, 2008  
M.Com (Finance) - M.G University, Kottayam, 2012

#### Professional Experience

Assistant professor in General Management at School of Management & Entrepreneurship, Kerala University of Fisheries and Ocean Studies, India  
Lecturer in Business Management at University Institute of Technology Alappuzha ,University of Kerala, India  
Lecturer in Business Management at University Institute of Technology Pirappancode ,University of Kerala, India  
Lecturer in Management, Ansar Women's College Perumpilavu, Calicut University,India



**Shri Rajeev Gopinathan**  
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#### Academic Qualifications

MBA . Jansons School of Business,(AACSB Accredited, Crisil A++ Rated) Coimbatore, 2005  
B.Sc. Agriculture – College of Agriculture, Trivandrum, Kerala Agricultural University 2002

#### Professional Experience

I possess an overall work experience of 11 years which include the mix of industrial(5 yrs.)and academic(6 years) stints at various prestigious corporates and academic institutions where I also had the opportunity to play significant role in establishing and building the organization. I was involved in the roles of business development, training, team handling, CRM etc in my corporate tenure. I am also experienced in case method of teaching and use it to anchor the student centered learning process.



**Shri Hafiz Aslam P. J.**

Assistant Professor (Contract)

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#### Academic Qualifications

LL.M. Govt. Law College in Commercial Law in the Year 2014

#### Professional Experience

He has been engaged in teaching Commercial Law at various CA/ CS Institutes across Kerala. Also worked as a Guest Lecturer from Oct, 2014 to Oct, 2015 at the Central University, Kerala. Participated in several National workshops and Seminars on various subjects of law apart from presenting three papers in three different National Seminars. One of the papers was published in a leading law National Law Journal in India. Worked as a coordinator and Rapporteur for several national seminars.



**Ms. Sandhya Lekshmi P.**

Assistant Professor (Contract)

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#### Academic Qualifications

M.B.A. (International Business) Cochin University of Science and Technology, Kerala, India

B. Tech (Computer Science and Engineering), 2007-2011, Kerala University, Kerala, India

#### Professional Experience

Sept 2014 till date Assistant Professor, Kerala University of Fisheries and Ocean Studies

Dec 2013 – Apr 2014 Probationary Officer, South Indian Bank Ltd



**Ms. Ashamol V.**

Assistant Professor

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#### Academic Qualifications

LLM. School of Legal studies, Cochin University of Science and Technology

#### Professional Experience

Sept 2014 till date Assistant professor in Maritime lawat Department of Legal Studies ,School of Management & Entrepreneurship, Kerala University of Fisheries and Ocean Studies, Kerala, India

Sept 2010-April 2014 Assistant professor in Law at School of Legal Studies, CUSAT Kerala, India

June 2002- Sept 2010 Advocate, Kerala, India

# School of Ocean Sciences and Technology



**Dr. K. Gopakumar**

Professor of Eminence,  
Head of the Department Food  
Science & Technology

Prof. K. Gopakumar. M. Sc.& Ph.D. (Biochem), D. Sc., F. I. C., F.S.F. T(I), F. N. A. A. S., F. A. A., F.I.F.S. I, Professor of Eminence and Head of the department, Food Science and Technology. He was formerly Deputy Director General, Indian Council of Agricultural Research, New Delhi and Director Central Institute of Fisheries Technology, Kochi. He served as Chief Technical Advisor to Philippines Government for FAO of the UN and also expert of FAO in Bangladesh and UN Mission Member in Sri Lanka.

He did Post Doctoral Research in Natural Resources Institute, London and did advanced training in Retort Pouch Processing at Metal Box, U. K. He has authored over 300 Research papers, 14 Books and successfully guided 15 students in various disciplines of Food science and Technology. He is the recipient of Nation's top Agricultural Award, the Rafi Ahamad Kidwai award, ICAR team Research Award, SOFTI award, SL. Hora Gold Medal, and most prestigious International Award, The Kwarizimi International Award from the President of the Islamic Republic of IRAN. In 2013 he received the prestigious VASVIK international industrial award of Rs. 1 lakh with citation for contributions to Agricultural Research from VASVIK foundation, Mumbai.



**Prof. (Dr.) V.K. Venkataramani**

Academic Consultant  
Dept. of Biological  
Oceanography  
School of Ocean Science and  
Technology  
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## Academic Qualifications

Ph. D. Marine Biology, Annamalai University  
Positions Held : Dean, Fisheries College and Research Institute  
Tuticorin-628008 (2006-2009; 2012-2013)  
Director of Research and Extension (2010-2012)  
Fisheries College and Research Institute  
amilnadu Veterinari and Animal Sciences  
University, Tuticorin -628008

## Professional Experience:

Teaching Experience : 38 years (From 1976 onwards)  
Research Experience : 38 years (From 1976 onwards)



**Dr. C.V.K. Prasada Rao**

Academic Consultant

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#### Academic Qualifications

M.Sc. Oceanography , Cochin University of Science and Technology

Ph.D Marine Sciences , Cochin University of Science and Technology

#### Professional Experience:

Worked as Scientist at Naval Physical & Oceanographic Laboratory (NPOL), Kochi, the Defence Research & Development Organisation (DRDO) for more than 36 years and pursued R&D work in oceanography. Associated with several programmes and projects of Naval Research pertaining to oceanography and underwater acoustics for design and evaluation of SONAR systems. During several regular courses of the Navy, lectures have been delivered on oceanography and its importance for Anti Submarine Warfare (ASW). Took part actively in many oceanographic cruises and lead the scientific teams as Chief Scientist. Contributed for planning and conduct of several cruises of INSSagardhwani, a DRDO Research Vessel. Participated onboard naval and research vessels during important Oceanographic Expeditions like, MONSOON-77, MONEX-79, BOBMEX-99 and ARMEX-02. The areas of research interests are ocean waves, remote sensing of oceans, ocean thermal structure, ocean currents and underwater acoustics and published more than 50 research papers. Retired as Scientist-G & Associate Director, Naval Physical & Oceanographic Laboratory (NPOL), Kochi in 2013 and joined at KUFOS as Academic Consultant (Physical Oceanography & Ocean Modelling) in July 2014.



**Dr. D. D. Nambudiri**

Professor Emeritus  
(2013-14)

#### Academic Qualifications

M. Sc (Food Tech, CFTRI, Mysore)

Ph. D (Biochem), FSFT.

#### Professional Experience:

He was Professor Emeritus, Dept. of Food Science and Technology, KUFOS, Kochi (2013-14). He also served as dean, faculty of Fisheries, College of Fisheries, Kerala Agricultural University. He was Associate Dean (Research & PG Studies) at the College of Marine Science and Technology (Deemed University) Eritrea, NE Africa and Visiting faculty at the European Union Erasmus Mundus MSc (Food Science & Nutrition) Programme, Ireland & Belgium and held several distinguished assignments in India broad.

Research areas: Biochemistry. Enzymes, Quality control. Seafood Processing. Product developments.



**Dr. Venugopal Menon**  
Adjunct Professor

Dr. Venugopal Menon received his M.Sc. (Chemistry) from the University of Kerala and Ph.D (Biochemistry) from the University of Bombay, India. He began his career at the Central Institute of Fisheries Technology, Cochin, India, and later moved to the Bhabha Atomic Research Center, Mumbai, India, where he was senior scientific officer in the Seafood Technology Section of the Food Technology Division. He has been a postdoctoral Research Fellow at the National Institutes of Health, Bethesda, Maryland, U.S. and a Visiting Scientist at the Memorial University of Newfoundland, St. John's, Newfoundland, Canada. His main interests were value addition of fishery products, radiation processing of seafood, and marine proteins. He has published more than 120 publications including several book chapters and reviews in these areas. He has independently authored three books namely, 'Seafood Processing: Adding Value through Quick-freezing, Retortable Packaging and Cook-chilling' (CRC Press, 2006), 'Marine Products for Healthcare: Functional Compounds and Bioactive Nutraceuticals from the Ocean' (CRC Press, 2008) and Marine Polysaccharides: Food Applications (CRC Press, 2011). He is a Fellow of the National Academy of Agricultural Sciences, New Delhi, India.



**Prof. Dr. S. Rajendran**  
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Dept. of Remote Sensing &  
GIS,  
Dept. of Disaster Management  
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#### Academic qualification

M.Sc (Tech) Applied Geophysics (Andhra University),  
Ph.D. Marine Geophysics (Andhra University),  
M.A. English (IGNOU)

#### Teaching Experience:

Initially he worked as Exploration Geophysicist in the Department of Groundwater, Tamilnadu for 2 years and subsequently for another 2 years in the Geological Survey of India (GSI), Nagpur. Thereafter, he joined Cochin University of Science and Technology and put in 30 years of teaching and research. After his retirement, he was selected and appointed as 'UGC Emeritus Fellow' in the same department for a period of 2 years and on completion of his tenure, he continued as 'Contract Faculty' till he joined KUFOS in December 2013. His areas of research are Applied Geophysics, Marine Geophysics, Marine Geology, Groundwater Hydrology, Offshore Exploration, Remote Sensing & GIS and the Law of the Sea. He has published 53 papers and authored a book entitled, "Lineaments of Deep Crustal Structures of Central Kerala". He had participated and presented papers in 28 International and 20 National conferences. He took part in 5 central Indian Ocean research cruises under the aegis of 'Manganese Nodule Surveys' carried out by the National Institute of Oceanography, Goa. He is a Fellow of the Geological Society of India (GSI) and having life memberships in the Indian Geophysical Union (IGU), Society of Exploration Geophysicists (SEG), USA, International Marine Mineral Society (IMMS), Hawaii, USA; Asia Pacific Institute of Soil Bio Engineering (APISBE) and the International Erosion Control Association (IECA), USA. He had visited 21 scientific laboratories abroad including the Tsunami Observatory, Hilo Island, Hawaii. He had undergone training programs organized by the International Ocean Institute (IOI), United Nations on Deep-Sea Mining: Class A (Finland), Law of the Sea: Class B program (Canada) and the Management of Exclusive Economic Zone (The Netherlands).



**Prof. Dr. Rajendran N.**

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### Academic qualification

Ph.D. in Marine Sciences, Annamalai University, India 1985

D.Ag. (Doctor of Agriculture) in Marine Sciences, Hiroshima University, Japan 1993

### Teaching Experience:

Prof. Rajendran has more than 20 years of academic and research experience in Japan, varying from faculty member of the Japanese national universities (Hiroshima University - 1994-1999, Akita Prefectural University - 1999-2001, Yokohama National University -2001-2006; 2008-2010, Shimane University -2006-2007) to various other research positions (Postdoctoral fellow - 1987-1988; Doctoral student - 1989-1993; Researcher - 1993-1994).

Prof. Rajendran is teaching marine science and related subjects for more than 35 years. He has specialized in various fields of marine sciences (pollution, toxicology, toxinology, microbial ecology, molecular biotechnology etc.), and has rich research experience of working in tropical to polar regions, micro to macro marine environments, bacteria to fishes, eutrophication to pollution etc. He participated in many cruises and led many training and research cruises in Pacific and Indian Oceans. He has about 100 research publications. He has chaired quite a number of scientific sessions in various national and international symposia and conferences. He has received awards and honours in India and abroad for his immense research contributions. He has a rare distinction of receiving Visiting Professor Fellowship from Japan Science for the Promotion of Science for two times. In addition, he has served as member of various committees, and boards related to the field of his specialization.

### Academic qualification

M. Sc., M.Phil., Ph.D., Madurai Kamaraj University

Post-Doctoral Research. School of Medicine, University of Pennsylvania, Philadelphia, USA

Post-Doctoral Researcher - BRACCO Research, Princeton, USA

### Teaching Experience:

David has received several prestigious research fellowships in his career from ICAR, INSA and NIH, USA for post-doctoral research fellowship from 2006 until 2012 for his research in Chemical Genetics and Biotechnology at the Penn Centre for Molecular Drug Discovery (PCMD). He also worked with BRACCO Research USA (Medical and Regulatory), Princeton, New Jersey, USA on designing and characterizing novel Fluorescent Molecular Probes for non-invasive imaging of arthritis and cancer in humans and served as an instructor in the Department of Bio-Engineering- Radiology Division, School of Medicine, University of Pennsylvania (UPENN), Philadelphia, USA. He has published widely in several peer reviewed International and National Journals. Research areas: Biotechnology: Drug designing and targeted drug delivery; Chemical Genetics-molecular probes & drug designing, Gut metagenomics: Probiotics for Aquaculture, Human Molecular & Biomedical Genetics: Genetic manipulation in Fishes, Aquatic Germplasm conservation by cryopreservation of gametes.



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**Dr. Sanu Jacob**  
Assistant Professor  
(Contract)  
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Dr. Sanu Jacob has a Ph.D. from University of Milan, Italy (2004-07) with research experience in postharvest biology and technology of agro-food products. He did his postdoctoral research at Groupe-ESA, Angers, France (2007-09) and at Dalhousie University, Truro, Canada (2010-11). He was awarded visiting scientist grant twice from the EU-COST to work at Wageningen University, Holland (2007) and at Katholieke Universiteit, Leuven, Belgium (2008). He is also received the MASHAV fellowship twice (2003 and 2015) from the Israel government to get trained in the high profile labs of Postharvest and Food Sciences, ARO - Volcani Center, Bet-Dagan, Israel. In 2006, he received the Conference Chair grant as one among the few Ph.D. scholars to participate in the prestigious quadrennial 'Gordon Research Conference' on Postharvest Physiology at Connecticut, US. He is a member of International Society for Horticultural Sciences, Association of Food Scientists and Technologists (India) and Kerala Academy of Sciences, India. He is also a member in the editorial advisory board of 'Journal of Postharvest Technology' (Publisher: Infocility), with peer-reviewed publications in national and international journals.



**Dr. Vasundhara G**  
Assistant Professor  
(2013-15)

Dr. Vasundhara obtained M. Sc. & Ph.D (Biochemistry) from Mahatma Gandhi University, Kottayam, Kerala. She has received JRF and SRF during her Ph D. She has also received a Visiting fellowship from JNCASR, Bangalore. She has got ten years of teaching and research experience and has got publications in journals of national and international repute.

Research interests: Biochemistry. Bioactive com

pounds of marine origin, Nutraceuticals, Biofertilizers, Nitrogen fixation



**Ms. Mary Jisha Francis**  
Assistant Professor  
(On Contract)  
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#### Academic qualification

MSc. in Oceanography

Qualified Combined CSIR-UGC- JRF-NET (Lectureship) Examination Earth Sciences

#### Teaching Experience:

Working as Assistant Professor (On Contract) in Physical oceanography in the Dept. Of Physical Oceanography, SOST, KUFOS, Panangad, July - 2013 onwards

# School of Ocean Engineering & Underwater Technology



**Dr. Benny N. Peter**  
Academic Consultant  
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## Academic Qualifications

M. Sc. Oceanography Cochin University of Science & Technology, 1984

Ph. D. Physical Oceanography Cochin University of Science & Technology, 1989

## Professional Experience

Research fellow (CSIR) - Cochin University India 1985-1990, Research Associate (UGC) - Cochin University India 1990-1994, STA fellow National Research Institute of Far Seas Fisheries, Japan 1994-1995, Senior Research Associate - Cochin University India 1995-1998, Lecturer Dept. of Physical Oceanography Cochin University, India 1998- 2010 (Contract), JSPS Fellow Research Institute of Applied Mechanics, Kyushu University, Japan 2004-2005, Senior Lecturer University of Technology Malaysia 2010 May – June 2011, Associate Professor University of Technology Malaysia July 2011- June 2014



**Dr K V Thomas**  
Academic Consultant  
Mobile: 9400333128  
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## Academic Qualifications

M Sc. Oceanography

Ph. D. Marine Sciences

## Professional Experience

Dr. K.V. Thomas is an oceanographer with 36 years of research experience in the fields of 'Coastal processes' and 'Coastal Zone Management'. He has his Ph.D. from Cochin University. He got trained in various aspects of coastal zone management from the International Centre for Theoretical Physics, International Ocean Institute, University of New Castle, Jadavpur University and Anna University. He was with the National Centre for Earth Science Studies (NCESS), Thiruvananthapuram for more than 35 years and was the Head of the Coastal Processes Group.

Dr Thomas has served in many committees dealing with Coastal Zone Management and Coastal processes. He is currently member of the Lakshadweep Coastal Zone Management Authority; Advisory Committee of the Integrated Coastal Zone Management Programme, Odisha; and Project Advisory and Management Committee of INCOIS, Hyderabad.

The Coastal Zone Management Plans for Kerala, Maharashtra and Lakshadweep were prepared under his leadership. He has also coordinated the preparation of the Integrated Island Management Plan for Lakshadweep. He has successfully completed over 30 projects funded by national and international agencies and undertaken more than 100 consultancy projects. He has published about 45 research papers in addition to numerous project reports including consultancy projects. Dr Thomas has coordinated and conducted about 20 training programmes on 'Coastal Zone Management' and 'Coastal processes' for Govt officials, academicians and coastal communities.

# RESEARCH

KUFOS carries out both basic and applied research in fisheries, ocean sciences and allied disciplines. The research activities of KUFOS are coordinated by the Directorate of Research, and are carried out under the auspices of seven schools, viz. i) School of Aquaculture and Biotechnology (ii) School of Fisheries Resource Management and Harvest Technology (iii) School of Aquatic Food Products and Technology (iv) School of Ocean Science and Technology (v) School of Ocean Engineering and Underwater Technology (vi) School of Fishery Environment and (vii) School of Management and Entrepreneurship. Research is undertaken in the form of externally funded projects, plan projects of the Government of Kerala, in-house (KUFOS aided) research projects (KARP) and student dissertations.



The core research areas of KUFOS in the field of fisheries science include sustainable aquaculture; aquatic ecosystems; taxonomy and biodiversity; marine and inland capture fisheries; mariculture; ornamental fish culture; post-harvest technology, processing and value addition; and indigenous traditional knowledge based technologies, while those in the areas of ocean sciences are marine bioactive compounds and marine Drugs; marine environmental health assessments; conservation of mangrove and coral ecosystem; coastal pollution and related issues; climate change impacts and adaptations; remote sensing and its applications, conservation and management of marine resources; and disaster management.

## 1) School of Aquaculture and Biotechnology

Research at the School of Aquaculture and Biotechnology focuses on aquaculture (new species, technologies and sustainability issues), nutrition and feed technology, disease diagnosis and health management, biotechnology and genetic engineering, aquarium science and ornamental fish breeding and management, and extension and lab to land programs. The school has to its credit significant research achievements including

the development of captive breeding technologies for native ornamental fish species of the Western Ghats; seed production of giant freshwater shrimp, diagnostic kit for rapid and specific detection of White tail disease of *Macrobrachium rosenbergii* by loop mediated isothermal amplification (RT-LAMP); standardised the technology for the broodstock maintenance of two marine ornamental shrimps, *Lysmata debelius* and *Rhynchocinetes durbanensis*.

#### a) Centre for Nutritional Research Feed Formulation and Standardization/ Enforcement of Feed Quality

PI: Dr. S. Shyama (2011-2014)  
Dr. Chiranjiv Pradhan (2015)  
Research Scholar: Mr.Sreenath VR

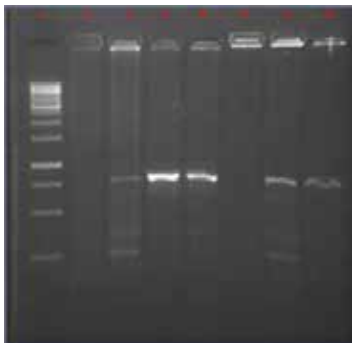
The centre aims at formulating, standardizing, popularizing and evaluating need based feeds for various commercially important species. A feed production unit has been constructed for formulation, production and quality evaluation of cost effective feeds for finfish, shellfish and ornamentals. Feed formulation utilising processing wastes is a key area of research work. Work is also being done on the 1) dietary enhancement of colour of ornamentals employing indigenous pigment sources of plant as well as animal origin. 2) Effect of replacement of groundnut oilcake with non-conventional feed ingredient copra meal and nutrient utilization of *rohu*.



#### b) Centre for Aquatic Animal Health Management

PI: Dr. Devika Pillai (2011-2014)  
Dr. Swapna Antony (2015)

The center was established to regularly monitor the occurrence of diseases in Kerala and to evolve effective strategies for health management for aqua farmers. The centre provides advisory services to farmers by way of disease diagnosis and suggesting treatment/ preventive measures for diseases.



## Highlights

- ❖ Shrimp disease surveillance was commenced in the state of Kerala. The Centre carries out passive disease surveillance and provides regular technical advisory services to the farmers including diagnosis of disease and treatment to be applied, whenever they seek advice regarding disease occurrence and its management.
- ❖ An effort is being made at the Centre to find an effective prevention for WSSV employing in silico drug designing of the envelope protein VP19 of WSSV
- ❖ The Centre has also attempted to find an effective method to control Vibriosis in shrimp farms by employing quorum quenching as well as by generating a stable 3D structure of zinc metallopeptidase, an outer membrane protein of Type III secretory system (TTSS), which is one of the major virulence machinery of gram negative bacteria.



### c) NFDB funded project on “National Surveillance Programme for Aquatic Animal Diseases”

PI: Dr. Devika Pillai

Co-PI: Dr. S. Shyama

Senior Research Fellows : Ms. Sneha K.G., Mr. Rakesh C.G.

As a result of the awareness programme conducted in Kollam, the project team was able to convince a few farmers to take up scientific shrimp farming with minimum water exchange following best management practices. Very good harvest in their farms, when there was total crop loss in the entire

area has encouraged more farmers to come forward to adopt scientific shrimp farming. This is a first step towards making a disease free zone in Munrothuruthu area of Kollam district, where shrimp farming is concentrated.

A portable dismantlable hood to provide a sterile chamber for microbiological sampling/plating at the farm site itself was developed. This was developed to overcome the practical difficulty of bringing diseased fish in live condition to the laboratory from far off places.



Heavy isopod infestation in carps from freshwater culture pond, *Channa striatus* and Wallago attu taken into culture from canals were reported. The species was identified to be *Alitropus typus*. Molecular characterization (CO1 gene partial sequencing and 18S gene sequencing), which had not been hitherto reported, was carried out, the sequences obtained were submitted to Genbank and accession numbers allotted for the same.

#### d) Centre for Biofloc Technology

PI: Dr. S. Shyama (2013 - 2014)

Dr. Ranjeet K (2015)

Dr. S. Mithun (2015)

Research Scholar: Ajaz S., Cicily M.

The centre carries out research for developing effective control methods and management strategies for aquaculture using bioflocs.

#### e) Centre for Aquaculture Genetics and Biotechnology

PI: Dr. Salin (2013-2014)

Dr. S. Shyama (2014 - 2015)

Dr. Rejish Kumar (2015)



The center carries out cutting edge research in tune with the emerging global trends in fish genetics and biotechnology, such as genetic characterization of economically important aquatic species, development and assessment of aquatic animals with novel traits, including transgenic species and development of superior lines of aquatic species suitable for aquaculture.

The School of Aquaculture and Biotechnology is also undertaking several externally funded projects supported by national agencies, as well as plan projects funded by the Government of Kerala.

*Transcriptome analysis of Macrobrachium rosenbergii genome for production of a fast-growing line with improved economic traits*

Genomic analysis of *M. rosenbergii* using a transcriptome approach will enable rapid isolation of quantitative trait loci (QTLs) responsible for economically important traits like fastened growth, disease resistance etc that will form the basis of production of superior lines of giant freshwater prawn *M. rosenbergii*

*Molecular marker studies in the Kerala Queen, Sahyadrya denisonii*

Indiscriminate exploitation of this fish from the available resources in Kerala has been devastating the population of this species. Molecular marker analysis using microsatellites and mtDNA markers will enable arriving at meaningful conclusions for the conservation of this important resource.

*Selective breeding programme for Indian white shrimp Penaeus indicus.*

The revival of indigenous species *P. indicus* is crucial because there is overdependence on Pacific white shrimp (*Penaeus vannamei*). *P. vannamei* has its advantages in availability of genetically improved and is widely



Title of the project	Principal Investigator	Funding Agency	Outlay
Establishment of a production cum training center for ornamental finfish and shellfish at Fisheries Station, Pudukkottai	Dr. K. Dinesh	CMLRE	96.30 Lakh
Establishment of Aquatic Animal Health Laboratory	Dr. Devika Pillai	NFDB	56.00 Lakh
Establishment of an ornamental fish culture unit at Pokilapara for improving the livelihood of tribal community	Dr. K. Dinesh	NABARD	8.78 Lakh
Improving the tribal livelihood Western Ghats through ornamental fish culture	Dr. K. Dinesh	Western Ghats Cell Planning and Economic Affairs Department	1.00 Lakh
Sustainable Fisheries Development for Rural empowerment and food security in Puthenvelikkara Grama Panchayat	Dr. Daisy Kappen	RKVY	77.95 Lakh
National Surveillance Program for Aquatic Animal Diseases	Dr. Devika Pillai	NFDB	76.43 Lakh
Fish and Prawn Seed Bank	Dr. S. Shyama	Plan Project of the Government of Kerala	10.00 Lakh
Mangrove Research Center	Dr. K. Dinesh	Plan Project of the Government of Kerala	5.00 Lakh
Trial Culture of <i>Litopenaeus vannamei</i> at Fisheries Station	Dr. K. Dinesh	Plan Project of the Government of Kerala	45.00 Lakh
Finding out non-conventional species for brackish water and marine species for Aquaculture	Dr. Linoy Libini	Plan Project of the Government of Kerala	20.00 Lakh
RMP Canal Cage Culture	Dr. K. Dinesh	Plan Project of the Government of Kerala	15.00 Lakh
Seed rearing facility at Fisheries Station, Pudukkottai	Dr. K. Dinesh	Plan Project of the Government of Kerala	15.00 Lakh

cultured across the globe. Since it is an exotic species *P. indicus* being a native species will be a good alternative to have.

## 2) School of Fisheries Resource Management and Harvest Technology

Research at the School of Fisheries Resource Management and Harvest Technology focuses on both inland and marine ecosystems of the country and is centred around studies on the taxonomy and biodiversity, fish biology and ecology, resource management and population studies, fishery hydrography, fishing technology and engineering as well as informatics. The school has made significant contribution to research on the taxonomy, biology, fishery and conservation of freshwater crustaceans of the Indian subcontinent including the discovery and description of more than ten species of freshwater shrimps,

has developed an excluder device to eliminate jelly fishes from stake nets; and studied the abundance and distribution of deep-sea resources of South west coast of India (7° N to 10°N).

The following Chairs and Research Centers also function under the school of Fisheries Resource Management and Harvest Technology

#### a) Center for Taxonomy of Aquatic Animals

PI: Dr. K. V. Jayachandran (2012-2014)

Dr. Rajeev Raghavan (2015)

Research Scholars: Ms. Remya Sundar, Ms. Anju V. K.

The center undertakes research to understand the taxonomy and systematics of freshwater and marine aquatic flora and fauna of Kerala using both conventional and modern approaches, as well as carries out capacity building in taxonomy and allied areas. The center is supported by a full-fledged state of the art molecular taxonomy laboratory while the establishment of a referral museum is in progress.

#### Highlights

- ❖ A comprehensive checklist of freshwater and marine fishes of Kerala prepared and published as a special issue of the international conservation journal *Journal of Threatened Taxa*
- ❖ Cleared the identity and described four new species of fin fishes from the freshwater systems of the Western Ghats
- ❖ A full-fledged museum of aquatic animals was set-up at the KUFOS Campus

#### b) Center for Inland Fishery Database

PI: Dr. K. V. Jayachandran (2012-2014)

Dr. S.M. Raffi

Research Scholars: Ms. Maneeja Murali, Mr. Thiruvarasu

The major objectives of the center are to understand the exploitation patterns and population status of commercially important freshwater and brackishwater fish and shellfish resources of the State.

#### c) Center for Germplasm conservation of Inland Aquatic Organisms

PI: Dr. K. V. Jayachandran (2012-2014)

Sri. Anvar Ali

The major objectives of the center are to undertake research that informs in-situ and ex-situ conservation actions for endemic and threatened freshwater food and ornamental fishes of the Western Ghats.

#### d) Prof. Alikunhi Chair for Sustainable Aquaculture

PI: Dr. S. Shyama (2013 - 2014)

Shri. Anvar Ali

Co-PI : Dr. M. K. Sajeevan

Project Scientist: Dr. Elizabeth Caroline

Research Scholars: Mr. Arjunan VM, Ms. Devi P. S.

Field Assistant: Mr. Ranjith R

The chair envisages the development and optimization of farming inputs for increased aquaculture production focusing on indigenous food and aquarium species of Kerala; formulate and design cost effective farmer friendly seed production and farming systems for native fishes; disseminate techniques in seed production and farming of the native fish to the farming community.

#### e) Pandit Karuppan Chair for Empowerment of Fisherfolk and Archiving Traditional Knowledge

PI: Dr. K. S. Purushan (2013 - 2014)

Dr. M.K. Sajeevan

Co-PI : Dr. M. P. Prabhakaran

Research Scholars: Mr. Sanju K

Field Assistant: Ms Salini NS, Ms. Henamol, Mr. Vineeth Kumar

The chair has been set up to archive, digitize and document the traditional knowledge of fishing communities, undertake socioeconomic surveys among fishing communities, and carry out research to understand livelihood and development issues.

#### Highlights

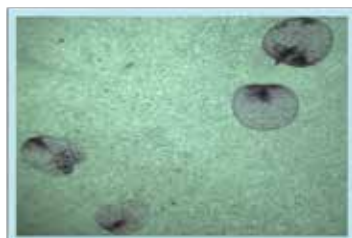
- ❖ Valuable information regarding indigenous technical knowledge and fishing techniques gathered.
- ❖ Skills and talents of traditional fisherfolk recognized by way of meaningful inter phases.
- ❖ Valuable information pertaining to traditional fishing techniques such as harpooning, pole lining, long lining, hand picking, *padangu*, *norimbu*, scooping nets, cast nets, drag nets, bag nets, seines, ring nets, gill nets etc were displayed for the information of students, stake holders and public.



- ❖ Indigenous technical knowledge related to prawn and shrimp culture practices, mud crab fattening, *oothakayaral*, clam collecting methods, mud crab catching methods, fish net treatment methods, medicinal value of fish, appearance of air bubbles (*maathi*) on the surface of water indicating shoal movement of sardine and *Keravu/Chuzhi* indicative of mackerel, shoal of pelagic fishes (*Pulapp*), oceanographic aspects having impact on fisheries viz, wind flow and its direction, tidal currents and its direction and velocity, rip current, *neduvettukayaruka*, *thakkom*, cloud formation, rainbow, varying hue and reddish tinge in the sky, constellation, mud bank formation, red water phenomenon etc are collected.

The School of Fisheries Resource Management and Harvest Technology is also undertaking several externally funded projects supported by national agencies, as well as plan projects funded by the Government of Kerala

Title of the project	Principal Investigator	Funding Agency	Outlay
Distribution of Gelatinous Zooplankton in the West Coast of India and their Identification	Dr. Manoj Kumar	CMLRE	79.00 Lakh
Barcoding of shrimps from Indian EEZ	Dr. K.V. Jayachandran	CMLRE	59.70 Lakh
All India Coordinated Project on Taxonomy	Dr. K.V. Jayachandran	MoEF	31.44 Lakh
Establishment of Automatic Weather Station and Climate Service Centre	Sri N.N. Raman	Plan Project of the Government of Kerala	20.00 Lakh



*Noctiluca scintillans*

#### f) Distribution of Gelatinous Zooplankton in the West Coast of India and their Identification

PI: Dr. B Manojkumar  
 Co-PI: Dr. Devika Pillai  
 Dr. K V Jayachandran  
 Shri. N N Raman

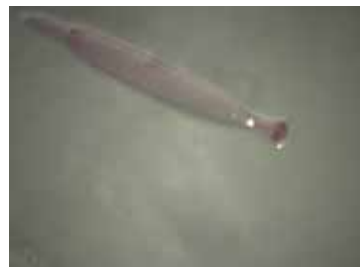
Gelatinous zooplankton are thought to be important members of the pelagic ecosystem. Their abundance is known to vary with season, food availability and hydrographic conditions, sometimes forming massive blooms some groups like jelly fish is detrimental to socio-economic installations. There is, however, a severe lack of research on the gelatinous zooplankton community in the west coast of India.

The main objective of the project was to study the composition, identification and distribution of Gelatinous Zooplankton along the west coast of India. To achieve this target a total of 3 cruises were undertaken in the FORV Sagar Sampada.

The first cruise, No 319 was from 6<sup>th</sup> to 13<sup>th</sup> of September 2013 along the south west coast of Kerala (Cape West to Kollam). Samples were collected



*Sagitta enflata*

*Sagitta ferox**Sagitta hexaptera**Abylopsis eschscholtzi*

and analysed from 11 stations during this cruise. A total of 19 species and 8 genera were recorded in the study. The major groups identified were Chaetognathae, Siphonophore, Ctenophores, Appendicularians, Hydrozoa, Scyphozoa, Doliolids and Salps. Chaetognathae was the dominant group present in terms of species number, of which *Sagitta enflata* was recorded as the abundant species. Appendicularians was found only in Kollam coast in large numbers. There was a significant correlation between species diversity and environmental parameters. Diversity of gelatinous zooplankton was found to be positively correlated with atmospheric temperature, pH and dissolved oxygen.

In this study, Shannon Weiner diversity index ( $H'$ ), Margalef's Species richness (D) and Pilou's species evenness ( $J'$ ) were used to describe the diversity in a community. It was observed that species diversity ranged from 0.0320 to 1.2592. The minimum species diversity was recorded at station 2 (Cape west) and the maximum species diversity was recorded at station 11 (Kollam coast). The species richness ranged from 0.1146 to 0.6289. The minimum species richness was recorded at station 10 (Kollam) and the maximum species richness was recorded at station 1 (Cape west). The species evenness ranged from 0.0461 to 0.7642. The minimum species evenness was recorded at station 2 (Cape west) and the maximum species evenness was recorded at station 4 (Cape east).

Apart from this study, the distribution and abundance of the gelatinous zooplankton were investigated in the monsoon season of 2015 at two stations one from the coastal waters of Cochin and the other from Mangalore in the cruise no.341. A total of five groups of gelatinous zooplankton were observed during this study. They were Siphonophore, salps, doliolids, appendicularians and Chaetognaths. Among this, the maximum number of species was recorded from station 2. Siphonophores were abundant in the study locations and constitute an important part of the marine plankton. The dominant species from siphonophores were the *Diphyes dispar*. In this study, the most dominant species of chaetognaths was *Sagitta hexaptera* and *Salpa fusiformis* was the predominant species in among the salps.

Gelatinous zooplankton species composition, distribution and abundance were also investigated in the Cochin to Lakshadweep islands stretch of the Arabian Sea during the monsoon season from 13 July to 02 August 2015. In total, 19 species were identified in this study area: 9 siphonophores, 3 pelagic tunicataes and 7 chaetognaths. The dominant species from siphonophores were the *Diphyes dispar*. In this study also, the most dominant species of chaetognaths was *Sagitta hexaptera* and *Salpa fusiformis* was the predominant species in the group of salps.

One main difficulty in the study of gelatinous zooplankton was in the identification. Due to the fragile nature of this group of organisms identification based on morphological features is difficult and often confusing. In order to confirm various specimens collected during cruise No. 342 molecular

analysis was carried out and the verified mtCOI sequences were submitted to the National Center for Biotechnology Information (NCBI) Gen Bank database using the BARCODE submission portal. A total of four accession numbers were received KU364621-*Cosmocalanus darwinii*, KU364622-*Liriope tetraphylla*, KU529462-*Diphyes dispar*, and KU647643-*Sagitta bedotti*. Among this KU364622-*Liriope tetraphylla* and KU529462-*Diphyes dispar* are first time reports from India.

Since the project got over in December 2015 further studies could not be carried out. The region from Mangalore to Gujarat along the west coast of India could not be covered. In order to understand the seasonal variation and trophic relationship more cruises during each season is needed.

#### g) A Brief Report On The Development Of Jelly Fish Excluder Device (JFED) for Stake Nets.

PI: Dr. B. Manojkumar

Intrusion of jelly fishes into the backwaters of Kerala is a phenomenon occurring every year during the pre-monsoon months of March to May and may extend up to the beginning of June. The high salinity prevailing in the backwater during this period is considered as the reason for this massive intrusion. With the onset of monsoon the salinity of the lake decreases and this result in either death of jelly fish or their migration back to sea. The blooming of jelly fish hampers the fishing activity of the traditional fishermen of the area. Among the various gears operated in the lake, the stake net is a very prominent fixed gear. This is a conical bag net fixed on stakes and the net is operated according to tides. These nets are generally operated during the low tide when the water flows back to the sea. These nets trap the fishes which pass through them in the water flow. Fishermen find it very difficult to operate their stake nets when jelly fishes proliferate in the lake as their nets get filled up with jelly fish within minutes. This often results in their gear getting destroyed, stakes getting damaged, wastage of human effort and time, wastage of catch and other related economic losses. As a result, fishermen in the area are unable to operate the stake nets during the period to catch shrimps and other fishes which they would normally catch. In order to help the fishermen to operate the stake nets during this period also, a Jelly





Fish Excluder Device (JFED) was developed.

The net with the device was tested at Muttamparambil 'Oonipadu' in Kumbalam. It was fitted in the stake net of Shri Shreejith, Chakalaparambil, Kumbalam, Ernakulam. A net without the device served as a control. When there was about 99% exclusion of jelly fishes in the net fitted with the device, the control net got filled up with the jelly fish within minutes and hauling up of the net became extremely difficult. The fishermen were forced to open the cod end and let out the jellyfish along with the other catch.

The fishermen are very satisfied with the technology and many others are interested in adopting this method. A further refinement of the equipment could be possible.

Dr. Devika Pillai (Associate Professor and Shri Rakesh C.G. (SRF in NSPAAD project) were also involved in the development and testing of the device.

### 3) School of Aquatic Food Products and Technology

School of Aquatic Food Products and Technology carries out research on applied biochemistry and nutrition, microbiology, quality assurance and management, waste management, preservation and packaging techniques and by-product utilization. Significant research achievements of the school include the development of a depuration system for processing bivalves; purification and characterization of antibacterial and anticancer agents from the accessory nidamental glands and ink of cuttlefish (*Sepia pharaonis*); extraction of astaxanthin from deep-sea prawn shell with antioxidant and food colouring properties; development of a solar tent drier; and the development of various fish mince products such as sausages, burgers, patties and cakes from freshwater fishes.



#### 4) School of Ocean Science and Technology

School of Aquatic Food Products and Technology carries out both basic and applied research in various areas of biological, chemical and physical oceanography, geology, geophysics, applied marine geosciences, polar oceanography and marine pharmacology.

The following research centres functions under the school of Ocean Science and Technology

##### a) Center for Bioactive Substances from Marine Organisms

PI: Dr. Sajjan George (2012-2014)

Dr. E. Punnedath Preetham (2015)

Project Scientist: Ms. Gayathri PV

Research Scholars: Ms Anu Remanan

The objective of this research centre is to identify and characterize marine bioactive compounds with a view to develop drugs and nutraceuticals.

A Government of Kerala funded Plan Project is also being undertaken for establishing a water and soil analysis laboratory.

#### 5) School of Ocean Engineering and Underwater Technology

School of Ocean Engineering and Underwater Technology carry out advanced research in areas such as ocean and harbour engineering, underwater technology, remote sensing and GIS, ocean energy, coastal and offshore engineering, ship building and marine engineering and acoustics.

#### 6) School of Fishery Environment

School of Fishery environment undertakes research on global change including climate-related phenomena, monsoon studies, hydrobiology, coastal zone management, meteorology and disaster management.

#### 7) School of Management and Entrepreneurship

Research on fisheries economics and management, statistics, gender studies, socio-economic and legal aspects and business administration are carried out under the auspices of the School of Management and Entrepreneurship.

The following research centers also function under the School of Management and Entrepreneurship

##### a) Centre for Survey and Appraisal of Socio-Economic Status of fisherfolk

PI: Prof. Dr. M.S. Raju

## b) Centre for Livelihood security and development issues among fisherfolk of Kerala

PI: Dr. V. Ambilikumar

Research Scholars: Mr. Rajeesh PM

Field Assistants: Ms Resmi MR, Ms Shiny Peter, Ms. Anju MS



## c) Impact assessment study of Mahatma Gandhi National Rural Employment Guarantee Scheme in Alappuzha District (funded by the State Institute of Rural Development, Kerala)

Principal Investigator: Dr.V.Ambilikumar

Co - Principal Investigators: Dr.M.S.Raju and Shri.Mathew Sebastian

The study focused on the evaluation on the efficacy and effectiveness of the Mahatma Gandhi NREGS intervention, identification of issues relating and implementing, suggesting possible remedies and documenting success stories for replication of good practices. The study was conducted in Alappuzha District of Kerala State.

### Highlights of the study:

1. The study revealed that, though the scheme is open for any person who has attained the age of majority and is willing to work, 97.3 per cent of the beneficiaries covered under the sample was women (Out of the 700 beneficiaries, 681 were women). Only the remaining 2.7 per cent (19 out of 700) was men. Thus, it points to the fact that the Mahatma Gandhi NREGS has helped to empower women, in Alappuzha District. However, it is not a lucrative job for men.
2. The age-wise categorization of the respondents brought to light that the Mahatma Gandhi NREGS to a considerable extent, accommodates the poorest among the poor. Approximately 28 per cent of the beneficiaries under the scheme were of the age of 51 and above. This indicates



towards the fact that the Mahatma Gandhi NREGS has been proven to be an effective tool for providing livelihood to the aged and weaker section of the society.

3. The fact that large number of (76 per cent) beneficiaries belongs to the BPL category and 75.71 per cent is from backward classes (57 per cent OBC, 18.14 per cent SC and 0.57 per cent ST) makes it more clear that majority of the beneficiaries of this scheme are the weaker sections struggling to avoid starvation. This supports the fact that Mahatma Gandhi NREGS in the district could bring a large part of the very poor people under the umbrella of economic empowerment. This leads to the conclusion that socially backward classes are the major beneficiaries of the Mahatma Gandhi NREGS. It means that the scheme is moving in the right direction, by strengthening the marginalized groups and weaker classes.

The study found that, approximately 40 per cent of the workers go for other works, whenever there is no engagement under the Mahatma Gandhi NREGS. The remaining 60 per cent fully depends on the Mahatma Gandhi NREGS for their earnings. It means that, 40 per cent respondents are economically empowered as a result of joining the Mahatma Gandhi NREGS; whereas, in the case of the remaining 60 per cent, the scheme offers their livelihood. Thus, as far as the workers are concerned the scheme is highly significant.

#### d) Centre for Field Consultancy and Data Analysis

PI: Prof. Dr. M.S. Raju

The School of Management and Entrepreneurship is also undertaking several externally funded projects supported by national agencies, as well as plan projects funded by the Government of Kerala

#### e) Seasonal Variation in Fish Landing and its Impact on the Livelihood of the Fisher Folk of South-West Coast of India

PI: Dr. V. Ambilikumar

The study was undertaken with the major objective of knowing whether the livelihood of marine fisher folk of Kerala is influenced by seasonal variations in fish landings. The study covered all the coastal districts of Kerala.

1. The study found that non availability of fish, absence of certain traditional fishes, coastal erosion, loss of gears due to rough sea, etc. were the most important, but uncontrollable issues recently faced by the fisherfolk of Kerala as a whole. These issues were reported from all the coastal districts of the State. It is realised

that such issues are the direct and indirect impact of the climate change on the socio-economic condition of the fisherfolk of Kerala. It was also found that certain species are not at all available for the last few years. For instance, Anchovies, Aries and Johnius (big sized) are not available in the southern coast of Kerala.

2. Fish famine is pointed out as the most important problem faced by the marine fisherfolk in the State. Among the respondents, 42.38 per cent have this opinion. Water pollution (25.43 per cent) was another important issue highlighted.
3. It was found that infrastructural facilities are available within 3-4 KMs in most of the marine fishing villages in Kerala. However, in few villages, railway station, freezing plants, cold storage, college, community hall, library and post office are available only at a distance of more than 5 KMs. Though infrastructural facilities are available in the marine fishing villages of Kerala, facilities like hospitals, library, railway station, all weather roads are not easily accessible to the fisherfolk of some villages. This shortage has its own influence in the socio-economic status of the members of this community.

The study revealed that the socio- economic condition of the fisherfolk of Kerala is not par with the general community. The level of education, monthly income, expenditure on food and non -food items, savings habit, hygienic conditions, number of unemployed people, etc. are the real indicators for this. The related data indicated that climate change has already affected the fish landings as a result of which, the socio-economic condition of the fisher folk is also affected badly.

Title of the project	Principal Investigator	Funding Agency	Outlay
Biology, Resource Characteristics, and Stock Assessment of Deep Sea finfishes and prawns in the depth zone 200-1200m along the Southern and Central Indian Ocean	Smt. Alphi Korath	CMLRE	78.60 Lakh
INDO MARECLIM Project	Dr. V. Ambilikumar	European Union through NERCI Kochi	8.00 Lakh
SIRD Project MGNREGS - Fisheries Sector in Alappuzha	Dr. V. Ambilikumar	SIRD	1.00 Lakh

f) Biology, Resource Characteristics and Stock Assessment of deep-sea fin fishes and prawns in the depth zone of 200m – 1200m along the southern and central Indian Ocean

PI: Smt. Alphi Korath

Research Fellows: Mr. Harish K.C,  
Mrs. Viji V  
Mr. Sileesh M S



Observing bulk catch of *Trichirus origa*



Sorting of catch on board sagar sampada



Weighing of individual species samples



Searching for a new species

The main objectives are to study the diversity of fin fishes and deep sea prawns off Southern and central Indian Ocean, assessment of biological aspects and food and feeding of deep sea fishes and stock assessment of deep sea fin fishes and deep-sea prawns. The project team has participated in three cruises, two in the South-eastern Arabian Sea (SEAS) and one in the Andaman Sea.

Research Highlights: Seventy six species of fin-fishes and twelve species of prawns were identified. The ichthyofaunal diversity of mesopelagic zone increases with increase in depth. Deep sea fishes mainly feed on benthic and epibenthic organisms like fishes, shrimps, crab and squids. The presence of small deep sea fishes (*Myctophids*, *Platycephalus* sp.) and commercially important shrimps (*Aristaeus*, *Plesionika* sp, etc.) in the stomach of deep sea fishes caught from the depth range 200-1000m, is an indication of surplus abundance of such group of organisms in the Indian EEZ.

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## Year wise Details of Passed out candidates

Name of the Course	2011			2012			2013			2014			2015		
	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls	Total
<b>Ph.D.</b>	-	-	-	-	-	-	-	-	-	-	1	1	-	1	1
<b>BFSc.</b>	10	16	26	7	20	27	8	29	37	18	27	45	12	34	46
<b>MFSc.</b>				4	0	4	2	2	4	2	9	11	3	3	6
<b>MBA</b>	-	-	-	-	-	-	-	-	-	6	17	23	7	13	20
<b>MSc. (Biological Oceanography and Biodiversity)</b>	-	-	-	-	-	-	-	-	-	2	10	12	5	19	24
<b>MSc. (Physical Oceanography and Ocean Modelling)</b>	-	-	-	-	-	-	-	-	-	2	0	2	2	1	3
<b>MSc. (Food Science &amp; Technology)</b>	-	-	-	-	-	-	-	-	-	-	-	-	5	8	13
<b>MSc. (Applied Geosciences)</b>	-	-	-	-	-	-	-	-	-	-	-	-	3	1	4
<b>MSc. (Remote Sensing &amp; GIS)</b>	-	-	-	-	-	-	-	-	-	-	-	-	1	1	2
<b>M.Tech. (Integrated Coastal Zone Management)</b>	-	-	-	-	-	-	-	-	-	-	-	-	2	2	4
<b>LLM (Maritime Law)</b>	-	-	-	-	-	-	-	-	-	-	-	-	3	0	3

# Extension

## Brief Description of the Directorate

Directorate of Extension established under the Kerala University of Fisheries and Ocean studies promotes the development of fisheries by way of providing necessary information, imparting training and other extension support continuously to the fisherfolk and fish farmers. In addition to the dissemination of innovations in the field of aquaculture and fish processing technologies, it also helps to identify the problems faced by farmers and offers solution.

The field level trainings, demonstrations and awareness camps organizing at various centres will help the farmers to increase their level of knowledge, developing skill and changing their attitude which in turn contributes improvement in production and thus their quality of life.

The Directorate of Extension has projects and programmes aimed at the empowerment of women through income generating activities by way of providing self-employment and motivating them in taking up gainful employment which will lead to ensure gender equality in all aspects of life.

## Details of Extension Projects

### ❖ KUFOS funded Extension Activities:



KUFOS funded extension activities or services include Village Adoption for empowerment and capacity building ensuring livelihood of Fisherfolk in Central Kerala, Farm Advisory Services for Fisheries, Fisheries Technical and Portal Unit, Farm Radio station and Earn while You learn programme. A centre for Indigenous Knowledge of fisherfolk-looping traditional knowledge and Science is also functioning at the University focusing on the extension activities.

### ❖ Externally funded Extension Activities:

The project, titled 'Sustainable Fisheries Development for Rural Empowerment and Food security in Puthenvelikkara Gramapanchayat' in Ernakulam district, funded by Rashtriya Krishi Vikas Yojana (RKVY) Scheme of the Ministry of Agriculture and Farmer Welfare, Govt. of India is the externally funded extension programme at the University.

### Success Story of 'Samagra Matsyagramam' project

The SamagraMatsyagramam project of Kerala University of Fisheries and Ocean Studies (KUFOS) was a huge success in Puthenvelikkara Panchayat. The project, which was aimed at empowering fish farmers in the Panchayat, made a good impact among the aqua farming community. KUFOS initiated the project, titled 'Sustainable fisheries development for rural empowerment and food security in Puthenvelikkara Grama Panchayat', with the financial support of RKVY with the involvement of the Department of Fisheries, Govt. of Kerala.

KUFOS helped the farmers in the Panchayat by providing training and technical assistance for capacity building, supplying inputs such as fish seeds and materials for the implementation of diversified farming practices. The diversified farming practices included freshwater farming, brackishwater farming, cage culture, pen culture, integrated farming, ornamental fish culture and net-based cage culture. Various seminars, workshops, training programmes and classes were also organised by the University to the fish farmers. In addition, the project helped to enhance the stock of indigenous fish species in the inland resources.

The impact of the Samagra Matsyagramam project was remarkable. It helped to woo the youth into fish farming, which improved their living standard. In general, the project helped increase the production of fish and allied enterprises, thereby generating income, promote food and livelihood security and reduce poverty, by utilising the highly prospective fresh and brackish water resources in the Panchayat.

At the initial level, KUFOS introduced fresh and brackish water fish farming in all suitable water bodies, including homestead ponds, public ponds and other open water bodies followed by the introduction of ornamental fish culture as a means of rural livelihood. Cage culture and pen fish culture were introduced, later, in the public water bodies. KUFOS developed the farming practices in the area, by organising individuals and forming farmer groups.

### Cage Culture of brackishwater fishes

It was KUFOS which popularised the technology of Cage Culture in the district, and now it is being extended to all over the State as the



best source for income. Through the project, KUFOS proved that the large number of open water bodies available in the State could be effectively utilised to increase the aquaculture production with introducing the practice of cage culture. A variety of species was cultured in cages as part of the project. KUFOS has standardised the technology of cage culture of various species such as the 'state fish of Kerala', Pearl spot (Karimeen), Sea Bass (Kalanchi), Nile tilapia, Red Snapper (Chembally) and Giant Trevally (Vatta). Different models of cages, which were made of using bamboo frame, GI frames, angler floats etc., fish seeds and feeds

were distributed to the beneficiary groups. Field trials conducted with the participation of farmers proved that the technology is cost effective, easy to manage with less capital investment and can be adopted by the individuals or farmer groups with a production of 40-45 kg/m<sup>3</sup>.

The success of the cage culture practice made this technology popular among the fish farming community. A women activity group in Thiruthoor in the Panchayat, formed by KUFOS yielded a record harvest of 250 kg of Pearl spot after a six-and half month's duration of farming. The group earned an approximate profit of Rs. 1.25 lakh from four cages with a size of 1.5 metre length, 1 metre width and 1m depth.

The samagramatsyagramam project of KUFOS popularised the cage culture in the district. Earlier, the cage culture of seabass, which was set up in Kakkamadanthururth, produced fish with an average weight of 1.5 kg, with a survival rate of 80 percent. This had brought the farmers in the region a national award for the 'Best Cage Farmers group' in the country. The success of the first phase of the project prompted KUFOS to do the farming of different species.

### Chinese Net-based Cage Culture

Depletion of fish catch in the Chinese dip net and the discarding of the juveniles of economically important varieties of euryhaline species were the major problems faced by the stakeholders in the State. KUFOS introduced a new technology to help the Chinese net operators to overcome the situation. The University, as part of the SamagraMatsyagramam project, developed a new cage farming practice using the platform of Chinese dip net as the frame work for the cage. A simple cage of size 2mx2mx2m (8m<sup>3</sup>) was fixed below the platform of the Chinese net and along the sides of the pathway leading



to the net. The fish such as red snapper and trevallies of size 5-8 cm caught in the Chinese dip net were immediately stocked in these cages for a period of 6-8 months. A production ranging from 50-120 kg could be achieved, which was an additional income to the operators.

### Pen Culture

The varsity also popularised a special farming practice, Pen culture, as part of the project. It provides as an alternative means for additional utilisation of backwaters of the State so as to increase the fish production. Pen culture of species such as Pearl spot, milkfish and trevallies were successfully carried

out. Farmers residing in and around the proposed site were organised to form beneficiary groups and various inputs like net frames, seeds and feed were distributed to them. It helped to augment the fish production, generating income, promoting food and ensuring livelihood security to the fish farming community.

As a whole, the Samagramatsyagramam project of KUFOS scripted a new history in fish farming, by attracting all generation to engage with farming practice and boosting the aquaculture production of the State. The project created favourable atmosphere for the farmers. Even after the project, the farmers are now self-empowered to continue their farming venture and have extended the same to more areas.

### Vannamei Revolution, another success story

Kerala University of Fisheries and Ocean Studies (KUFOS) successfully developed the farming model of Pacific white shrimp, *Litopenaeus vannamei*; an exotic shrimp variety, fully suitable to Kerala's brackishwater ecosystem. The first-ever trial farming of the white-leg shrimp in Kerala, launched by KUFOS at its Fisheries Research Station in, yielded bumper harvest, turning the pilot study into a huge success with recording a better growth rate and 85 percent of survival of the species.

KUFOS started the trial farming with an aim to demonstrate and develop model farming system for *L. vannamei* suitable for the peculiar brackishwater ecosystem of the State. Under this programme, 40,000 nos. of specific pathogen free (SPF) seeds of 'whiteleg shrimp' werestocked in one pond having an area of 1000 square metre (0.1 Ha). During the farming, a reservoir and an effluent treatment system (ETS) was maintained and set up bio-fencing, bird fencing, crab fencing and other bio security measures as per regulations.



After 94 days of farming, a catch of around 650 kg was harvested from one pond itself. The trial farming proved that 5.5 to 6 tonnes *L. vannamei* could be produced from one hectare, which would result in an approximate profit of Rs 14 lakhs. The newly demonstrated *L. vannamei* farming model of KUFOS following stringent regulatory measures as per the guidelines issued by the Ministry of Agriculture and farmers Welfare, Govt. of India is particularly suitable to the conditions of traditional farming areas such as 'Pokkali' and 'Kaipad' fields in the State. The success

of the pilot scientific farming trial of this high valued as well as popular variety of shrimp would make easier to usher in a 'Vannamei Revolution' in the State in coming years.

### Outreach programmes

In the last four years KUFOS had organized several Training programmes/ Awareness Camps/seminars/ workshops on diversified methods of aquaculture such as freshwater fish farming, brackish water fish farming, ornamental fish culture, cage culture, socioeconomic data collection, gender studies in fisheries, etc.

**workshop on 'Women in fisheries Sector':** A workshop on 'Women in fisheries Sector' aimed at studying the status of women employed in fisheries sector was organised jointly by the 'PanditKaruppan Chair' functioning at the University and the Centre for Gender studies in Agriculture and Farm Entrepreneurship Development of Kerala Agricultural University (KAU). The workshop observed a number of issues being faced by them such as exploitation at workplace, physical and mental torture, occupational diseases and discrimination in remuneration etc. The gathering emphasized the need to empower women by providing financial, technical assistance as well as awareness cum training programmes. The workshop also highlighted the inevitability of networking of various institutions/ organisations in the sector such as KUFOS, CMFRI, CIFT, SAF and the State Fisheries Department for an integrated approach towards solving the problems of the fisher folk.

**Hands-on- training programme on farming of 'White leg shrimp'**-In order to popularise responsible farming practice of the high valued exotic variety of shrimp, *Litopenaeus vannamei* in the state, Kerala University of Fisheries and Ocean Studies introduced and transferred a set of standardised procedures to more than 30 prioritised farmers from different regions of Kerala. In this connection, a hands-on- training programme on the said subject was conducted at the Fisheries Station of the University located at Puthuvype.



**‘Production-cum-training centre for marine ornamental fishes’:** With the intention to empower fishermen community in the State, a project for the establishment of a ‘production-cum-training centre for marine ornamental fishes’ funded by the Centre for Marine Living Resources and Ecology (CMLRE) under the Ministry of Earth Sciences (MoES) is underway. The project envisages the overall development of marine ornamental fish sector through the promotion of entrepreneurial advantages among coastal fisher folks using low-tech strategies through need

based training programmes. It is also aimed at carrying out research on prioritised fin and shell fish species, conducting extensive survey in order to identify new brackish water as well as marine species for aquarium keeping and popularising this ‘aqua business’ among the local unemployed fisher folks. In this regard, a three day training programmed on ‘marine ornamental fish culture’ was conducted at the Puthuvype Fisheries Research Station of the University. The programmed proceeded through the demonstration of various practices followed in the ornamental fish industry viz. tank setting, keeping and maintenance of aquarium, health management practices, production of bio feeds, breeding and seed production, bio security measures and marketing. The project offers a platform for establishing a university – Community linkage for the sustainable development of marine ornamental fishery in the State.

**Workshop on ‘Diversification of Aquaculture Practices in Kerala: Challenges and Opportunities’:** With the effective utilisation of the of Rashtriya Krishi Vikas Yojana (RKVY) scheme a workshop on ‘Diversification of Aquaculture Practices in Kerala: Challenges and Opportunities’ was organized by the University. The programme highlighted the necessity of making the farmers aware of adopting potential as well as diversified faring practices such as Cage culture and integrated farming.

**Establishment of ‘Ornamental Fish Culture unit cum training centre’:** KUFOS established an ‘Ornamental Fish Culture unit cum training centre’ at Pokalapara tribal colony, located in the vicinity of the most species diverse Chalakudy river near in Thrissur District receiving the financial support from the NABARD, for improving the livelihood of the tribal community in the region. As the ornamental fish culture is one of the most beneficial industries in the world, the project can play a key role in improving the living standards of the tribal community. The University has built capacity among tribes on various operational activities of the industry such as breeding and feeding of fish, maintenance of aquaria, marketing of fish and aquarium products etc.



### Hand book on 'Aquatic Animal Diseases'

As part of the National Surveillance Programme for Aquatic Animal Diseases (NSPAAD) being run in KUFOS with the financial assistance of National Fisheries Development Board (NFDB) KUFOS brought out a hand book on field identification of important diseases of fishes and shrimps. It illustrates different kinds of diseases of aquatic animals occurring under different climates and in seasons in brackish as well as fresh water bodies. The handbook, which is first of its kind in vernacular language; Malayalam, would be highly beneficial to the farmers to identify the diseases and take remedial steps scientifically.

### World Fisheries Day celebrations

In order to reflect the involvement and responsibility with resources and with people those bring us the bounty of oceans, World Fisheries Day (November 21<sup>st</sup>) has been celebrated by KUFOS every year since 2013. In this connection, events such as public rally highlighting the theme 'conservation of fishery resources for the protection of humankind', training programme on 'rescue at sea' by the Indian Coast Guard, seminar on 'application of Indigenous Traditional Knowledge (ITK) for the conservation of fishery resources', exhibition on various aspects in fisheries sector and distribution of awards to best fishermen, best innovative farmer, best fishery planner cum administrator, best fishery educationist and meritorious fisheries student. The functions in the years 2013, 2014 and 2015 were inaugurated by Sri. C.P. John, Member, planning Board; Sri. K. Babu, Minister for Fisheries, Kerala and Prof. Dr. B. MadhusoodanaKurup, Hon. Vice Chancellor, KUFOS respectively.

### India International Food and Agri Expo (IIFAE-2014)

The 6<sup>th</sup> edition of India International Food and Agri Expo was held at KUFOS from October 30<sup>th</sup> to November 3<sup>rd</sup> 2014. Agro-machinery expo, India organic fair, processed food expo and animal husbandry expo, organic coconut based farming systems and farm mechanization, seminars and



demonstrations of various sectors were the major attractions. In addition to providing a platform for exploring business opportunities in the sector by attracting professional exhibitors and visitors, the expo was also a venue for buyer-seller meetings.

### 'Aqua show' prize won by KUFOS

KUFOS secured first prize for the best exhibit of indigenous ornamental fish aquarium in the Kochi International



Aqua show. The exhibit of model of pooyamkutti river ecosystem, a tributary of Periyar, won the prize. In connection with show, the mangrove research centre of KUFOS functional in Puthuvype, Kochi conducted a drawing competition for students.

### **Training programme on 'Brackishwater fish farming'**

With the financial assistance from NFDB, a training programme for brackishwater fish farmers were jointly organized by KUFOS and the

Department of Fisheries, Govt. of Kerala at the research station, Pudukkottai may 2014.

### **Study on MGNREG scheme**

A study was conducted as part of a project on 'Impact Assessment Study of Mahatma Gandhi National Rural Employment Guarantee (MGNREG) Scheme in Alappuzha District' funded by the Kerala State Institute of Rural Development (KSIRD) with a view to understand the impact of the scheme on poverty eradication and empowerment of women and marginalized groups. It was found that MGNREG Scheme helped women to improve their social and economic status by boosting their saving habits through financial literacy among them, bringing down the intensity of communicable diseases through various kinds of cleaning activities in the surroundings of water bodies and increasing the wages in fisheries, construction, coir and agricultural sectors.

### **Training and Expo on 'White leg shrimp'**

In order to popularize the farming model of the exotic white leg shrimp, *Litopenaeus vannamei* to more areas of Kerala; two-day training and aqua-expo was jointly organised by Kerala University of Fisheries and Ocean Studies (KUFOS) and Choice Group from 20<sup>th</sup> to 21<sup>st</sup> August, 2015. The University project offers a unique opportunity to the shrimp farmers in the State, as it helps them to start the vannamei farming without investing a huge amount as capital in the initial stage of the venture. The University has taken steps to obtain the recognition of Aquaculture Stewardship Council (ACC), a global Eco labelling agency headquartered in Netherlands, for getting easy access in foreign market. KUFOS also proposed to form fish farmer societies so as to export of the produce without any intermediaries.

### **Mangrove awareness programme- Puthuvype**

A training programme on fish culture was organized by KUFOS in association with the leading daily "Malayala Manorama", VFPC, and Police department at Layam Ground, Thripunithura on 25<sup>th</sup>. The programme was planned with

the objective of creating awareness among the laymen about backyard fish farmer.

### **Workshop on Ornamental Fish Culture**

One day workshop on 'Scope of ornamental fish culture as an enterprising avocation' was held at KUFOS Seminar Hall on 7<sup>th</sup> July 2014. The workshop was organised in association with the leading daily "MalayalaManorama", who gave adequate publicity through their News Paper in addition to providing kits to around 100 trainee farmers at each place.

### **Exhibitions Conducted/Attended**

#### **2011**

- ❖ Participated in the Haritholsavam festival held at Maradu from 3/9/2011 to 7/9/2011(5 Days)
- ❖ Exhibition at Ernakulam temple ground organized by Swadeshi Science Movement from 15-12-2011 to 20-12-2011 and won second prize in fresh water aquarium. (6 days)

#### **2012**

- ❖ Participated in the Exhibition held at Kottayam 24<sup>th</sup> Science Congress from 29-1-2012 to 31-2-2012 (3 days)
- ❖ Participated in India- International Aqua-show held at Jawaharlal Nehru Stadium from 10-2-2012 to 15-2-2012 and won 1st prize in newly introduced variety and best designer Aquarium. (6 days).
- ❖ Participated in the regional Industry Meet Organized by TNAU , Coimbatore in association with CII and ICAR on 25<sup>th</sup> April 2012 at TNAU Campus, Coimbatore and put up a stall in the exhibition organized on the side lines of the meet (1 day)
- ❖ .Swasraya Bharath-2012 30/11/12 to 5/12/12-Kochi (6 days)
- ❖ Fish and Food Fest-2012 from 16-12-12 to 21-12-12-Pathanamthitta (6 days)
- ❖ Participated in the Exhibition at Leo-XIII Public School from Nov 5<sup>th</sup> to 9<sup>th</sup> -2012 (5 days)
- ❖ Exhibition SwasrayaBharath 2012 from 30<sup>th</sup> -Nov to 5<sup>th</sup> December at Jawaharlal International Stadium (6Days)
- ❖ Exhibition Organized by Kerala State Bio-diversity Board Thiruvananthapuram, from 21-12-2012 to 30-1-2012 and secured third place among the government category. (10 days)

#### **2013**

- ❖ Exhibition organized by KSCSTE at Kanakakkunnu Palace, Thiruvananthapuram from 28/1/13 to 3/2/13 (7 days)

- ❖ De Aquaria organized by E4 Evevtz at javaharlal Nehru Stadium from 30/3/13 to 9/4/13 (11 days).
- ❖ Exhibition “Onakkazcha” organized by Maradu Municipality from 8-9-2013 to 17-9-2013 (10 days)

## 2014

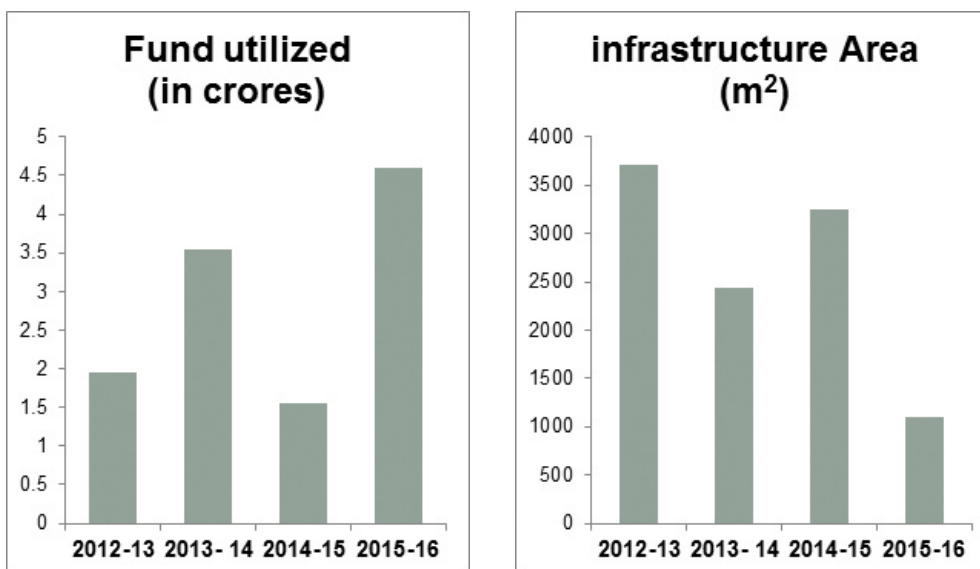
- ❖ International Aqua-show held at Marine Drive from 24/1/2014 to 28/1/2014 (5 days)
- ❖ Educational Conclave Kerala 2014 at dream hotel and set up a stall- 26<sup>th</sup> April (1 day)
- ❖ Professional course guidance seminar by mathrubhumi on 31-5-14 TDM hall Kochi (1 day)
- ❖ Young entrepreneurs summit 2014 Adlux convention centre 12<sup>th</sup> September (1 day)
- ❖ India International Food and Aqua Expo 2014 30/10/14 to 3/11/14 organized by Foundation for Organic agriculture and Rural development and KUFOS (5 days)
- ❖ International Exhibition of organic products from 6<sup>th</sup> to 7<sup>th</sup> Nov-2014 Adlux Convention Centre (2 days)
- ❖ Marine Ecosystems -Challenges and Opportunities(MECOS 2) from 2-5-December 2014 at Kochi (4 days)

## 2015

- ❖ Karshikamela 2015 (Agricultural Fair) at Thodupuzha from 26<sup>th</sup> December to 4<sup>th</sup> January 2015 (10 days)
- ❖ Technological Advances organized by Vidya Academy of Science and Technology 9<sup>th</sup> and 10<sup>th</sup> January 2015- (2 days)
- ❖ World Ocean Science Congress 2015 Organized by Swadeshi Science Congress, KUFOS etc from 5-2-2015 to 8-2-2014.- (4 days)
- ❖ Exhibition at Sanskrit College, Tripunuthura from 14-5-2015 to 20-2-2015. (7 days)
- ❖ Exhibition organized by Kozhencherry Agri-Horti Society (19<sup>th</sup> Pushpamela 2015) at Kozenchery from 22-2-2015 to 1-3-2015. (8 days)
- ❖ Exhibition-professional course guidance seminar at TDM hall, Kochi on 30<sup>th</sup> May 2015 organized by Mathrubhumi printing and Publishing company ( 1 day)
- ❖ International workshop on marine ecosystems and climate change in India on 30<sup>th</sup> and 31<sup>st</sup> July-2015

# INFRASTRUCTURE

The infrastructure development activities are going on in full swing classified and shown in the following head based on the type and the status of the work carried out. The quanta of infrastructure development based on the fund utilized in the last fiscal years are shown in the graph.



The developments are classified in the following categories depending on the present status of the individual work or progress of the work are exhibited in chart.



## Details of the projects and estimate and the source of funds for completion

Sl. No.	Name of the project	Total project cost (In crores)		Amount spent (In crores)	Built up area (m²)	Area to be completed (m²)	Amount required for completion (In crores)	Source of funds for completion
		Estimate amount	Fund allotment					
PROJECTS COMPLETED								
1	Academic block -	62.00	16.50	16.50	3704	8296	45.50	Govt.of Kerala ,RIDF NA-BARD,I-CAR one time grant
2	Swimming pool	0.95	0.95	0.95	250	—	—	—
3	Arch gate	0.5067		0.4425	20	—	—	—
4	Library building	1.00	1.00	1.00	774	—	—	—
5	PG Hostel women	4.50	2.50	2.00	960	500	2.00	ICAR
6	Research complex	4.00	1.55	1.56	430.67	430.67	2.50	Govt.of Kerala , NABARD
7	Amenity centre	5.00	2.60	2.60	3250	3000	2.00	Banks, KUFOS fund
8	Two schools at Fisheries station Puduveypu	5.00	2.00	2.00	1100	1500	3.00	Govt.of Kerala , ICAR
PROJECTS - WORK IN PROGRESS								
1	Construction of PG Hostel men	4.50	2.00	2.00	960	1000	2.50	Govt.of Kerala , ICAR
2	Construction of Residential complex. -	5.00	2.00	2.00	193.92	270	3.00	
3	Construction of Seminar complex	7.00	2.50	2.50	930	2000	4.50	Govt.of Kerala , ICAR , NABARD KUFOS Fund
NEW PROJECTS SANCTIONED AND PROGRESS								
1	Construction of library, hostel and other amenities	1.50	1.50					

## 1. ACADEMIC BLOCK OF KUFOS HEAD QUARTERS

The proposed building is a five storied load bearing structure with a total plinth area 11975 sq m in which 2395 sq m in each floor. It is proposed to be constructed in different phases and the work is entrusted with M/s. KSCADC.



First and second phase of the construction was completed, third and fourth phase are progressing. The first phase includes various labs in the ground floor. The second phase includes class rooms, staff rooms, stair cabin and toilets in ground floor, first floor and second floor. The third phase includes computer lab, PG lab etc in ground floor, first floor and second floor. The fourth phase includes UG labs, toilets, stair cabin etc in ground floor, first floor and second floor. The facilities such as mini conference room, PG class rooms etc are also be provided in the fifth phase.



## 2. LIBRARY BUILDING COMPLEX

New two storied library building complex was constructed in the western campus for an area of 774 sqm. Hon'ble Minister for Fisheries, Ports and Excise Sri. K. Babu inaugurated the university central library on 23rd May 2015. The building consists of library, reading room and internet browsing room. It is the first completed building after the establishment of KUFOS. The community



information corner at the KUFOS library is a good initiative to connect the University with the fishermen community. The fish farmers and the fisher folks will be able to access publications and CDs on various topics such as fish farming, organic feed formulations, disease diagnosis, sea and coastal laws, value additions, ocean phenomena and traditional knowledge offered by the University library at the community corner.

### **3. AQUARIUM & MUSEUM COMPLEX**

Aquarium complex has an area of 240 Sq. m and is located in the western campus of KUFOS. The university has a good museum for fishes, crustaceans, molluscs, aquatic plants and parasites. There is also a public aquarium of fresh water fishes maintained by the School of Aquaculture and biotechnology. Hon'ble Minister for Fisheries, Ports and Excise Sri. K. Babu inaugurated the Aquarium complex.

### **4. HOSTELS for PG Students**

Separate two storied buildings are constructing by BSNL Civil wing for PG hostel for ladies and men having total plinth area 1156 sq.m. The first phase consists of 688 sq.m.in ground floor and 234 sq.m in the first floor. The ground floor consists of twelve triple seated rooms for students, warden room, waiting room, care taker and store room with two toilet blocks on either ends. The dining room is in the ground floor which is at the back side of the front portion and can serve 80 persons at a time. Pantry, kitchen, work area and rest room for canteen workers with attached toilet are abutted with dining area. In the first floor same number and type of rooms for students are arranged and thus the total capacity is seventy-two students'.TV room, recreation room and washing room also arranged in the first floor. The first phase work of ladies PG hostel will be completed soon. Similarly, the first phase of the work for Men's hostel for PG students is initiated and in progress.

### **5. RESEARCH COMPLEX**

Recently university got a well equipped two storied research complex and includes molecular lab, microbiology lab, histopathology lab, processing hall, aqua clinic etc with modern analytical instruments. These facilities provide an absolute assistance to the researchers to carry out various studies achieve their goals.

In addition, other laboratory facilities like Wet lab, Instrumentation, Remote sensing , Microbiology and Bio chemistry were installed for all BFSc, MFSc, MSc, MTech courses under various departments.

### **6. ARCH GATE**

BSNL Civil wing was entrusted with the construction work of New Arch Gate. The iconic arch gate has a length of 20m with RCC ornamental sloped roof standing over 12 columns with a watchman cabin of size 2.50mx2.50m in centre which has been designed in traditional Kerala style. Hon'ble Minister for Fisheries, Ports and Excise Sri K Babu laid the foundation stone for an



Arch Gate at the Headquarters of Kerala University of Fisheries and Ocean Studies (KUFOS) on 12th January 2015. The construction work has completed in fast track and inaugurated on September 2015.

### 7. SWIMMING POOL

Since swimming is a part of the curriculum for B.FSc students, a swimming pool has constructed (M/S. KSCADC) and commissioned on October 2015 in the KUFOS campus. The pool has a dimension of 25mx10m with four tracks, four starting blocks, all round deck slabs, with spring board for diving, changing room facilities for boys and girls and water filtration units.



### 8. COMMON AMENITY CENTRE

BSNL Civil wing was entrusted with the construction work of the common Amenity centre (1725sq m.) at the

Headquarters of Kerala University of Fisheries and Ocean Studies (KUFOS) in Madavana junction. The proposed RCC building with three stories having plinth area 575 sq.m in each floor. The total plinth area of the It is proposed to construct as phased manner and first phase consists of 225 sq m. The building accommodate fish stalls for marketing the products from the fish farms of the university, fish kiosks to sell value added products, co-operative society, banks, ATM, post office, super market, students centre, parking space as per by-laws etc. Hon'ble Minister for Fisheries, Ports and Excise Sri. K. Babu laid the foundation stone on 10th April 2015 and the work will be completed soon.

### 9. HATCHERIES

University have hatchery facilities for carp, giant freshwater prawn, and ornamental fish breeding and rearing unit. A fish nutrition and feed technology lab also to address the various nutritional requirements for brooders as well as the young ones rising in the hatcheries.

### 10. GROW-OUT FACILITIES

We have A total of 54 ponds (excluding the 3 ponds currently on lease) with a water spread area around of 2 ha in the western campus drawing water from the Vembanad Lake. A detail lay out sketch with dimensions and character of the ponds is attached with for reference. Ponds are demarcated

as Freshwater ponds (FWP 1 to 10) and Brackish Water Ponds (BWP 1 to 44) based on the nature of influx water from Vembanad Lake. Usually, all the brackish water ponds are freshwater in nature during the months from June to October and chances with rise in salinity in the lake and can go up to 22-24 ppt during summer seasons. All the brackish water ponds (44) are tide-fed ponds through the feeder canals lead from the lake and freshwater ponds (10) are rain fed. In addition, we have 10 concrete cement ponds for nursery rearing.

## **11. FISHERIES STATION, PUDUVEYPU DEVELOPMENTS**

### **a) TWO SCHOOLS AT FISHERIES STATION PUDUVEYPU -**

The proposed building for two schools shall be RCC framed structure for Ground floor and gal valium sheet roofing with steel roof truss for first floor with floor height 3.80 m. for both floors. The plinth area of each floor is 755sqm (8124 sq ft) each and the total plinth area of the ultimate building is 1510 sqm (16248 sq ft). The present phase of construction shall be half of ground floor including staircase and first floor over it of total area 748 sqm (8048 sqft). The ground floor of the proposed building consists of class rooms, director's room, labs, and seminar hall and toilet blocks. In the first floor same area with class rooms, staff room, labs, HOD and toilet blocks. The foundation stone for the construction two schools at Fisheries Station Puduveyypu, was laid on 25th October 2014, by Shri.K.Babu, Hon'ble Minister for Fisheries, Ports and Excise.

### **b) HATCHERY SHED**

M/S. FIT was constructed the single storied building for an area of 140 sq.m with steel roof truss. The building accommodates mangrove nursery and shrimp seed products for *L.vannamie* fish culture.

### **c) COMPOUND WALL**

The compound wall has been constructing in a phased manner. In the first phase 186meters of length was constructed by M/S BSNL in the north east direction. In the second phase 120meters of length was constructed by M/S FIT in the south west direction. The third phase construction will be commenced soon by M/S BSNL.

## **12. REGIONAL CENTRE AND ADMINISTRATIVE OFFICE CUM GUEST HOUSE COMPLEX OF KUFOS AT THIRUVALLAM**

Hon'ble Chief Minister Sri Oommen Chandy inaugurated the first Regional Centre of Kerala University of Fisheries and Ocean Studies (KUFOS) in Thiruvallam, Thiruvananthapuram on 6th January 2015. He also laid the foundation stone for an Administrative Office-cum-Guest House in the Centre. This Regional Centre at Thiruvallam will focus on various research activities such as development of technologies, fish processing, value addition, fish disease diagnosis, bioactive products and fish conservation. The centre will also introduce programmes for the empowerment of fisher folk in South



Kerala. Studies will be conducted to analyse the socio-economic status of the fishermen in the area and will take remedial steps to their upliftment. In order to bring out the research output to the benefits of the targeted community, the Centre will also conduct field training, awareness programmes, integrated fish village projects and other extension activities. The Centre in Thiruvallam will also provide technical assistance to various projects being initiated by the State Fisheries Department. An international Business School also will be established at the Centre.

The proposed guest house building is located in 10 acres of land which is much closer to Arabian Sea at an elevated location. The building shall be of load bearing structure with floor height of 3.30 m. The total plinth area of the building is 412 sq m. (4430 sq.ft). The first phase of the construction shall be of ground floor (241 sq m.), to accommodate reception, camp office, suit rooms, kitchen, pantry, dining and toilets. The first phase of the building will be carried out by M/S. BSNL civil wing and shall be completed by December 2015.

# Library and Information System



## 1. KUFOS LIBRARY & INFORMATION SYSTEM

KUFOS Library and Information System (KUFOS-LIS) is envisaged for Collection, Organization and Dissemination of Information especially on Fisheries and Allied Sciences. KUFOS Central Library has well equipped with modern technologies and infrastructure facilities during the report period.

### PHYSICAL FACILITIES

The Library is located at the main campus of the University. The library has acquired all basic Hardware & Software systems essential for modern Library and Information services, with financial assistance of ICAR and other agencies. The new library building was inaugurated recently which is the first fully completed building under KUFOS.



### YEARLY BUDGET LIBRARY

2011-12	Plan 16.8 Lakhs	ICAR 30 Lakhs
2012-13	Plan 5 Lakhs	ICAR 20 Lakhs
2013-14	Plan 30 Lakhs	ICAR 15 Lakhs
2014-15	Plan 20 Lakhs	ICAR 5 Lakhs.
2015-16	Plan 20 Lakhs	ICAR 54 Lakhs

### LIBRARY STAFF

Sri. Kunjumohammed. V. S., Assistant Librarian
Smt. P. V. Vijayalakshmi, Reference Assistant
Smt. Ramya Raveendran, Technical Assistant



*Elevation of the New Library Building*

## 2. BOOKS and JOURNALS (DOCUMENTARY RESOURCES)



During the report period a large number of Books and other resources have added to the library. The present collections are :- Documentary resources include a collection of :-Books- 17200, Current Online Journals – 4000+, Current Indian journals – 95, DDM special collection of rare documents -810, FAO Publication on Fisheries -1050, Bound Volumes– 1200, Reports - 600, Standards and Specifications- 150, Newspapers -10, CD ROM databases -200

### ASFA (ONLINE FISHERIES DATABASE)

The prestigious online database of Fisheries Sector, ASFA is being subscribed at KUFOS Library. It is available through KUFOS LAN on IP authenticated basis. The database reflects the world scenario of fisheries research and development.

## 3. KUFOS DIGITAL LIBRARY

### DIGITAL LIBRARY (Institutional Repository)

The Digital Library & Archive is a digital repository intended to capture, distribute, and preserve scholarly work created by faculty, staff, and students at KUFOS as well as materials of historical value to the University. By offering a central location for depositing these materials, the University Digital Archive makes them available to a wider audience, and helps long-term preservation. Digital Library & Archive is maintained by the University Library, Using open-source POPULAR software named 'D-Space'.

### HARDWARE INSTALLATIONS

1. Installed HP ML350 server
- 2.Installed HP LaserJet Printer
- 3.Installed Kodak i1220 Scanner:
- 4.A4 Document Scanner Installed Kodak 8677288 A4 Flat Bed Scanner.
- 5.Installed and configured external Hard Disk 2TB on the server for D-space data backup.



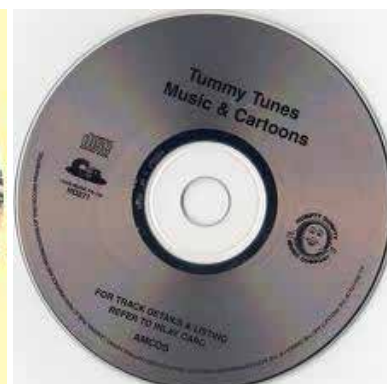
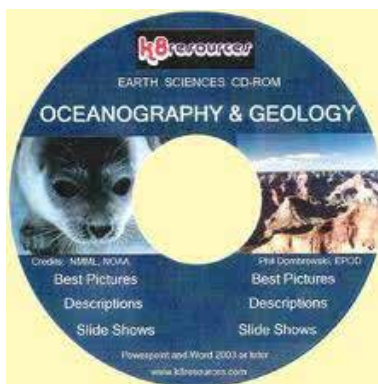
HOME PAGE OF THE DIGITAL LIBRARY 'MEENAM'

## SOFTWARE INSTALLATIONS

Dspace 1.8, with all supporting softwares

## DATA-UPLOADED AT PRESENT.

Around 25000 pages were scanned and uploaded into the D-space. It includes all PG & PhD Theses of KUFOS, FAO Publications and few rare books.



## FUTURE PLAN

KUFOS Library has a large collection of rare documents and ephemeral materials for digitization. Devi Das Menon collection is another important collection. A well equipped digital library development unit has been established in KUFOS Library. The collection will be enhanced gradually.

It was inaugurated by Sri K. Babu, Hon. Pro Chancellor of KUFOS. A good collection of Databases from various agencies like FAO, ICAR etc and many e-books, on CDs & DVDs are available in the library. Readers can access the same on request.

DDM COLLECTION:-The renowned fisheriesscientist Late Sri. M Devidas Menon, magnanimously donated his lifelong collection of Books, Journals, rare documents, printouts and other many valuable documents to College of Fisheries Library, and now it became an integral part of KUFOS Library.



#### **4 ACTIVITIES/ EVENTS.**

KUFOS Library is a centre for Training new Library Professionals, approved by Apprenticeship Board of Govt. of India. The Library provides User Orientation Programmes to users in Literature Search, and training on IT based Library Services. It also conducts various training programmes and Workshops on and off for the technical and professional development of the users as well as the staff. Recently conducted a Workshop on digital library software D-Space, and a ICAR Sensitization workshop at KUFOS. Hon. Vice Chancellor inaugurated both the programmes.

#### **5. FACILITIES**

##### **INTERNET FACILITY**

24 hours 1 GB BSNL Broadband Internet connectivity through KUFOS WiFi-LAN is available in the Library.

##### **SERVICES**

Book Loan, Literature Search, Reference Service, Compilation of Bibliographies, Reprographic Service, Current awareness Service (CAS) Selective Dissemination of Information (SDI) Document Delivery Service, Database Search, Consultancy Service and Data Mining, Guidance and Library Alert on Request.

#### **6. LIBRARY AUTOMATION. (TECHNICAL PROCESSING & AUTOMATION)**

Reading materials are classified according to DDC, and Classified Catalogue Code is used for the traditional cataloguing. Online Public Access Catalogue (OPAC) also in use to locate the documents. The library Automation Software 'SOUL' developed by INFLIBNET of UGC, is used for in-house operations and OPAC. Now KUFOS Central library is being undergone the automation software KOHA, with the special ICAR Grant of Rs. 54 Lakhs. The work will enable WEBOPAC to users ( Library Access through Internet)

#### **7. REFERRAL LIBRARY.**

For referral purpose KUFOS is using number of Libraries of Fisheries Institution in and around Kochi. It includes CMFRI, CIFT, CIFNET, NIO, School of Marine Sciences etc. An effective document delivery system has been established in KUFOS Library. Documents from the libraries of other ICAR Institutions will be delivered by hardcopy as well as softcopy by mail or post on request. Dedicated laser printers and photocopier are available to boost the system.

#### **8. ONLINE SCIENTIFIC JOURNALS.**

CeRA (Online Journal Service of ICAR):- The prestigious Online Journal service of ICAR CeRA (Consortium for e-Resources in Agriculture) is available to KUFOS community through KUFOS LAN ( IP address basis). Around 4000 Foreign and Indian Journals are available with full text, and document delivery service of member library collection is also available through KUFOS Library.

## FINANCE

**KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES, PANANGAD**  
**ANNUAL ACCOUNTS 2011-12**

<b>Opening Balance as on 1.4.2011</b>		<b>0</b>
<b>A Receipt</b>		
Salary account	136264340	
Development Grant	20000000	
Development Grant for Library	3000000	
Experinetal Learning Programme	9400000	
Internal Receipt	2289380	
P.D Account	1171861	
<b>Total Receipt</b>		<b>172125581</b>
<b>B Expenditure</b>		
Salary account	117779963	
Development Grant	14980270	
Development Grant for Library	2996696	
Experinetal Learning Programme	8148917	
Internal Receipt	849675	
P.D Account	460040	
<b>Total Expenditure</b>		<b>145215561</b>
<b>Balance as per office accounts (A-B)</b>		<b>26910020</b>
<b>C Balance as per pass book</b>		
Salary account 67167440116	13455395	
67149674791	1439705	
67149491605	885381	
67147970327	282043	
67149593492	255535	
67158732368	15607268	
<b>Total</b>		<b>31925327</b>
Plan fund 2011-12 but deposited after 31.3.2012	49693000	
<b>D Add</b>		
Development grant 2011-12 but deposited after 31.3.2012	10000000	
UGC amount recovered by KAU	4630920	
Wrongly debited amount	16209	
<b>Total</b>		<b>64340129</b>
<b>Total</b>		<b>96265456</b>
<b>E Less</b> Uncashed cheque		
67167440116	49312875	
67147970327	160450	
67149491605	173750	
67149596492	254500	
67158732368	19248698	
		<b>69150273</b>
Unspent balance at FS Puduveyppu		121593
Amount to be transferred from FS Puduveyppu		1035
Interest received from DG Account		82535
<b>Total</b>		<b>69355436</b>
<b>Balance as per Bank Pass Book (C+D-E)</b>		<b>26910020</b>

FINANCE OFFICER

13/3/13

**Balance as on 31.03.2012**

Salary account	18484377
Development Grant	5019730
Development Grant for Library	3304
Experiential Learning Programme	1251083
Internal Receipt	1439705
P.D Account	711821

**Total Balance as on 31.3.2012****26910020**

## KERALA UNIVERSITY OF FISHEREIS AND OCEAN STUDIES

## ABSTRACT OF ANNUAL ACCOUNTS FOR 2011-12

I. (a) Actual Gross Expenditure 2011-12	114165880
(b) Abatement charges	185940
<b>GROSS EXPENDITURE</b>	<b>113979940</b>
II. (a) Net withdrawal for disbursement (Actual gross - Total Suspense)	101721806
(b) suspense payment for the year	
L.I.C.	787992
S.L.I.	5345
Service Tax	24869
Income Tax	7349336
GPF (Deputationist)	340164
FBS (Deputationist)	400
Festival Allowance	8000
WFS	450
MCA Int	15125
GWS	1500
Professional Tax	181270
Miscellaneous	18150
GPAIS	13600
<b>Other items</b>	
i) Security Deposit released	17399
ii) Refund of double claim to SC Dpt	62440
iii) Amount transferred to Dev gr A/c no. 67158732368	12496000
IV) Amount transferred to PF A/c	1000000
iv) Amount transferred to FS Puduvaypu	4989803
<b>TOTAL</b>	<b>27311843</b>
<b>(b) Suspense transferred to GPF A/c:</b>	
G.P.F.	1043520
F.B.S.	8275
W.F.S	1570
H.B.A	5360
W.F.B.S	1050
W.P.F.	42400
Rent & Water charges	43719
W.W.F.S.	420
<b>Miscellaneous recoveries:</b>	
i) Refund of I.R.	
ii) Marriage Loan	
iii) Retrenchment	
<b>TOTAL</b>	<b>1146314</b>
<b>GRAND TOTAL</b>	<b>130179963</b>
<b>III TOTAL SUSPENSE FOR THE YEAR</b>	
1. L.I.C.	802249
2. Income tax	7156702
3. S.L.I.	6050
4. Service Tax	22139
5. GWS	2120
6. MCA int	15125
7. Festival Advance	8000
8. GPAIS	13600
9. Prof Tax	180820
10. GPF	3860980
11. FBS	31425
12. WFS	6130
13. WPF	176620
14. WFBS	3775
15. WWFS	1510
16. HBA	26646
17. Rent and Water Charges	113869
18. Miscellaneous (Security deposit etc)	16314
<b>TOTAL</b>	<b>12444074</b>
<b>IV. Total Suspense</b>	<b>12444074</b>
<b>V. Total Withdrawals</b>	<b>130179963</b>

**BANK ACCOUNT****Add**

(a) Opening balance as per Office A/c on 1.4.2011	0
(b) Receipt from the Government	122713000
(c) Miscellaneous (wrong credit-RF A/c)	0
(d) Transferred from Internal Receipt A/C	715000
(e) Transferred from PF Account	2300000
(f) Transferred from Development Grant Account	15225
(g) Transferred from Dean Account (Old Salary a/c)	6543579
(h) Transferred from Revolving Fund Account	507438
(i) Transferred from M.Sc.CCA Account	1051575
(j) Received for Puthenvelikkara project	0
(k) Other receipt	1477983
(l) Interest received on Bank account	0
(m) Abatement charges credited	185940
(n) UGC arrear (From Comptroller, KAU)	23154600
<b>Total</b>	<b>158664340</b>
Total Withdrawal	130179963

**Less**

Transferred to DG A/c	10000000
<b>Balance as per office account as on 31-3-2012</b>	<b>18484377</b>

**Balance as per Bank Pass Book as on 31-3-2012** **13455395**

**Add:**

Wrong/mis/transfer debit and Bank Charges upto	2050
Recovered by KAU (UGC arrear)	4630920
Cheque amount not credited	49693000
wrong debit	15887
Miscellaneous	0
<b>TOTAL</b>	<b>67797252</b>

**Less:**

Miscellaneous (Short Drawal)	
<b>TOTAL</b>	<b>67797252</b>
Balance as per Office Account as on 31.03.2012	18484377
<b>Difference</b>	<b>49312875</b>
(Uncashed cheques list attached)	49312875

15-11-12  
  
 FINANCE OFFICER  
 15/11/12

## KUFOS, PANANGAD

## Annual Expenditure Statement for 2011-12

Head of Account Major, Minor & Sub head	Budget Estimate 2011-12	Expendr. Upto 31.03.2012	Actual expenditure as on 31.03.2012
<b>PLAN</b>			
<u>Salaries:</u>			
110 Scientists	0.000	38554723	38554723
120 Tech. & SS	0.000	5757331	5757331
130 Admn.Sup. & GS	0.000	9056230	9056230
152 Health/Medical	0.000	55456	55456
300 TA	0.000	334630	334630
	0.000	53858370	53858370
<u>Recurring</u>			
141 Cost of P.L.	0.000	1637757	1637757
142 Cost of S.L.	0.000	76130	76130
144 PLs Health/Medical	0.000	19600	19600
151 Honorarium	0.000	6440	6440
153 contractual service	0.000	192870	192870
210 Res.Materials	0.000	222576	222576
221 Stry. & Printing	0.000	88473	88473
222 O E & M	0.000	109665	109665
223 Books and Periodicals	0.000	1500	1500
224 Reimb.Uniform cloth	0.000	10250	10250
225 Book bank scheme	0.000	81494	81494
234 RAWEP	0.000	1482180	1482180
232 Students contingencies	0.000	1200	1200
236 Electricity Charges	0.000	1148773	1148773
237 Postage Charges	0.000	12000	12000
332 Mace. of vehicle	0.000	606183	606183
410 Repair & Mace.	0.000	50869	50869
411. Mace. of F.M.	0.000	9466	9466
416 Fur & fixt	0.000	2174986	2174986
418 IT MAINT	0.000	834	834
419 IT Enabled service		2000	2000
420 Equip./Machinery	0.000	90590	90590
423 IT Equipment	0.000	11000	11000
551 Exib/Kissanmela	0.000	152310	152310
561 Workshop/Training	0.000	75170	75170
812 Training	0.000	140000	140000
821 Telephone	0.000	78777	78777
826 Security	0.000	398795	398795
840 Other items	0.000	223553	223553
45 GC	0.000	35000	35000

847 sports items	0.000	5946	5946
848 Affin & Tournments	0.000	111877	111877
849 Studey Tour	0.000	66500	66500
850 Merit Scholarship	0.000	30600	30600
851 ICAR Sch/Fel.	0.000	199920	199920
852 Examination	0.000	1906	1906
921 Farm Development	0.000	670302	670302
924 Vehicle	0.000	726613	726613
honorarium	0.000	4500	4500
NTS	0.000	6000	6000
Legal Charges	0.000	45000	45000
Hono to Violin master	0.000	3000	3000
Master Plan	0.000	167995	167995
MH	0.000	13400	13400
Advt charges	0.000	14092	14092
L H	0.000	47605	47605
Land survey	0.000	235243	235243
Construction of Acad block	0.000	44500000	44500000
	0.000	55990940	55990940
<b>Non-recurring.</b>			
<b>Head Total</b>		<b>109849310</b>	<b>109849310</b>
<b>8810 "RKVY-Puthenvelikkara smagra...."</b>			
120 Tech. & SS	0.000	361032.00	361032
300 TA	0.000	51234.00	51234
Recurring:			
210 Research Materials	0.000	408564.00	408564
332 maint. Of vehicle	0.000	67284.00	67284
924 vehicle	0.000	6050.00	6050
812 Training	0.000	1000.00	1000
<b>Head Total</b>		<b>895164.00</b>	<b>895164</b>
<b>8562 "RKVY- Eco-friendly...Farmer Participatory Approach"</b>			
120 Tech. & SS	0.000	239959	239959
Recurring			
812 Training	0.000	3650	3650
840 Other items	0.000	60049	60049
<b>Head Total</b>		<b>303658</b>	<b>303658</b>

<b>8654 "RKVY- Shrimp Disease.....Management Practices"</b>			
120 Tech. & SS	0.000	108951	108951
300 TA	0.000	22524	22524
<u>Recurring:</u>			
210 Research Materials	0.000	192232	192232
221 Stry. & Printing	0.000	2492	2492
332 Propulsion Charges	0.000	7112	7112
840-Other items	0.000	1112	1112
		334423	334423
<b>Head Total</b>	<b>0.000</b>	<b>334423</b>	<b>334423</b>
<b>Niche Area of Excellence</b>			
420 - Equip	0.000	1321854	1321854
		0	0
<b>Head Total</b>	<b>0.000</b>	<b>1321854</b>	<b>1321854</b>
<b>8528 -DST project "Fish ranching .....)</b>			
120 Tech. & SS	0.000	99300	99300
153 contractual service	0.000	15000	15000
<u>Recurring:</u>			
210 Research Materials	0.000	10000	10000
332 Propulsion Charges	0.000	5000	5000
840-Other items	0.000	5000	5000
		134300	134300
<b>Head Total</b>	<b>0.000</b>	<b>134300</b>	<b>134300</b>
<b>ICAR DEVPT GRANT.....)</b>			
2.1 Equipment	0.000	5225	5225
4.1 Faculty development etc		973167	973167
5.1 Students Amenities	0.000	334779	334779
		1313171	1313171
<b>6522 ICAR seed projects</b>			
120 Tech. & SS	0.000	14000	14000
<b>Head Total</b>	<b>0.000</b>	<b>14000</b>	<b>14000</b>
<b>A)GROSS EXPENDITURE</b>	<b>0.000</b>	<b>114165880</b>	<b>114165880</b>

15/11/12  
 15/11/12  
 FINANCE OFFICER

## KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES, PANANGAD

## ANNUAL ACCOUNTS 2012-13

<b>A Opening Balance as on 1.4.2012</b>		<b>22760675</b>
Salary account	67167440116	<u>13835520</u>
Development Grant	67158732368	6358570
Internal Receipt	67149674791	1439705
P.D Account	67149491605	711821
Pension a/c	67201902800	0
GPF a/c	67149648911	415059
<b>B Receipt</b>		
Salary account	67167440116	<u>217433144</u>
Development Grant	67158732368	8453016
Internal Receipt	67149674791	5136976
P.D Account	67149491605	1695595
Pension a/c	67201902800	900115
GPF a/c	67149648911	5053562
<b>Total Receipt</b>		<b>238672408</b>
<b>C Expenditure</b>		
Salary account	67167440116	<u>141594213</u>
Development Grant	67158732368	1273776
Internal Receipt	67149674791	5912196
P.D Account	67149491605	750997
Pension a/c	67201902800	648682
GPF a/c	67149648911	4655825
<b>Total Expenditure</b>		<b>166299689</b>
<b>Balance as per office accounts (A+B-C)</b>		<b>95133394</b>

<b>D Balance as per pass book</b>		
Salary account	67167440116	<u>134985844</u>
Internal receipt	67149674791	961914
P.D Account	67149491605	1699376
F S Puduveypu	67147970327	122251
F.S Puduveypu- I.R	67149593492	56183
Development Grant	67158732368	8365647
Pension a/c	67201902800	51433
GPF a/c	67149648911	812796
<b>Total</b>		<b>147055444</b>

<b>E Add</b>	Pension fund 2012-13 but deposited after 31.3.2013	200000
	Development grant 2011-12 but deposited after 31.3.2012	2400000
	Amount transferred to FS Puduvepu but deposited after 31.3.2013	40399
<b>Total</b>		<b>2640399</b>

<b>F Less</b>	Uncashed cheque	
	Salary account	<u>45311393</u>
	F S Puduveypu	158782
	P.D Account	42957
	Internal receipt	297429
	F.S Puduveypu- I.R	55000
	Development Grant	8691837
<b>Total</b>		<b>54557398</b>

<b>G Less</b>	Unspent balance at FS Puduveypu	3868
	Amount to be transferred from FS Puduveypu (IR)	1183
<b>Total</b>		<b>5051</b>

**Balance as per Bank Pass Book** ~~(C+D-E-F)~~ **95133394**

(D+E-F-G)

FINANCE OFFICER

**ICAR DEVELOPMENT GRANT  
ANNUAL ACCOUNTS FOR THE YEAR 2012-13**

OPENING BALANCE as on 1.4.2012	6358570
Receipts	4155696
interest received	566991
ICAR closure	1047122
Other Receipts	15000
NAE fund (Fund transferred after 31.3.13)	2400000
Abatement	268207
TOTAL	14811586
Expenditure	<u>11700490</u>
TRASFER <del>CREDIT</del> <i>Debit</i>	1035899
Bank Charges	1387
Closing Balance as on 31.3.2013	2073810
Bank balance as on 31.3.2013	8365647
cheque to be deposited	2400000
Difference	<u>8691837</u>
unchashed cheque	8691837

FINANCE OFFICER

## KERALA UNIVERSITY OF FISHEREIS AND OCEAN STUDIES

## ABSTRACT OF ANNUAL ACCOUNTS FOR 2012-13

I. (a) Actual Gross Expenditure 2012-13	118782236
(b) Abatement charges	239903
<b>GROSS EXPENDITURE</b>	<b>118542333</b>
II. (a) Net withdrawal for disbursement (Actual gross - Total Suspense)	105219627
(b) suspense payment for the year	
L.I.C.	1203005
S.L.I.	7950
GIS	3600
Service Tax	39687
Income Tax	5375855
GPF (Deputationist)	377838
HBA to KAU	16200
Festival Allowance	0
WFS to CUSAT	350
GI	450
GWS to KU	250
Professional Tax	235610
FBS to KU	100
SWF	120
VAT	42747
GPAIS	15200
<b>Other Items</b>	
i) Security Deposit released	53083
ii) Refund of excess amount to DST project	600
iii) Amount transferred to Pension A/C	900000
IV) Amount transferred to PF A/c	5038834
V) Amount transferred for mangrove project	300000
VI) Amount transferred to NABARD project	106000
VII) Amount transferred to FS Puduveyypu	6154474
VIII) Amount transferred to KSCADC	16500000
<b>TOTAL</b>	<b>36371953</b>
<b>III TOTAL SUSPENSE FOR THE YEAR</b>	
1. L.I.C.	1124116
2. Income tax	5407756
3. S.L.I.	8400
4. Service Tax	32538
5. GWS	250
6. Sales Tax	6629
7. GPAIS	14400
8. Prof Tax	233910
9. GPF	6115782
10. FBS	37550
11. WFS	7210
12. WFS to CUSAT	200
13. WPF	413262
14. WFBS	4250
15. WWFS	1700
16. HBA	16200
17. Rent and Water Charges	25235
18. GI	1350
19. GIS	4300
20. VAT	50790
21. SWF	200
22. KBWWF	18931
23. KPCSPF	37650
24. Miscellaneous (Security deposit etc)	0
<b>TOTAL</b>	<b>13562609</b>
<b>IV. Total Suspense</b>	<b>13562609</b>
<b>V. Total Withdrawals (IIa + IIb)</b>	<b>141591580</b>

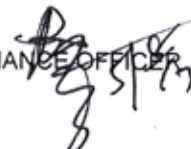
**BANK ACCOUNT****Add**

(a) Opening balance as per Office A/c on 1.4.2012	13835520
(b) Receipt from the Government	182100000
(c) Mtreasury deposit closure	25445025
(d) Transferred from Internal Receipt A/C	5700000
(e) Transferred from PF Account	0
(f) Transferred from Development Grant Account	1304322
(g) Transferred from Old Salary a/c	78333
(h) Transferred from Revolving Fund Account	0
(i) CMLRE project fund	1110000
(j) Fund from DST	920000
(k) Other receipt	24732
(l) Interest received on Bank account	507829
(m) Abatement charges credited	239903
(n) Transferred from PD a/c	3000
<b>Total</b>	<b>231268664</b>

**Less**

Wrong/mis/transfer debit and Bank Charges	2633
<b>Total Withdrawals</b>	<b>141591580</b>

Balance as per office account as on 31-3-2013	89674451
Balance as per Bank Pass Book as on 31-3-2013	134985844
<b>Difference</b>	<b>45311393</b>
(Uncashed cheques list attached)	45311393


 FINANCE OFFICER

**KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES, PANANGAD, COCHIN****ABSTRACT OF ACCOUNTS FOR THE FINANCIAL YEAR ENDED 31-03-2014**

Receipts	Sche dule	Amount	Payments	Sche dule	Amount
Opening balances of various A/Cs	I	11,41,12,743	Plan Expenditure	X	9,46,57,026
Receipts from Govt. of Kerala	II	21,88,93,500	Non-Plan expenditure	X	7,43,30,901
Receipts from External Aided Projects (EAP)	III	1,20,87,800	Payments effected from Internal revenue	XI	11,36,338
Internal receipts	IV	1,04,34,743	Suspense payments	XII	64,77,909 29,23,034
Other misc. receipts	V	2,53,405	Pension & pension related payments	XIII	37,08,625 77,768
Bank interest received	VI	27,56,235	GPF closure/ withdrawal/advance payments	XIV	2,63,72,399
Receipt from ICAR	VII	1,61,53,000	ICAR Expenditure	VII	1,60,63,606
Abatement charges ICAR	VII	22,188	Suspense payment Puduvype	VIII	5,02,125
Puduvype suspense/ abatement	VIII	14,01,611	EAP expenditure	XV	1,02,98,269
Suspense & abatement charges	IX	1,52,09,964	Closing balance of various accounts	XVI	15,47,77,189
<b>TOTAL</b>		<b>39,13,25,189</b>			<b>39,13,25,189</b>



**FINANCE OFFICER  
KUFOS, KOCHI**

**Schedule I : Opening balances of various accounts as on 1-4-2013**

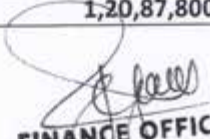
SINo	Names of various accounts	Amount (in Rs.)
1	Treasury Savings Bank A/c	2,01,41,100
2	Salary A/c – 67167440116	8,96,74,451
3	Pension A/c	2,51,433
4	Internal Receipts A/c	8,46,485
5	GPF A/c	8,12,796
6	Special TSB A/c for GPF	3,08,800
7	ICAR DG	20,73,810
8	Puduvype station salary a/c 67147970327	3,868
	<b>TOTAL</b>	<b>11,41,12,743</b>

**Schedule II - Receipts from Govt. of Kerala**

SINo	Details of grant-in-aid received	Amount (in Rs.)
1	Non-plan grant-in-aid	7,45,00,000
2	Plan grant-in-aid	14,42,60,000
3	Western Ghat Project fund	1,33,500
	<b>TOTAL</b>	<b>21,88,93,500</b>

**Schedule III - Receipts from External Aided Projects**

SINo	Names of various projects	Amount (in Rs.)
1	RKVY Project	45,00,000
2	NABARD Project	3,65,000
3	CMLRE Projects	22,60,000
4	NBFGR Projects	16,97,800
5	SIRD project	3,60,000
6	NFDB Project	28,00,000
7	FFDA training	1,05,000
	<b>Total</b>	<b>1,20,87,800</b>

  
**FINANCE OFFICER**  
**KUFOS, KOCHI**

**SCHEDULE - IV**

<b>KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES, PANANGAD, KOCHI</b>		
Internal Receipts Item-wise for the year 2013-14		
	<b>Item</b>	<b>Amount</b>
1	Sale of Fish	97956
2	Sale of Fish Seed	160165
3	Sale of Farm products	207048
4	Application fee	101935
5	Admission fee	174075
6	Tution fee	5894585
7	Other fees	1787736
8	Tender fee	225488
9	EMD/SD	153808
10	Uty. Properties	210319
11	Entry fee to Aquarium	16470
12	Rent	92405
13	Publication	61210
14	Miscellaneous	256489
15	Suspense/Service Tax	23659
16	VAT	5366
17	From FS, Puduveypu	429000
18	Erroneous credit by EAP	400000
19	Bank Interest	137029
	<b>TOTAL</b>	<b>10434743</b>

  
**FINANCE OFFICER**  
 FINANCE OFFICER  
 KUROS. KOCHI

**Schedule VI : Interest received from banks**

SINo	Names of various accounts	Amount (in Rs.)
1	Salary A/c – 67167440116	24,52,189
2	Pension A/c	4,231
3	GPF A/c	38,923
4	ICAR DG	2,58,525
5	Puduvype salary a/c	5,549
	<b>TOTAL</b>	<b>27,59,417</b>
	<b>Less : bank charges</b>	<b>3182</b>
	<b>Net amount credited</b>	<b>27,56,235</b>

**Schedule XV - External Aided Projects Expenditure**

SINo	Names of various Projects	Expenditure incurred at Hqrs.	Amount transferred to Pls	Total
1	RKVY Project	4,01,043	47,20,386	51,21,429
2	NABARD Project	64,800	1,50,000	2,14,800
3	CMLRE Projects	23,08,514	7,60,000	30,68,514
4	NBFGR Projects		6,25,000	6,25,000
5	SIRD project	1,01,200	2,56,000	3,57,200
6	NFDB Project	6,70,326		6,70,326
8	FFDA training		1,00,000	1,00,000
9	Western Ghat Project (from TSB direct)		1,41,000	1,41,000
	<b>Total</b>	<b>35,45,883</b>	<b>67,52,386</b>	<b>1,02,98,269</b>

**Schedule XVI : Closing balances of various accounts as on 31-3-2014**

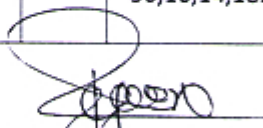
SINo	Names of various accounts	Amount (in Rs.)
1	Treasury Savings Bank A/c	10,43,93,600
2	Salary A/c – 67167440116	3,12,72,537
3	Pension A/c	67,039
4	Internal Receipts A/c	1,01,44,890
5	GPF A/c	44,73,320
6	Special TSB A/c for GPF	19,80,800
7	ICAR DG	24,43,917
8	Puduvype salary a/c	1,086
	<b>TOTAL</b>	<b>15,47,77,189</b>

  
**FINANCE OFFICER**  
**KUFOS, KOCHI**

**KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES, PANANGAD,**  
**COCHIN**

**ABSTRACT OF ACCOUNTS FOR THE FINANCIAL YEAR ENDED 31-03-2015**

Receipts	Sche dule	Amount (Rs.)	Payments	Sche dule	Amount (Rs.)
Opening balances of various A/Cs	I	15,47,77,189	Plan Expenditure	X	11,94,97,136
Receipts from Govt. of Kerala	II	13,94,00,000	Non-Plan expenditure	X	8,45,06,237
Receipts from External Aided Projects (EAP)	III	59,41,046	Payments effected from Internal revenue	XI	25,50,891
Internal receipts	IV	2,15,16,838	Suspense payments	XII	76,18,652
Other misc. receipts	V	18,83,978	Pension & pension related payments	XIII	98,71,705
GPF remittance from KAU		33,820			
Bank interest received	VI	25,75,229	GPF closure/ withdrawal/advance payments	XIV	70,01,204
Receipt from ICAR	VII	1,59,65,000	ICAR Expenditure	VII	1,60,00,751
Other receipts		10,39,527	Last year/re-booking exps		72,527
Abatement charges ICAR	VII	8,935	Suspense payment Puduvype	VIII	0
Puduvype suspense/ abatement	VIII	17,27,085	EAP expenditure	XV	70,17,777
Suspense & abatement charges	IX	1,65,07,203	Closing balance of various accounts	XVI	10,74,77,302
		2,38,332			
<b>TOTAL</b>		<b>36,16,14,182</b>			<b>36,16,14,182</b>

  
**FINANCE OFFICER**  
**FINANCE OFFICER**  
**KUFOS, KOCHI**

Opening balances of various A accounts as on 1-4-2014

SINo	Names of various accounts	Amount (in Rs.)
1	Treasury Savings Bank A/c	10,43,93,600
2	Salary A/c – 67167440116	3,12,72,537
3	Pension A/c	67,039
4	Internal Receipts A/c	1,01,44,890
5	GPF A/c	44,73,320
6	Special TSB A/c for GPF	19,80,800
7	ICAR DG	24,43,917
8	Puduvype salary a/c	1,086
	<b>TOTAL</b>	<b>15,47,77,189</b>

**Schedule - II**Receipts from Govt. of Kerala

SINo	Details of grant-in-aid received	Amount (in Rs.)
1	Non-plan grant-in-aid	8,94,00,000
2	Plan grant-in-aid	5,00,00,000
	<b>TOTAL</b>	<b>13,94,00,000</b>

**Schedule - III**Receipts from External Aided Projects

SINo	Names of various projects	Amount (in Rs.)
1	AICOPTAX	9,05,600
2	INDO-MARICLIM	3,00,000
3	CMLRE Projects	29,87,000
4	NBFGR Projects	15,33,008
5	SIRD project	1,40,438
6	MPEADA	75,000
	<b>Total</b>	<b>59,41,046</b>

**Schedule - VI**Interest received from banks

SINo	Names of various accounts	Amount (in Rs.)
1	Salary A/c – 67167440116	14,00,201
2	Pension A/c <i>- No. with bank name</i>	7,058
3	GPF A/c	31,020
4	ICAR DG	2,74,936
5	Puduvype salary a/c	11,341
6	Internal Receipt a/c	5,86,793
7	Special TSB A/c <i>(GPF)</i>	2,71,697
	<b>TOTAL</b>	<b>25,83,046</b>
	Less : bank charges	7,817
	<b>Net amount credited</b>	<b>25,75,229</b>

  
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## Schedule – XV


External Aided Projects Expenditure

SINo	Names of various Projects	Expenditure incurred at Hqrs.	Amount transferred to PIs	Total
1	RKVY Project	1,85,210	1,37,218	3,22,428
2	INDO MARICLIM	78,974	2,00,000	2,78,974
3	CMLRE Projects	24,23,437	9,46,000	33,69,437
4	NABARD	18000	88,508	1,06,508
5	SIRD project	90,934	0	90,934
6	NFDB Project	24,19,722	1,25,000	25,44,722
8	AICOTAX		60,000	60,000
9	NSPAAD		2,36,000	2,36,000
10	WGP	8774		8,774
	<b>Total</b>	<b>52,25,051</b>	<b>17,92,726</b>	<b>70,17,777</b>

## Schedule - XVI

Closing balances of various accounts as on 31-3-2015

SINo	Names of various accounts	31-3-2015
1	Treasury Savings Bank A/c	75,00,100
2	Salary A/c – 67167440116	6,80,31,480
3	Pension A/c	1,65,392
4	Internal Receipts A/c	1,82,97,210
5	GPF A/c	18,98,856
6	Special TSB A/c for GPF	92,52,497
7	ICAR DG	22,57,847
8	Puduvype salary a/c	73,920
	<b>TOTAL</b>	<b>10,74,77,302</b>

  
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**KUFOS, KOCHI**

## SCHEDULE - IV

KERALA UNIVERSITY OF FISHERIES AND OCEAN STUDIES, PANANGAD, COCHIN  
INTERNAL RECEIPTS -- 2014 - 2015

Date	Fish	fish seed	farm	Admn. Fee	Tuition fee	Spl. fees	Tender fee	EMD /SD	Uty prope rty	Aqm. entry	Appln. Form	Mice.	Bus pass	Host. Rent	Public- ation	Suspense	F.S Puthuvey	Total
2.3.15			255			150			2000			51						2456
3.3.15					181000	32500						1480	270	280				215530
4.3.15	60		1011		411000	81700						380		1280				495431
5.3.15			510		234000	43500						65		2340				280415
7.3.15			520		30375	12600			2500			80	50		2250			48375
9.3.15			786		20250	9600						4520	345		1500			32136
10.3.15					47375	15600						500			2250			70090
12.3.15			731		17000	5400						120						23631
13.3.15					30000	5000												35120
16.3.15			180		30000	5000												35180
17.3.15			190					2300			5300	1360	480					9630
19.3.15			8950			3150						10	345	500		2656		15611
20.3.15			1010			8400			300									9710
21.3.15			200			1600												1800
22.3.15						1350	1200							500				3050
25.3.15			30			600	600		10000		800	510	270		8640			21450
26.3.15					75000	9450												84450
27.3.15					70000	8900						310		3000				82210
28.3.15			55		50000	6000						109						56164
30.3.15					145000	27900						2441	530	3280				179151
31.3.15					175000	21300		5000			1382	1010						202310
Sakthi																		1382
Vol.III.P.17					186000	33000			28000							73800		320800
13dds							11590									610		12200
P.17, 8dds							14645									770		15415
P.18, 13dd																		36450
dd 848411					30000	6450												520800
ch 914138					400000	120800												140826
P21, 12dds					50000	6700	33697	43044			5700					1685		2951773
Total	60	0	14428	0	2182000	466650	61732	50344	42500	300	13182	12946	2290	11180	14640	79521	0	18540065
Up to 2/15	109807	71520	259955	1195575	11025455	1997945	119625	238764	403867	1195	1916305	293075	39540	152065	58390	27982	629000	21491838
Pro.Total	109867	71520	274383	1195575	13207455	2464595	181357	289108	446367	1495	1929487	306021	41830	163245	73030	107503	629000	21491838

21491838.00 +

Balance at Sakthi Account = 25000.00

21516838.00

FINANCE OFFICER

# ACTIVITIES

## NAVAL NCC UNIT

1. **Description.** A naval NCC Unit is functioning at KUFOS from 2007 with cadet strength of 50. In India, only one Fisheries Institution, KUFOS has the NCC Unit. All NCC activities will be conducted without affecting the studies and duty leave will be granted to participate in Camps. The NCC Uniforms and Refreshments will be served on free of cost. Almost all theory part of Naval NCC subjects will be covered in BFSc Syllabus itself. Students can get NCC 'B' certificate after two years of training and 'C' after three years of training. S. Lt. V. S. Kunjumammed is serving as Associate NCC officer (ANO).



NCC Cadets with Hon. Vice Chancellor.



Hon. Vice- Chancellor Dr. B. Madhusoodana Kurup hoist the National Flag



Hon. Vice chancellor addresses NCC Cadets on Independence Day

During the report period 84 Cadets have passed 'B' Certificate Exam and 32 Cadets have passed NCC 'C' Certificate Exam. KUFOS ANO has got an opportunity to lead the Kerala Contingent to Kumbakonam All India National Integration Camp this year. All the training activities were conducted as per the schedule issued from NCC. The Unit conducted a special parade on Republic day 2013, Dr. B. Madhusoodana Kurup, Hon. Vice-Chancellor, KUFOS was the chief guest. Attendance is compulsory to all cadets on Independence Day and Republic day celebrations.

KUFOS has conducted an Annual Training Camp (Ten days) for 604 Cadets in November 2012. Our Cadets have participated in various camps conducted by NCC in different places of the state.

Total sanctioned strength is 50. The enrollment was completed in full allotted strength in current year. SD- 20 (Boys) SW-30 (Girls) Total-50.

## STUDENT'S UNION ACTIVITIES

The students' union in KUFOS is an integral part of the university's educational environment, providing stimulating programs, services and facilities for the community. It affords the opportunity for informal association outside the classroom. The Union complements the academic experience through an extensive variety of cultural, educational, social, and recreational programmes. These programmes provide the opportunity to balance course work and free time as cooperative factors in education. The Union is a student-centered organization that values participatory decision making. The Union offers first hand experience in citizenship and educates students in leadership, social responsibility, and values. In all its processes, The Union encourages self-directed activity, giving maximum opportunity for self-realization and for growth in individual social competency and group effectiveness.

Office bearers of the students' union were elected through democratic process of secret ballot. This gives exposure to the students to the democratic election system prevailing in the country. Office bearers thus selected were in office for a period of one year. The Hon'ble Vice Chancellor Dr. B. Madusoodana Kurup was the Patron of the Students Union. Dr. K. M. Mathew, Dr. M.S Raju and Dr. M.K. Sajeevan served as Associate patron and the adviser to the Students Union. Since its inception University Students Union organized various cultural and educational programmes for the benefit of the students, staff and general public. Highlights of the some of these programmes are as follows.



### Environmental day and Nature club

Organised various programmes to celebrate environment Day on 5<sup>th</sup> June. Lecture by Hon'ble Vice Chancellor Dr. B.Ashok IAS VC, KVASU, Dr. B. Madhusoodana Kurup, Hon'ble Vice Chancellor, KUFOS; Major Ravi and Shri. Neelakandan were the highlights. *One plant One student* was another major programme initiated by the Students Union. Planting one tree, nursing the plant during their student life and hand over to the University after completion of their study is the main attraction of the programme. Through this programme students realize the importance of protection of environment and mark their



memory in KUFOS through a plant. Nature study camp at Thekkady Periyar Tiger Reserve was another programme organized by the Students Union. A Quiz programme on Aquatic animals was also organized to create awareness among the students on conservation of Biodiversity.

### Talk on media

Students Union organized various programme through which students got exposure on Journalism and importance of media in overall development of the country. Pramod Raman, Malayala Manorama and Smt. Shani Prabhakar, Malayala Manorama News Channel interacted with the students on various aspects of journalism. *Media and Youth* and *Media and its Critics* were the topics debated during the programme.





### **Patriotism**

A patriotic person will always be ready to sacrifice his life for the love for his country. Students Union organized various programmes to develop patriotism in students. They Celebrated Independence Day, Republic Day and Gandhi Jayanthi in a befitting Manner. Patriotic song competition, Clean Campus programme, All Kerala Tagore Quiz programme etc were the major highlights. Shri.Jayakumar, Hon'be Vice Chancellor, Malayalam University attended the programme as the chief guest.

### **Onam Celebration**

Onam is the ancient festival of Kerala. The rice harvest festival and the Festival of Rain Flowers. Onam is unique since Mahabali has been revered by the people of Kerala. The King is so much attached to his kingdom that it is believed that he comes annually from the nether world to see his people living happily. The students Union celebrated this festival by organising various cultural activities like Pulikkali, Onamsadhya and various cultural events by students and staff. Onam message by Prof (Dr) B.Madhusoodana Kurup Hon'ble Vice Chancellor, KUFOS was the major attraction of the event.



## Arts Festival

Organizing Students Arts festival is one of the major responsibilities of the Students Union. Every year students union organises arts festival for the benefit of students and staff of the University. Through arts festivals students get a chance to show their artistic and literary talents before the invited audience. Shri. N.L Balakrishnan, Cini artist; Tini Tom, Cine Artist; Muthumani, Cine Artist and Dr. Jayashree Madhu were the eminent personalities who attended the inaugural and valedictory functions of the arts festival.

## Film festival

Students Union organized film festivals and screened various documentary films for the benefit of the students. Shri.Udayanandan, Film Director; Joy Mathew, Actor and Director and Nithinsha, Cine Actor attended the film festival and had dialogue with students on various aspects of Cinema. A musical programme to pay tribute to Tribute to late Baburaj , Malayalam film musician was another major programme organised by the students Union. Shri. K.M Udayan Music Director inaugurated the programme. Songs composed by Baburaj was sung during the event.

## Guru Sagaram

Teachers day for the appreciation of teachers is a regular event on 5<sup>th</sup> September of every year. Students Union organised GURUSAGARAM to honour the teachers in the field of fisheries and Ocean studies. Students showered their respect and gratitude to the faculty of KUFOS. In addition to this, Students Union invited retired teachers to the campus and honoured their contributions to the field of teaching and research.

## Entrepreneurship Development

Entrepreneurship development is a major programme for KUFOS students as a part of their curriculum and extra curricular activities. An Entrepreneurship development club named TELSA 2014 was formed for catalysing these activities. Andrine Mendenz, Managing Director, Salt Mango Tree inaugurated the club and delivered a lecture on basics of entrepreneurship development.



## Social service

Commitments to the society, uplift of poor and downtrodden citizen of the country was a major activity of the student's union of KUFOS. As a part of social activity students Union collected food material, dress and other aids from the staff and students of the KUFOS and handed over to the old age home *Bathlahem*. Students spent a day with the inmates of *Bathlahem* and performed various forms of arts for the benefit of the inmates. Eye camp and Blood donation camp conducted for the benefit of students, staff and general public were some of such activities organised by the students union. Aids awareness camp organised by the students union is another example of the student's social commitment.

## Martial arts awareness camp

Students Union of KUFOS organised Martial arts awareness camp as a part of their campaign towards *healthy citizen wealthy citizen*. To build confidence in a student to face unexpected attack and untoward incidents in their life was the major objective of the programme.

In addition to these, various programmes like quiz on tourism, camps on theatre arts, drama festival etc. were organised as a part of student's union activities.

## National Service Scheme

### Brief Description of NSS

National Service Scheme is a community service programme sponsored by the Ministry of Human Resource Development, Government of India. Aimed at developing student's personality through community service, NSS is a voluntary association of students working for a campus-community linkage. The cardinal principle of the NSS programme is that it is organised by the students themselves, and both students and teachers through their combined participation in community service, get a sense of involvement

in the tasks of nation building. This scheme promotes national solidarity. It would be possible to awaken the downtrodden in our society through collective responsibilities and develop the confidence, to tackle their common problems with energy, enthusiasm and in a co-operative spirit, based on mutual aid and self-reliance. The role of students is as activists, enablers, catalytic agents or liaison with other likeminded wider communities.





### Details of Activities/Events

In order to motivate student to understand the values and philosophy of NSS and explain them about the concept of social service, and teach them methods and skills required for achieving the objectives of the scheme; to promote community education through meetings, talks, news bulletins discussions etc.; and to help in formulating NSS programmes which will have direct relationship with the academic curricula each year an orientation class is given to the newly inducted NSS volunteers.

The Orientation class for this year's NSS volunteers was handled by Dr. Paul Chacko, Associate Professor, Prajyoti Niketan College, Pudukkad, Thrissur on 18-08-2015.

Hon'ble Vice Chancellor, Prof. (Dr.) B. Madhusoodana Kurup inaugurated the activities of NSS for 2015-16 academic year on 18<sup>th</sup> August 2015. This was followed by a series of talks on the "Initiatives of WWF-India" by Mr. Renjen Mathew Varghese, State Director, WWF-India and "Marine Conservation" by Mr. Vinod Malayilethu, Senior Coordinator, WWF-India, Marine Conservation Programme. A photo exhibition on the theme "Defend the Blue" was also organized with the help of WWF-India.



A nature conservation programme through photography "Shoot to Save" was organized by NSS KUFOS unit on 21-4-2015. Students were encouraged to capture the nature's beauty. Around 120 students participated in which Mr. Balaji N.C. of MSc Marine Microbiology and Marine Drugs secured the first prize. Wildlife photographer Dr. Mathew Jacob was the Guest of honour.

### International Students Day

NSS celebrated the 84<sup>th</sup> Birth Anniversary of our beloved former President, Dr. A.P.J Abdul Kalam on 15<sup>th</sup> October 2015 as "International Students Day". An elocution competition in English and Malayalam was held for the students on the topic "Towards a developed India-An APJ perspective".

On 16<sup>th</sup> October 2015 NSS KUFOS





Winners of Elocution competition



Unit in association with Department of Food Science and Nutrition celebrated the World Food Day. A quiz competition for the students was held on the day. Dr. Sanu coordinated the proceedings. Dr. K. Gopakumar, Professor Eminence gave away the prizes to the winners.

National Service Scheme, KUFOS in association with Department of Marine Microbiology and Biotechnology organized a poster designing competition on 17<sup>th</sup> October 2015 to mark the International Day for Poverty Eradication. The posters were later exhibited to general public.

### Visits/ Camps

Ten students of NSS KUFOS unit attended a three day nature conservation camp at Pambadumchola National Park, aimed at restoration of natural habitat of the region.

### Members Details

The Over-all objective of the National Service Scheme is Service to the community, while studying, in an educational institution. It is sought to arouse the social conscience of students and provide them with the opportunity to work with the people around the educational campuses creatively, and constructively, and to put the education they received to concrete social use. KUFOS has one unit of NSS with Dr. Ranjeet K., Associate Professor as its Programme Officer. The NSS Unit in KUFOS has 100 students from the BFSc course. Mr. Davood and Ms. Unnimaya of 2013 batch BFSc are the NSS Secretaries.

## Highlights of Major Events

### First Convocation

Smt. Sheila Dikshit, Her Excellency, the Governor of Kerala and Chancellor of KUFOS, inaugurated the first Convocation of Kerala University of Fisheries and Ocean Studies (KUFOS) on 20th May 2014. The Governor delivered the Convocation address after awarding degrees to 88 students, who passed M F Sc. and B F Sc. Programmes.

Hon'ble Chancellor stressed the need to intensify research to improve ecological and economic sustainability of fish and shrimp farming and developing affordable farming system. Global warming is considered as one of the principal threats to biodiversity and fisheries, Sheila Dikshit said. "Evidence is now available regarding increase in sea surface temperature, change in ocean productivity and community structure, ocean acidification, sea level rise, change in the time and success of spawning, etc. due to global warming", the Governor added. The Governor called upon the University to formulate mitigation and adaptive strategies for the livelihood security of the people involved in the sector and to develop climate resilient aquaculture systems suitable for the country.

The Governor also administered the pledge to the graduates. In the graduation gowns in various hues, the students took the pledge to uphold the nobility of the profession. Besides the students, higher officials and members of the Governing Council, the Senate and the Academic Council wore gowns and caps adding colour to the first convocation ceremony.

Sri. K Babu, Minister for Fisheries and Pro-Chancellor of KUFOS presided over the function. He said that the university would start another set of post-graduate programmes in the coming academic year. The Governor also gave away gold medals to the first rank holders. Muhammed Thashreef of 2007 B.F.Sc Batch, Harsha Haridas of 2008 B.F.Sc Batch and Shyam K.U. of B.F.Sc 2009 Batch bagged the first ranks.



In his welcome address, Vice Chancellor, Prof. (Dr.) B. Madhusoodana Kurup, reviewed the achievements of KUFOS and its future plans. K.R. Jyothislal, IAS, Dr. C. Mohanakumaran Nair, Pro-Vice Chancellor of KUFOS and Dr. Sajan George, Dean of KUFOS and members of the Governing Council, the Senate and the Academic Council, students, parents, faculties, staff and public were present.

## First Regional Centre Inaugurated in Thiruvallam

Chief Minister Oommen Chandy inaugurated the first Regional Centre of Kerala University of Fisheries and Ocean Studies (KUFOS) in Thiruvallam, Thiruvananthapuram on 12<sup>th</sup> January 2015. In his inaugural address, the Chief Minister said that an International Business School at a cost of Rs. 895 lakhs will be set up at the Regional Centre of Kerala University of Fisheries and Ocean Studies (KUFOS) in Thiruvallam, Thiruvananthapuram. He also laid the foundation stone for an Administrative Office-cum-Guest House in the Centre.

In his presidential address, KUFOS Pro-Chancellor and Fisheries Minister said that the Government had allocated assistance worth Rs. 87 crore to the University in the last three years. "To enable the University to claim UGC assistance, steps will be completed by March 31 to achieve 12 B status", Babu said. The minister also said that in the last three years 23 courses were started in KUFOS and student intake had touched 550. Babu also released the Newsletter of KUFOS, 'Challenger'.

Welcoming the gathering, Dr. B. Madhusoodana Kurup, Vice Chancellor said the University was developing adequate human resources in fisheries and ocean studies aimed at exploiting the prospects of the sector and ushering in a 'Blue Revolution'. KUFOS Governing Council members Dominic Presentation MLA and Abdurahiman Randathani MLA were guests of honour. A K Behera,

Superintendent Engineer of BSNL Civil Engineering wing, which was entrusted the construction work at the centre, presented a report.

Adv. K. Radhakrishnan, Governing Council member, S. Susheela, Councilor, Dr Sajan George, Dean, Dr Daisy C Kappen, Director of Extension and Dr. V. M. Victor George, Registrar spoke at the function.

The Regional Centre at Thiruvallam will focus on various research activities such as

development of technologies, fish processing, value addition, fish disease diagnosis, bioactive products and fish conservation. The centre will also introduce programmes for the empowerment of fisher folk in South Kerala. Studies will be conducted to analyse the socio-economic status of the fishermen in the area and will take remedial steps to uplift them.



## Eight Research Centres Opened, Foundation Laid for Research Complex

Aimed at intensifying advanced research to find solutions for issues plaguing the fisheries industry and tapping the full potential of a highly prospective sector, Kerala University of Fisheries and Ocean Studies (KUFOS) opened eight new Research Centres, and foundation stone was laid for a Research Complex at the University on 22<sup>nd</sup> February 2014. The Centres will play a crucial role in connecting the University with the society, by offering research in diagnosing diseases on fishes, preventing threat of extinction of indigenous fish varieties, producing medicines from marine organisms and conservation of mangroves and biodiversity.

Prof. K V Thomas, the then Union Minister of State for Food, Public Distribution and Consumer Affairs laid the foundation stone for the research complex. He said that the issues in fisheries sector still remain unsolved mainly due to lack of advanced research in the sector. "Scientists should focus on advanced research to solve these issues. Fisheries is an important engine for economic growth in the country. As a country with high potential in the sector, India has yet to exploit its resources", he said.

After inaugurating eight Research Centres, K Babu, Minister for Fisheries said that the activities of the Research Centres will help the university to connect with fisheries community by offering advanced research and developing remedies for the issues faced by the community. He also said the financial assistance will be given to expand the ornamental fish Aquarium in the Varsity so that more public could visit the aquarium.

Vice-Chancellor, Dr. B. Madhusoodana Kurup, who presided over the function, said that by offering quality research in relevant areas, KUFOS will be at the forefront to resolve the issues being faced by the fishery industry and to maintain sustainable development in the sector.

Dominic Presentation M.L.A, Dr. K. Gopakumar, Prof. N R Menon, Dr. Girija, Director, National Institute for Fisheries Post Harvest Technology and Training, Sri R. C Sinha, Director, CIFNET and Dr. Sajan George, Dean, KUFOS spoke at the



session. Prof. K V Thomas released KUFOS Research Policy document by giving a copy to Dr. N R Menon.

Pro Vice-Chancellor, Dr. C. Mohanakumaran Nair welcomed the gathering and the then Registrar, Dr. Abraham Joseph proposed the vote of thanks.

### **Prof. Alikunhi Chair Inaugurated**



Sri K Babu, the Hon'ble Minister for Fisheries, Ports and Excise inaugurated Professor Alikunhi Chair for Sustainable Aquaculture Systems at KUFOS on 25<sup>th</sup> July 2014. In his address, he said that the aquaculture practices should follow eco-friendly methods in order to achieve sustainable development in the fisheries sector. "Depletion of indigenous fish stock was a serious threat to the fish

biodiversity of the State and proper awareness programmes for farmers should be organized in this regard. Appropriate farming technologies should be developed under the new Chair to meet the challenges faced by the sector", the minister added. He also said that unscientific fishing and overfishing are to be curbed strictly.

Vice-Chancellor, Prof. (Dr.) B. Madhusoodana Kurup, who presided over the function, said that the newly-initiated Chair would focus on implementation of novel energy-efficient culture strategies, effective nutrient budgeting approaches and also focus on environmentally sound low waste and efficient management strategies in farming system.

### **SEVEN SCHOOLS INAUGURATED**

Fisheries Minister K Babu inaugurated the seven Schools of KUFOS on 25<sup>th</sup> November 2013. He said that the state government would seek financial assistance from the Centre's Plan Fund to upgrade Kerala University of Fisheries and Ocean Studies (KUFOS) as a centre for excellence. The minister also handed over the university statute to Vice-Chancellor Dr. B. Madhusoodana Kurup.

With the establishment of the University Statute, a new era has commenced in the history of KUFOS. The varsity can now enjoy autonomy in several respects. It will also help in getting additional funds from Central agencies like the UGC", the Minister said.

In his presidential address, Dr. B. Madhusoodana Kurup, Vice-Chancellor, said that KUFOS has the potential to become the hub of fisheries education



of the country. “Our dream is to make the University an excellent institution, with international standards. We are planning to focus more on postgraduate training and advanced research. By 2020, KUFOS will have around 60 courses under 40 departments”, he said.

The newly inaugurated Schools include Aquaculture & Biotechnology, Fisheries Resource Management & Harvest Technology, Aquatic Food Products & Technology, Ocean Science & Technology, Ocean Engineering and Underwater Technology, Fishery Environment and Management & Entrepreneurship.

### **Pandit Karuppan Chair Inaugurated**



Minister for Fisheries K. Babu inaugurated the Chair for the socio-economic empowerment of fisher folk and for archiving traditional knowledge of fishermen at KUFOS on 29<sup>th</sup> January 2013. The Minister proposed the name of Pandit Karuppan, the outstanding social activist for the downtrodden, to the Chair. It is the first of its kind in the country.

Prof. (Dr.) B. Madhusoodana Kurup, Vice-Chancellor,

presided over the meeting. “By establishing the Chair, the University is realising one of the objectives viz, its social commitment for the upliftment of the fisherfolk”, he said.

The Chair has become a forum for meaningful dialogue between fisherfolk and scientists. Dr K S Radhakrishnan, the Chairman of Kerala Public Service Commission, delivered the keynote address.

## Brainstorming Session for Formulating New Research Policy



As part of the Foundation Day celebration, a Brainstorming Session was held at KUFOS on 20<sup>th</sup> May 2013 to evolve a new research policy for the University in Fisheries and Ocean Studies. Around one hundred subject matter experts participated in the discussion in different theme groups at the session. The groups identified key research

areas on each theme and presented the concepts during the panel discussion.

Prof. K V Thomas, then Hon'ble Union Minister for Consumer Affairs, Food and Public Distribution inaugurated the function and released the logo of the University. He promised to provide all kinds of support from the Centre to KUFOS. K Babu, Hon'ble Minister for Fisheries, Govt of Kerala, presided over the meeting. He released a Master Plan of KUFOS which envisages the entire infrastructure planning of the University up to 2030. Dr Sridhar, the Scientist in Charge at Central Institute of Freshwater Aquaculture, Bangalore delivered the foundation day lecture. Dominic Presentation MLA, Adv. T K Devarajan, Dr S A H Abidi and Dr K Gopakumar were the Guests of Honour.

### Aquarium Complex Inaugurated

Dr. A. M. Michael Aquarium Complex was inaugurated on 4<sup>th</sup> April 2013 at KUFOS by Minister K Babu. Stating the aquarium complex as a Vishu gift for Kochiites, the Minister divulged the plans to expand fishery in a big way. Prof. (Dr.) B. Madhusoodana Kurup, Vice-Chancellor of KUFOS presided over the function. Leena Nair IAS, Chairman of MPEDA delivered the keynote address.

### Foundation Laid for Ocean Studies Campus

Minister for Fisheries K Babu laid the foundation stone for setting up of an Ocean Studies Campus of Kerala University of Fisheries and Ocean Studies (KUFOS) at its Fisheries Station in Puduveyp on 25<sup>th</sup> October 2014. Emphasising the need for serious research on climate change, global warming, cyclones etc, the Minister hoped that the proposed Ocean Studies

Campus of KUFOS would provide adequate human resources in the sector to address these problems.

“The Ocean Studies Campus, to be set up by the KUFOS, will provide the necessary human resources in the sector and address its problems, while exploring the ocean resources that are useful to man. The campus will be developed into a ‘centre of excellence’ in ocean studies with international standards,” he said, adding that the KUFOS was faring well while some other universities were not performing well.

MahendraRaut presented a report on the proposed academic complex. The proposed academic complex is being constructed by the civil engineering wing of the BSNL. The plinth area of the ground floor and the first floor is 755 sqm each, and the total plinth area of the building is 1,510 sqm. The complex consists of class rooms, labs, seminar hall, and staff room and toilet blocks. The cost of construction of the first phase of the project is Rs 2.35 crore, which will be completed within one year after the award of the work.



### Foundation Laid for P.G Hostel

K Babu, Minister for Fisheries laid the foundation stone for P G Hostel for ladies at Kerala University of Fisheries and Ocean Studies (KUFOS) on 17<sup>th</sup> February 2014. He said that State government would provide all assistance to make KUFOS a centre of excellence. “In its efforts to make KUFOS a Centre of Excellence, Varsity proposes to set up two new Schools, under the Faculty of Ocean Science in Puduveypu campus, an amenity centre, a seminar complex, field- training facility, a residential flat complex for teaching and

non-teaching staff etc by availing the fund allocated in the budget”, K Babu said.

The minister pointed out that KUFOS had been given priority in allocating Plan Funds in State budget for the financial year 2014-15. “While all other universities in the State got less than Rs. 15 cr in the budget, KUFOS alone was allocated Rs. 27 crore,” he said. He also said that government will seek additional



funds from central agencies like the UGC.

In his presidential address, Dr. B. Madhusoodana Kurup, Vice-Chancellor, stressed the need for ushering a Blue Revolution (fish revolution) emulating the models of Green Revolution and White Revolution. "By 2020, KUFOS will have around 60 courses under 40 departments by making the university the educational hub of fisheries sector", he said. MahendraRauth, Superintending Engineer, BSNL presented report about the proposed hostel.

### **Workshop for fisherwomen empowerment**

A workshop on 'Women in Fisheries Sector' was held at the Kerala University of Fisheries and Ocean Studies (KUFOS) on 11<sup>th</sup> March 2014. The workshop called for constituting a Centre at the University for studying the status of women in fisheries sector. The workshop was organized by Pandit Karuppan Chair of the Kerala University of Fisheries and Ocean Studies (KUFOS) in association with the Centre for Gender Studies in Agriculture and Farm Entrepreneurship Development of Kerala Agricultural University.

The workshop observed that women workers in fisheries sector are facing a number of issues such as exploitation at workplace, physical and mental torture, occupational diseases and discrimination in remuneration etc. Hence the meeting emphasized the need to empower women by providing financial and technical assistance, and introducing awareness and training programmes. The workshop also suggested the networking of various institutions in the sector such as KUFOS, CMFRI, CIFT, SAF and Fisheries Department for an integrated approach towards solving the problems of the fisherfolk.

Prof. (Dr.) B. Madhusoodana Kurup, Vice-Chancellor, KUFOS inaugurated the workshop. He said that women workers, farmers, traders and entrepreneurs in fisheries sector are facing discrimination.



There were important presentations on relevant topics during subsequent technical sessions moderated by Prof. K. S. Purushan. Smt. C. R. Sathyavathi presented the 'Fisherwomen empowerment activities' promoted by the Society for Assistance to Fisherwomen and the progress achieved. Dr. Asha Latha, Principal Scientist CIFT described the easily adaptable 'Women friendly technologies of value added fish products preparation and its marketing'. She confidently spoke that by way of outreach programmes, there

is detectable change noticed in the prosperity of fisherwomen. Smt. Girija Devi, District Manager, Matsyafed, Ernakulam described the 'Fisherwomen enterprises' implemented by them which were seen instrumental to improve the living conditions of fisherwomen. However, there are many other problems to be tackled.

### Foundation Laid for Mangrove Nursery



Fisheries Minister K. Babu laid the foundation stone to a mangrove nursery at the Fisheries Station of KUFOS in Puduveyypu on 7<sup>th</sup> June 2014 in order to strengthen the mangrove research.

The Mangrove Nursery is one of the dream projects of KUFOS to make the Station a centre of excellence in mangrove research. "As mangrove forests link up the ecosystems of the land and sea, their importance in stabilizing and reserving

the peripheral ecosystems is unquestionable. KUFOS is showing the path for the whole country itself for proper research for the conservation of the mangroves", The Minister said.

S. Sarma, MLA, commissioned the newly-built Multi-Hatchery complex at the station.

Vice-Chancellor, Dr. B. Madhusoodana Kurup, presided over the function. He said that the varsity will focus on intensifying research activities in the areas of mangroves and brackish water aquaculture at the fisheries station in Puduveyypu.

### State-level Workshop on Diversification of Aquaculture Practices in Kerala

A State-level Workshop on 'Diversification of Aquaculture Practices in Kerala: Challenges and Opportunities' was organized on 29<sup>th</sup> March 2014, by the Kerala University of Fisheries and Ocean Studies (KUFOS) with the support of Rashtriya Krishi Vikas Yojana (RKVY).

The workshop, which was aimed at empowering fish farmers in the state, observed that Kerala was yet to exploit the prospects of aquaculture. It also identified that fish farmers in the State were not aware of the potentials of diversification of aquaculture practices like cage culture and integrated farming.



KUFOS Vice-Chancellor Dr. B. Madhusoodana Kurup inaugurated the workshop. He said that technology should be used to strengthen fish production. “KUFOS will develop adequate technologies to improve the aquaculture practices in the country, and will transfer to the farmers”, he said. Dr. K Gopakumar, former Deputy Director General, ICAR,

presided over the meet.

Anwar Hashim, KUFOS Governing Council member spoke at the inaugural function. Dr. K.S Purushan welcomed the gathering and Dr. Daisy C Kappen proposed vote of thanks.

Experts led various sessions on different topics. Scientists, fish farmers, fisheries officers, activists and students actively participated in the workshop.

### Inauguration of Digital Library

Kerala University of Fisheries and Ocean Studies (KUFOS) set up a D-Space Digital Library and Automated Library Information System with Wi-Fi connectivity at the University on 9<sup>th</sup> October 2014.

Inaugurating the facility, Minister for Fisheries Sri K Babu said popular new media could be used to disseminate effectively the research outputs to the targeted community. The digital library system at the university would help improve fisheries education in the country. It would make information sharing and gathering more effective and easy. KUFOS could make a

database of rare fish species and fisheries resources of the State, the Minister said.

In his presidential address, Dr. B MadhusoodanaKurup, Vice Chancellor, said the digital resources of fisheries information prepared by KUFOS would help usher in a second Blue Revolution in the country. KUFOS would be made a hub for fisheries information, he added.



Information of use to fish farmers in their daily activities have been included in the digital library. Traditional knowledge and sayings are also listed in the system. The system has been set up with the financial assistance of Indian Council for Agriculture Research (I C A R).

Dr. K. Gopakumar, Pro-Vice Chancellor Dr. C Mohanakumarn Nair, Registrar Dr. V. M. Victor George and Fisheries Dean, Dr. Sajan George spoke at the function.

Assistant Librarian V. S. Kunjumammed welcomed the gathering and P. V. Vijayalakshmi proposed the vote of thanks.

### **Training Programme on Ornamental Fish Culture**



A Training Programme on Ornamental Fish Culture was jointly organized by Kerala University of Fisheries and Ocean Studies (KUFOS) and MalayalaManorama, Kochi on 4th July 2014, at KUFOS Headquarters, Panangad. The training programme was conducted by the School of Aquaculture and Biotechnology, KUFOS. The formal inauguration of the training programme was done by Sri. K Babu, Hon'ble

Minister for Fisheries, Ports and Excise. The inaugural function was presided over by Prof. (Dr.) B. Madhusoodana Kurup, Hon'ble Vice-Chancellor of KUFOS.

Experts led various technical sessions on ornamental fish culture. The modules of the training programme were planned so as to give the participants a comprehensive idea of ornamental fish culture, in practice. The prospects of Entrepreneurship in ornamental fish farming were also dealt with in detail. The programme included hands - on - training session on various aspects of ornamental fish culture. Over 130 participants attended the training programme. Prof. (Dr.) B. Madhusoodana Kurup, Vice-Chancellor and Sri. Thomas Ravi, General Manager (Circulation), MalayalaManorama, Kochi gave away the certificates to the participants.

### **India International Food and Agri-Aqua Expo Turns Into A Popular Fest**

The 6th edition of the India International Food and Agri Expo (IIFAE-2014) turned into a popular fest at the Kerala University of Fisheries and Ocean

Studies (KUFOS) from October 30 to November 3. The expo was jointly organised by KUFOS and the Foundation for Organic Agriculture and Rural Development, in association with the Nabard, the Department of Fisheries, the Department of Agriculture, the Animal Husbandry Department, the MPEDA, the Directorate of Cashew and Arecanut, the Coconut Development Board, the Kerala Agricultural University and the Veterinary University.

Inaugurating the expo, Public Works Minister V K EbrahimKunju said the government should ensure that traditional farmers are given financial support and subsidies to promote organic food production. The Minister said that organic culture is the only better alternative to today's toxic food items. "Farmers should be protected by introducing subsidy schemes for crops and food products. The expo, with its exhibitions interactive programmes, will help in enhancing organic farming and popularising its benefits.

The five-day exhibition and workshops included an agro-machinery expo, India organic fair, processed food expo and animal husbandry expo. Workshops and Seminars, organised as part of the event, discussed various issues and challenges related to organic aquaculture, organic spices, organic coconut-based farming systems, farm mechanisation, quality assurance, value addition and market linkage. The event aimed at developing the Indian agriculture and food industry by discovering the latest technologies in farm process management, and food production and processing that can ensure efficient and sustainable production, while improving the quality of food products.

The exhibitors included Central and State government departments, food processors, producer companies, traders, farmers, farmer organisations, agri-entrepreneurs, service providers, consultants, certification agencies, financial institutions, farm tourism entrepreneurs, NGOs and research organisations. The visitor profile included farmers, industrialists, executives

of Indian and foreign industries, investors, traders, importers, exporters and general consumers.

At this year's expo, a special emphasis was given to organic aquaculture and its vast potential. Value-added coconut products like Neera, coconut palm sugar and virgin coconut oil, produced by coconut producer companies, were available at the expo.

A group of final year students of Bachelor of Fisheries Science at Kerala University



of Fisheries and Ocean Studies have tasted first success as entrepreneurs with their stalls selling processed food and fish fingerlings doing brisk business at the Food and Agri-Aqua Expo. The students from the School of Aquatic Food Products and Technology and School of Aquaculture and Biotechnology were on a part of mandatory experiential learning programme.

The seafood stall opened by students in the School of Aquatic Food Products offered fish preparations and traditional combination like tapioca and fish curry. They had been on their feet all through the festival because of rush of orders. They sold fish cutlet, fish roll, fish pickle, prawn burger, prawn cutlet and other seafood dishes prepared by students themselves. The students sourced their raw materials, tested

them for quality in the laboratories at the University and got them ready to be served.

At the same time, the students from School of Aquaculture and Biotechnology were busy clarifying the doubts of visitors on ornamental fish culture and selling ornamental fishes and fingerlings. They explained visitors about pet fish keeping, setting up aquariums. The recent successes in cage culture of edible varieties of fish were also discussed with the visitors to the stall.

Both the groups were under the direct supervision of the Directors of the Schools Dr Sajjan George and Dr S. Shyama.

The Expo provided a platform for exploring business opportunities in the sector by attracting professional exhibitors and visitors, including farmers, industrialists, executives of Indian and foreign companies, investors, traders, importers, exporters and general consumers.

At the Expo, exporters and people who work in the agriculture and fisheries sectors came together and





showcased their products - from spices to coffee and tea, cocoa, cashew and more.

Minister for Water Resources P.J. Joseph launched neera honey from Tejaswini Coconut Farmers' Producer Company, Kannur at the India International Food and Agri-Aqua Expo. The minister called on farmers in the State to strive to diversify cultivation and said that coconut farmers should be encouraged to take up inter-cropping. He said it was not difficult to take up organic

agriculture which had produced good results in his own experience. The Minister also said that farmers should be encouraged to collect seeds from their fields so that the varieties that were best suited to our climatic conditions were preserved.

T K Jose, Chairman of Coconut Development Board, said that toxic food products could fully be replaced by organic food items if efforts are made to coordinate various organic farmers' clubs in the State and to boost trade networks. Presiding over the function, Vice-Chancellor B MadhusoodanaKurup of Kerala University of Fisheries and Ocean Studies (KUFOS), said value-added products such as Neera and its derivatives would be beneficial to the coconut farmers in Kerala.

Excise Minister K Babu inaugurated the closing ceremony of the expo. He said that the government's new 'Abkari' policy had helped boost neera production in the State. He said that organic farming was a better alternative to save society from toxic food products.

He pointed out that Kerala's prospects for practicing 'one-paddy-one-fish' integrated farming is very high. "Initiatives will be made to extend the project to all parts of the State soon," he added. "We are considering the proposals for declaring 'pokkali' fields as heritage villages, in order to bolster farm tourism in the State. New policies will be framed soon in this regard, considering the ecological aspects of the idea," Babu added. P C Cyriac presided over the valedictory function.

### **Centre for Advanced Training and Research in Entrepreneurship Development Opened**

In a bid to develop entrepreneurial initiative among students, Kerala University of Fisheries and Ocean Studies (KUFOS) launched a Centre for Advanced Training and Research in Entrepreneurship Development at the campus on 24<sup>th</sup> April 2015. The centre focuses on fisheries technology and business incubation and startups. For this, a fisheries technology and business incubator (FTBI) will be set up at the centre. KUFOS launched the Centre in

collaboration with KITCO Limited to promote students supporting innovations in fisheries, ocean resources, agri-business and rural industries.

Inaugurating the Centre, Fisheries Minister K Babu urged students to step into business entrepreneurship to boost the production sector and reduce unemployment. "Instead of wasting time for job seeking, students should focus on becoming job providers by stepping into business entrepreneurship utilising their innovative ideas and creativity. This will help reduce unemployment and enhance the production", Babu said.

"The State government has introduced a slew of programmes for attracting students to involve in business entrepreneurship. KUFOS should implement the government scheme of awarding 20 percent attendance and 4 percent grace mark to students who are involved in entrepreneurial activities", the Minister said.

"The objective of the entrepreneurship development centre and FTBI are to encourage students for investing their innovative ideas to develop business entrepreneurship in fisheries and allied sectors", said Dr. B. Madhusoodana Kurup, Vice-Chancellor. Students would be trained to become real entrepreneurs in areas of aquaculture, food processing, value addition, feed formulation, seed production, consultancy and drug formulation etc., he said.

At the initial stage, KITCO will provide entrepreneurship development trainings and skill development programmes to KUFOS students in line with the National Skills Qualification Framework (NSQF), initiated by the Govt. of India.

For the smooth running of the fisheries technology and business incubator providing opportunities to a wider spectrum, the centre will utilise the schemes of Dept. of Science and Technology (DST), Govt. of India. On obtaining the approval from DST, the fisheries TBI will be eligible for various grants and benefits offered by both the State and Central government. These schemes will act a source of fund for developing the FTBI, paving the way for the sustainable development of fisheries.



A competent governing board will coordinate the functions of FTBI and will work for connecting and establishing a wide network with the industry. The board will also manage financial, tax-related and regulator compliances and the MoUs with various stakeholders.

Dr. K. C. C. Nair, Principal Consultant of KITCO Ltd, said

KUFOS was the first University in Kerala to start a centre for entrepreneurship in collaboration with KITCO. The newly launched centre at KUFOS would offer support and mentoring to all aspirants with passion to become an entrepreneur, he said. The centre is functioning under the School of Management and Entrepreneurship, KUFOS.

### Curriculum Development Workshop

A Curriculum Development Workshop held at Kerala University of Fisheries and Ocean Studies (KUFOS) on 17<sup>th</sup> March proposed a revamp in existing education system. It recommended the varsity to strengthen education system by formulating innovative curriculum in fisheries and ocean studies sector. The curriculum should be framed focussing on practical training and academia-industry linkages to ensure quality education and better employment opportunities for students taking up fisheries and ocean science courses. A group of academicians and scientists from marine sector in India, who attended the workshop, stressed the need for adopting innovative methods in the education system to attract talented young people to the sector.

Inaugurating the workshop, Prof. B. Madhusoodana Kurup, Vice-Chancellor of KUFOS said that the University curriculum would be developed with an aim to make KUFOS a hub of education in the field of fisheries and ocean studies in India. He said that online learning system would be introduced at the University to reach out to a mass community. Advanced methods and latest technologies in information and communication fields would be utilised for making the learning process more dynamic and effective, he added.

“KUFOS is committed to adhere to the national policy to enhance the gross enrolment ratio in higher education from 18% to 25 % by 2025”, the Vice Chancellor said.

Prof. Kurup also said that KUFOS would establish an industry-university advisory board and an industry incubation centre at the varsity. “The University



seriously plans to make tie ups with private sector for R&D and to transfer technology for the overall development of human resources in fisheries and ocean studies sectors,” Kurup said.

Considering the factors such as employment prospective, scope for research and knowledge empowerment, the academicians, scientists and technocrats at the workshop identified various disciplines in fisheries and marine areas. The University will start new courses from the next academic year under these disciplines such as Marine Chemistry, Energy Management, Coastal and Offshore Engineering, Ocean Coastal Safety and Coastal Harbour Engineering, Fisheries Engineering and Petroleum Engineering. The experts also outlined curriculum frame works for these courses adopting a holistic approach with an aim to empower younger generation in higher studies.

Dr K Gopakumar, former Deputy Director General of ICAR presided over the workshop. Experts representing Indian Institute of Technology, Chennai, Council of Scientific and Industrial Research (CSIR), National Institute of Oceanography (NIO), National Centre for Earth Science Studies, M S University, Tirunelveli, National Institute of Ocean Technology, Chennai, Naval Physical and Oceanographic Laboratory, Kochi, Amet University, Chennai, Cochin University of Science and Technology, Kerala University and Kerala State Council for Science Technology and Environment (KSCCTE) participated at the curriculum development meet.

### **Foundation Laid for Common Amenity Centre**

In an attempt to strengthen KUFOS’ linkage with society, Minister K Babu laid the foundation stone for a Common Amenity Centre of the University in Madavan junction on 10<sup>th</sup> April 2015.

The common amenity centre will have facilities such as special sales counters of KUFOS and Co-operative Society, medical dispensary, bank, post office, ATM, super market, cafes, rest rooms etc. A modern Fish Kiosk will be set up at the University sales counter. In addition to the usual services, fish cultured in the KUFOS farms and value added fishery products prepared by it will also be made available at the Fish Kiosk. The centre will also have a separate student’s outlet, offering various fish products prepared by KUFOS students as part of their entrepreneurial initiatives and experiential learning.

Speaking on the occasion, Minister K Babu said that the proposed common amenity centre of KUFOS would boost the trade potentials of Kumbalam Panchayat. He also said the centre would increase the trade and business activities in the area, providing opportunities for both the public and the University employees and students. The amenity centre would be also helpful to the public for availing quality products prepared by the University at reasonable price, the minister added.

“KUFOS will initiate more such projects in order to connect with the society. Efforts are on to construct a modern guest house at KUFOS land with the support of the Tourism Department. It will be useful for the University and the public as well. KUFOS will also develop a state-of-the-art museum focussing on farm tourism to attract more visitors into the University campus”, the minister said.

Prof. B. Madhusoodana Kurup presided over the function. He said that the common amenity centre would help KUFOS to foster its linkage with the society. The proposed centre also would help students of KUFOS to develop entrepreneurship initiatives. “KUFOS students will get opportunity to market various fisheries products being prepared by them as part of their experiential learning programmes”, he said.

“The common amenity centre will have facilities such as special sales counters of the University and the co-operative society, medical dispensary, bank, post office, ATM, super market, cafes, rest rooms etc. A modern Fish Kiosk will be set up at the University sales counter. In addition to the usual services, fish cultured in the KUFOS farms and value added fishery products prepared by it will also be made available at the Fish Kiosk”, Prof. Kurup said.

Mahendra Raut, Superintending Engineer of Civil Engineering Wing of BSNL, which has been entrusted with the task of building the centre, presented a report. The three-storied centre with 1,725 square metre space will be built on a 30-cent plot at an estimated cost of Rs. 7.5 crore.

Dominic Presentation MLA, Adv. T K Devarajan, Chairman of Maradu Municipality, Dr. K Padmakumar, Pro-Vice Chancellor of KUFOS, Dean of KUFOS, Dr. Daisy C Kappen and Dr. VM Victor George, Registrar spoke at the function.



## New Library Complex Opened

Minister for Fisheries K Babu inaugurated the newly built library complex of Kerala University of Fisheries and Ocean Studies (KUFOS) on 23<sup>rd</sup> May 2015. The 774 square metre two-storey complex will have library, community information corner, digital library, reading rooms, reference rooms, internet rooms etc.



In his inaugural address, the Minister said that community engagement is an essential tool to achieve sustainable growth of fisheries in the State. KUFOS has taken a right step for the community engagement by hosting a community information corner at its library, the minister, who is also the Pro-Chancellor of the University, said. "The community corner is a good initiative to connect the academic community with the fishermen community", said the Minister.

"The fish farmers and the fisher folks will be able to access publications and CDs on various topics such as fish farming; organic feed formulations; disease diagnosis; marine and coastal laws; preparation of value additions; ocean phenomena and traditional knowledge offered by the University library at the community corner", he said.

The Minister also said that output of research works should reach the targeted community so as to improve the sector. "No research is meaningful unless it reaches the grass-root level", he said.



“Within a short span of four years, the KUFOS has achieved tremendous growth and contributed remarkably to the fisheries and ocean studies sector in the State., the University has achieved 40 years’ of accomplishments”, said the Minister.

In his presidential address, Vice-Chancellor Prof. B. Madhusoodana Kurup said the University library would be developed into an information gateway in fisheries and ocean Studies in South East Asia. The ‘knowledge revolution’ in fisheries and allied sectors being led by KUFOS would be a vital step for ushering in the second Blue Revolution in the country, the Vice-Chancellor said. Dr. K. Ambady, Managing Director of Kerala State Coastal Area Development Corporation, presented a report.

### **KUFOS Joins Hands with Malayala Manorama to Popularise Edible Fish Culture**

Kerala University of Fisheries and Ocean Studies (KUFOS) and Malayala Manorama jointly organised a training programme in Thripunithura on 25<sup>th</sup> April, with an aim to popularise the edible fish culture in homestead ponds. The programme was attended by 414 farmers in Ernakulam District. KUFOS Vice-Chancellor Dr B Madhusoodana Kurup, who inaugurated the training programme,

said Kerala was yet to tap the potential of inland resources to boost the aquaculture production of the State.

There was an open forum at the end of the technical session describing Edible fish culture in homestead ponds. As follow up activities of the programme, KUFOS will distribute seeds of cultivable fishes to the farmers who are interested to start fish culture in their home stead farms.



### **Clean KUFOS Mission Turns Big Hit**

The ‘Clean KUFOS Mission’ launched by Kerala University of Fisheries and Ocean Studies (KUFOS) on 30<sup>th</sup> January turned into a big hit with a huge participation of the University staff and students. The mission was held as part of implementing Swachh Bharat Abhiyan activities at the University, with an aim to maintain cleanliness of the University campus and its premises on a regular basis.



Vice Chancellor Dr B Madhusoodana Kurup inaugurated the mission. He stressed the need for a change in the mind-set of the people to create a new living culture with social consciousness. An intensive effort was needed to keep the public space clean and tidy. Each individual had a responsibility, the Vice Chancellor said. "The University puts forward a new

cleaning culture by implementing Clean KUFOS mission. This will not only keep the campus and its premises clean and tidy, but will convey a message to others the importance of cleanliness of public space", Dr Kurup added.

The active participation of VC in the mission helped spreading a positive energy among all others who engaged in the cleanliness drive. Dr. K. Padmakumar, Pro-Vice Chancellor, Dr. V. M. Victor George, Registrar, Joby George, Finance Officer and other statutory officers, teachers, staff and students actively involved in the mission.

### **KUFOS Participates in GFIA Meet**

Kerala University of Fisheries and Ocean Studies (KUFOS) participated in the



Global Forum for Innovations in Agriculture (GFIA-2015) held from March 9 to 11 in Abu Dhabi, the UAE. KUFOS presented the technologies developed by the varsity in aquaculture and allied areas. The latest research outputs in the areas were also presented at the Forum, which set up a platform for analysing the means and ways to improve global agriculture production. GFIA was attended by international experts from various agriculture sectors.

KUFOS also showcased the models of diversified aquaculture practices such as cage culture and pen culture at the exhibition stall of the event. Universities, research institutions and agriculture scientists from all over the world participated in the GFIA. KUFOS was the only University from India participated in the event.

Vice-Chancellor Dr. B. Madhusoodana Kurup and Registrar Dr. V. M. Victor George represented KUFOS at the global meet.

### **Vice Chancellor Presents Paper at Global Meet on Food Security**

Prof. B. Madhusoodana Kurup, Vice-Chancellor of Kerala University of Fisheries and Ocean Studies (KUFOS) presented a paper on 'Impact of Global Warming on Fisheries and Aquaculture: A Threat to Food Security' at the Third International Conference on Global Warming and Food Security at Ras Al Khaimah, the UAE on May 6, 2015.

"Climate change is taking a toll on fisheries sector with the consequent ocean warming posing multiple threats to biodiversity, structure and functioning of ocean ecosystem", he said. He also said that the recent data showing decline in the availability of fish in Indian coasts could be attributed to the consequences of global warming and climate change and its impact on ocean ecosystem. "Various aquaculture practices in inland water bodies of the country are badly being affected due to the phenomena", he added.

"Climate change causes sea level rise, extreme weather events, increased frequency of diseases and toxic events and uncertain supplies of freshwater", he said at the conference, which is being organised by Environment Protection and Development Authority (EPDA) of the Government of Ras Al Khaimah.

"The global sea level rise is around 3 mm per year, caused primarily by warming of the ocean and melting of glaciers while the sea level rise at Indian Ocean is ca. 2 mm per year. Global sea levels are rising at an increasing rate, which is projected to be around 59 cm by 2100", the Vice Chancellor said.

The major impacts of sea level rise are on coastal agriculture, tourism, freshwater

reserve, fisheries, aquaculture, human settlement, health, biodiversity, damage to fishery infrastructure such as landing centers, harbours, coastal dwelling units, ancillary industries, etc., Dr. Kurup said. "Climate change threatens the inherent relationship between food and climate, and damages irreversibly the natural resource base on which fisheries and aquaculture depends", he added.



### Long term strategy needed

Policymakers and authorities concerned should focus on implementing long term programmes to tackle the issue. "The Kerala State Action Plan on Climate Change, a project initiated by the government of Kerala aimed at integrating climate change strategies into the development planning process, is a right step towards addressing the issue of climate change", he said.

The 3rd International Conference on Global Warming: Food Security, which started on Tuesday (May 5), is being organised for delivering state-of-the-art analysis, inspiring visions and innovative research methods arising from interdisciplinary research. Leading academic scientists, researchers and scholars around the world are participating in the event to exchange and share their experiences and research results about all aspects of global warming and food security and discuss the practical challenges encountered and the solutions adopted.

### Public Lecture on Medicines from Nature

Dr Muraleedharan G Nair, Professor and the Principal Investigator of the Bioactive Natural Products and Phytochemicals Laboratory in the Department of Horticulture at Michigan State University, USA, delivered a public lecture on Medicines from Nature to Treat Human Diseases, at Kerala University of Fisheries and Ocean Studies (KUFOS) on 13<sup>th</sup> April on invitation by Prof. K. Padmakumar, Pro Vice-Chancellor.

According to him, major pharmaceutical companies are manufacturing medicines in India, but the country should focus on developing new technologies to produce medicines.

"Natural medicine can be developed by amalgamating traditional knowledge, current knowledge, modern technology and high standards. There are high prospects to develop medicines from various marine organisms by isolating biologically active compounds", Dr. Nair said.



"The country has high potentials for developing medicines from nature. Advanced and collaborative research is needed to boost the pharmaceutical industry of the country. Multidisciplinary collaboration is required to develop pharmaceuticals from natural products. Native people, farmers, marine biologist, chemists, pharmacologists, clinicians etc have significant roles

in the process. About 75 per cent of pharmaceuticals are based on natural components”, Dr Nair pointed out.

He revealed that his effort to develop a medicine using the extract of Aswagantha for Alzheimer’s disease was in the final stage of formulation. “The medicine will be come out within one or two years”, said Dr Muraleedharan Nair, who has the patent for developing the botanical compound called withanamides from the seeds of Aswagantha, which is a traditional medicinal plant commonly being used in India. “The withnamides are potent anti-oxidants which can prevent oxidation reaction catalysed by beta amalyloid protein in the brain”, he explained.

KUFOS Vice-Chancellor Prof. B. Madhusoodana Kurup said that the University had plans to mariculture and to enhance research activities for developing medicines from marine organism.

“The Centre for Bioactive Substances from Marine Organism, the research centre at KUFOS is gearing up to strengthen research activities on biologically active compounds from marine organisms which can be used in drugs, pharmaceuticals, nutraceuticals and other value added products. The research centre has also plans for initiating collaboration with other institutions in India and abroad”, Dr Kurup said.

### Workshop on Cash Crops

A workshop on Cash Crops was held at KUFOS on May 14. The workshop observed that the fall in rubber prices in the State is caused mainly by the global economic slowdown and the crisis would continue for another three-four years.

“The rubber sector directly depends upon the automobile sector, which is in crisis due to globally affected economic stagnation. Unfavourable climatic conditions and the rising temperature have also been adversely affecting rubber production”, pointed out the

experts at the workshop, which was organised by the Department of Food Science and Technology, KUFOS and Kerala State Council for Science Technology and Environment.

The workshop, which observed that the sector was experiencing a severe shortage of rubber tappers, proposed that steps be taken to attract youths into the rubber industry.



Prof. K. V. Thomas MP, who inaugurated the workshop, stressed the need for focusing on addressing realistically the challenges being faced by the cash crops sector in the State. “We cannot solve issues by shouting slogans and having *bundhs* or *hartals*. A realistic approach is needed to tackle the challenges faced by the sector to make the crops profitable by finding trade in international market”, he said.

Prof. Thomas also said a set of rules and regulations must be formulated to improve the quality of the value added products from the crops. “Quality has to be strictly maintained at all levels to sustain hard competition in global markets”, he said.

Dr. K. Padmakumar, Pro Vice-Chancellor of KUFOS presided over the meet. He said the country had made remarkable achievements in food and agriculture sectors.

Delivering a keynote address on ‘Spices extracts and their role in processed food industries’, George Paul, CEO of Synthite Industries, stressed the need to keep strict safety measures while producing value added food products. The usage of harmful pesticides should also be banned to protect ecosystem and maintain sustainability, he added.

Kurien Abraham, Chief Editor and Managing Director of Rubber Asia spoke on the topic ‘natural rubber: challenges and opportunities’. Dr. T. V. Shankar, Dr. V. Venugopal, Dr. Sanu Jacob, Dr. K. Gopakumar and Dr. V. M. Victor George also spoke at the workshop.

Various experts, scientists, academicians and students participated in the workshop.

### **Foundation Laid for PG Hostel for Men at KUFOS**

K. Babu, Minister for Fisheries, Ports and Excise laid the foundation stone for a Men’s Hostel for PG students at KUFOS on 1<sup>st</sup> June 2015. He said that KUFOS should undertake a study on trawling ban taking into consideration Kerala’s situations.

“Reports of the earlier studies on the issue have overlooked the peculiar situations in the State. The Centre’s ban on trawling, which is based on those reports, has created a crisis situation in Kerala”, the Minister said. “The scientists of KUFOS should take the initiative to study the pros and cons of trawling ban in Kerala” Babu said adding that the government has no plans to change the existing trawling ban period of 47 days in the State.

The Minister also blamed the Central Government for the 61-day unified fishing ban that it has imposed without seeking the opinion of the state. He said that it has caused a crisis in the fishing sector of Kerala.

“Trawling ban imposed by the state government begins on June 15. Since introduction of trawling ban in 1988 along Kerala coast, traditional fishermen



were allowed to engage in fishing during the ban period. But the Central Government has decided to impose a total ban for 61 days. Though Prime Minister said that the ban would not be applicable for the traditional sector, there has been no assurance in this regard,” Minister said.

The new hostel is being built at a total plinth area of 1,156 square metre. The construction work of the PG hostel for women is underway at the campus. BSNL Civil engineering wing which has been entrusted with the work is expected to complete the construction in a year.

Vice-Chancellor Prof. B. Madhusoodana Kurup, who presided over the function, said the University would formulate socially committed projects, including studies and research integrating scientific and practical elements together. “KUFOS will lay stress on conducting studies on topics, which directly affect the fishing community, such as trawling, weather, various ocean phenomena etc.”, he said. The Vice Chancellor also said KUFOS would be developed into a hub of fisheries and ocean studies education in India.

Mr. Mahendra Raut, Superintending Engineer of BSNL Civil Engineer Wing, presented a report.

Mr. Dominic Presentation, MLA, Adv. TK Devarajan, MG Satyan, Dr. K Padmakumar, Dr. NR Menon, Dr. K V Jayachandran and Dr Victor George offered felicitation.

### **KUFOS Launches ‘One Student One Plant’ Initiative**

Kerala University of Fisheries and Ocean Studies (KUFOS) introduced a model green campus drive by the launch of the ‘One Student One Plant’ initiative at the varsity as part of the World Environment Day on 5<sup>th</sup> June 2015. As part of this initiative, the students planted saplings of flowering, fruit yielding and medicinal plants in the three campuses of KUFOS, sprawling

over 80 acres. A micro forest (*Kuttivanam*) in an area of 10 cents was also launched at the varsity as part of the programme.

KUFOS Vice- Chancellor Prof. B Madhusoodana Kurup inaugurated the programme by handing over a sapling to one of the students. He said the human beings focused more on plundering the nature instead of consuming it with care. Over-exploitation of the natural resources had led to the formation of harmful side effects, he said.



"Global sea levels are rising at an increasing rate, which is projected to be around 59 cm by 2100. The rise of the sea level will have a negative impact on numerous sectors such as coastal agriculture, tourism, freshwater reserve, fisheries, aquaculture, human settlement, health, biodiversity etc., Dr. Kurup said.

He also said that policymakers and authorities concerned should focus on formulating eco-friendly development policies to protect the ecosystem.

As part of the environmental day, the Nature Club at KUFOS also hosted an awareness programme. Mr. C. R. Neelakandan, eminent environmentalist, delivered a lecture on the relevance of nature conservation.

### Swimming Pool Inaugurated



The swimming training has become easier to the students of Kerala University of Fisheries and Ocean Studies (KUFOS). Now, the students can have the swimming training at the campus itself. A state-of-the-art swimming pool was commissioned at the varsity by the Fisheries Minister K Babu. The facility was set up to train the University students swimming, which is part of the fisheries curriculum. The pool has a capacity of four-and-half lakh litres of water and is 25m long and 10m width. It has four

tracks, four starting blocks, all round deck slab, and spring board for diving, bathroom and toilets for boys and girls and automatic water filtration units.

The Minister in his inaugural address said the swimming pool had capacity to host inter-collegiate swimming competitions. "The pool, which is situated adjacent to the playground, will attract more sporting events to the university," said the Minister.

KUFOS Vice-chancellor Dr. B. Madhusoodana Kurup, who presided over the function, said a state-of-the-art gymnasium and ancillary facility would be set up near the swimming pool. "The swimming pool, which is primarily aimed at imparting training to fisheries students, could also be used by the other students and staff," he said.

On the occasion, the Minister also released 'Challenger', the newsletter of KUFOS. Prof. K. V. Thomas MP, Dominic Presentation MLA and Pro-vice-chancellor Dr. K. Padmakumar, among others, were also present.

Prof. K. V. Thomas MP, Mr. Dominic Presentation MLA, Pro Vice-Chancellor Dr. K. Padmakumar, T. K. Devrajan, M G Satyan, Dr. M. S. Raju, M. Rajeev, Dr. S. Suresh Kumar, Dr. Daisy C. Kappen, Registrar Dr. V. M. Victor George and K. M. Joy spoke on the occasion.

The pool was constructed by Kerala State Coastal Area Development Corporation.

### **New Entrance Gate Opened**



Minister for Fisheries K Babu inaugurated the new entrance gate of KUFOS on 17<sup>th</sup> September 2015. The Minister opined that KUFOS was playing a major role in the fisheries sector of the State.

"KUFOS is actively engaging with the community by executing socially committed projects beneficial to the fishermen community and fish-shrimp farmers in the State. The State government will provide all assistance to

KUFOS to make the varsity a centre of excellence in fisheries and ocean studies sector in the country", K Babu, who is also the Pro-Chancellor of the University, said.

KUFOS Vice-Chancellor B. Madhusoodana Kurup, who presided over the function, said the University would explore collaborations with international educational and research institutes to strengthen the academic and research activities of the varsity. "By 2020, KUFOS will be offering 60 courses under 40 Departments", he said.

Dominic Presentation MLA, T K Devarajan, Registrar V M Victor George, M G Satyan, K V Jayachandran, MahendraRaut and K M Joy spoke on the occasion.

### **First Industrial Advisory Board Meet**

The first meeting of an Industry Advisory Board (IAB), established under the Department of Food Science and Technology of KUFOS, was convened on 9<sup>th</sup> November 2015. The meeting decided to set up an academic-industrial partnership at the varsity to upgrade the food science education by enhancing the industrial skill of the students and thus ensuring easy employability.

The Board meeting stressed the need for developing and reviewing periodically the syllabus for Food Science courses at KUFOS in accordance with the relevant requirements of food processing industry. The meeting suggested that KUFOS Academia-Industry linkage could be focused on areas such as curriculum development, internship, issue-based research projects funded by industrial bodies, industrial training, conduct of short-term specialised courses, service of industrial experts as the visiting professors, starting of Ph D programmes in specialised areas with the industrial partnership etc.

As part of the varsity's industrial partnership, KUFOS will seek the support of various industrial bodies to shape the skill development of the students in the Department of Food Science at the University in accordance with the demand of the food production industry.

"At a time when the quality of processed food is a concern, KUFOS is ready to utilise its resources to conduct relevant issue-based research projects with the industrial support", said Dr. B. Madhusoodana Kurup, Vice-Chancellor and Chairman of the I A B. The research would be beneficial to the food processing industry and the students of the KUFOS as well, he said.



"The employment opportunities of students coming from KUFOS is very bright since the preference of processed food is increasing in the country which is only three per cent of the harvested food at present when compared to 60 per cent in the USA", Dr. Kurup added.

"Services of experts from the industrial bodies are essential to improve the research works", he said adding that KUFOS would start short-term courses in the areas of food

processing, quality assurance, value addition etc. by utilising the expertise and service of those from the industry as visiting professors.

Dr. Jose James, Managing Director of Kerala Livestock Development Board and the member of KUFOS IAB pointed out that the students would be permitted to use the government facilities in food processing sector.

“Practical knowledge is necessary to ensure the employability by the completion of the course. We are ready to cooperate with KUFOS in providing meaningful practical training and other facilities to the students”, said Dr. C. N. Ramchand, famous scientist and CEO of the Chennai based Sakshin Lifesciences Private Limited.

George Paul, Vice-Chairman of IAB and Managing Director of Synthite Industries Limited, said food flavour an important area for research and the industry will cooperate with KUFOS to offer a Ph D programme in the area.

Dr. K. Padmakumar, Pro Vice-Chancellor of KUFOS; Dr. Ravishankar C.N., Director of Central Institute of Fisheries Technology (CIFT); Sivakumar, Managing Director of Innovative Foods Limited; Dr Baby Jacob, Managing Director of Synergy Systems; Bobby Issac, Country Director of Lacon Qualitat; Dr. K. Gopakumar, Head of the Department of Food Science and Technology at KUFOS; Dr. V. M. Victor George, Registrar of KUFOS; Dr. D.D. Nambudiri and Dr. Sanu Jacob attended at the meeting.

### **World Fisheries Day 2015 Observed**

Kerala University of Fisheries and Ocean Studies (KUFOS) observed the World Fisheries Day 2015 with several programmes, including a rally, fisher folk meet, seminar on Indigenous Traditional Knowledge, training programmes, quiz, exhibition and open house.

Fisheries Minister K. Babu inaugurated the two-day celebrations on 20<sup>th</sup> November 2015. He urged the fishermen to refrain from uncontrolled fishing activities which, he said, would lead to the decline of marine fisheries resources.

“The fishermen should keep away from the overexploitation of the fishery resources. It is leading to the depletion of commercially important fish species”, he said. Climate change and global warming was also leading to the deterioration of the sector, the Minister said. “KUFOS should conduct a detailed study on climate change and its impact on the fishery”, he said.

He gave away the Fisheries Awards, constituted by KUFOS, to K. A. Paili from Edavanakkadu for the Best Traditional Fisherman, Jenson P D from Paravoor for the Best Fish Farmer, Dr. K. Gopakumar for the Best Fishery Scientist and SaliniGopi for the Best Fisheries Student.

Vice-Chancellor Dr. B. Madhusoodana Kurup presided over the function. He

said KUFOS was marching ahead of its destination by helping the country to usher in the second Blue Revolution to accelerate the blue economy.

Dr. K. Padmakumar, Pro Vice-Chancellor, Dr. V. M. Victor George, Registrar, Dr. Sunil Muhammed, Principal Scientist, CMFRI, Anwar Hashim, GC Member, Dr. V. N. Sanjeevan, GC Member, Dr. M. K. Sajeevan and Dr. Daisy C. Kappen spoke on the inaugural session.

Teachers, students, fishermen and the general public attended at the rally, which was flagged off by Vice-Chancellor Dr. B. Madhusoodana Kurup.



As traditional fishermen shared their knowledge about ocean, fish, winds and clouds that they acquired over generations, fisheries scientists and students sat glued to their seats listening to the indigenous lessons on marine fishery during a seminar on Indigenous Traditional Knowledge at KUFOS held in connection with the World Fisheries Day celebrations.

Just by feeling the direction of the wind and the position of the clouds, they can tell

whether it would rain or not, fisherfolk claimed, standing by their traditional wisdom. The colour of the horizon and particular constellation of stars called 'Meenkani' can show them where exactly to fish for a good catch. The sharing of indigenous knowledge on ocean and fish by eighteen fishermen turned out to be an interesting session for the participants, most of them students.

SreekanthKaipaparambil, a traditional fisherman hailing from Vallarpadam, said that they can foresee rain by observing the nature of clouds and direction of the wind. "The chances of rain are high if there is a 'Dhennikkattu', wind that blows from the south-east to the north-west direction.

There will be no rain despite the presence of clouds if the wind is blowing from north to south," he said. Timing is very important to land a good catch. "Thakkam, 12 days after Ekadashi, is a crucial period during which fishermen usually operate a stake net (commonly called 'oonnivala') to get a good catch," Sreekanth explained.

"Ashtami day, the middle day of two moons (vavu) is the ideal time to have good yields of varieties of perch like snappers and gropers (Chembally and Kadalkaruppu)," said V T Sebastian from Chellanam.

For traditional fishermen, the colour of the sea and sky also give key information on the availability of fish. “The reddish hue seen in the horizon on certain evenings is believed to signal the presence of mackerel,” he said.

“The red water phenomenon covering wide areas and drifting along with the currents due to the intensive multiplying of certain micro algae portends fish kill. On such occasions, we avoid fishing in such areas,” Sreekanth said.

Karthikeyan P K, district secretary of Dheevera Sabha, explained the operation of the simple traditional gears like ‘Padal’ and ‘Njerumbu’ and also about the harvesting process called ‘Kettukalakku’.

The fishers also stressed the need to preserve the traditional knowledge in fisheries to improve the sustainability of the sector.

Dr. Gopinath Panangad and Dr. Asha Latha, Principal Scientist from CIFT were the moderators of the seminar.

An Open House, organised by KUFOS as part of the observance of the World Fisheries Day, showcased the facilities and the initiatives being undertaken by Kerala University of Fisheries and Ocean Studies (KUFOS). The expo helped the public to understand the latest advancements in fisheries and oceanic sectors.

The students from the School of Aquaculture and Biotechnology exhibited different models of hatcheries for fish breeding and larval rearing, instruments being used in aquaculture, models of cages for farming, traditional fishing tools and gears, fish feeds etc. They explained the functionalities of a hatchery and steps for disease surveillance to the visitors, and the students clarified their doubts on aquarium setting and keeping. Different phases of mussel culture were also showcased at the stall of the School of Aquaculture and Biotechnology. Apart from the stall, the live farming ponds, hatcheries and aquarium were also permitted to the visitors to understand the aquaculture activities being undertaken in the varsity.

The students of School of Aquatic Food Products and Technology showcased various machines being used for fish processing and producing value additions. The visitors were permitted to see how the students were making food products from fish in their lab. While some of the students in the Schools were explaining the different stages of fish processing and its methods, the other group of students were doing brisk business of selling out their food products the food products such fish cutler, fish roll, fish burger and fish pickle prepared by KUFOS students themselves. The students sourced their raw materials, tested them for quality in the laboratories at the University and got them ready to be served.

Specimen of almost all the marine and freshwater species were showcased at a museum set up by the School of Fisheries Resource Management and Harvest Technology.

The fishery scientists in the State should avoid Euro-centric approach to conduct study about the Indigenous Traditional Knowledge (ITK) of fishermen, said Dr. K. S. Radhakrishnan, Chairman of the Public Service Commission, adding that contextual importance of ITK need to be considered for unearthing scientific facts behind it.

He was speaking at the valedictory function of the World Fisheries Day celebration, organized by Kerala University of Fisheries and Ocean Studies (KUFOS).

He also said that the traditional wisdom prevailed among the fishermen in State should not be ruled in accordance with the scientific methodologies framed by the westerners.

Indian Universities should keep away from blindly following the western research methodology to conduct study on regional topics, Dr Radhakrishnan added.

He suggested that KUFOS should take steps to develop its study on the importance of traditional wisdom in the fisheries sector, adding that the ITK is essential for improving the sustainability of the fisheries.

He distributed trophies to the winners in various competition conducted by KUFOS. Angel Albert and Arya K Gopy from GVHSS Njarakkal bagged the first prize in fisheries quiz and Muhammed Afif from College of Veterinary Science, Pookod, got the first prize in essay competition.

Dr. K. Gopakumar presided over the function. Dr. K Padmakumar, Pro Vice-Chancellor, Dr. V. M. Victor George, Dr. M. K. Sajeevan and Dr. Daisy C. Kappen spoke on the occasion.

### **World Fisheries Day 2014 Observed**

Kerala University of Fisheries and Ocean Studies (KUFOS) observed World Fisheries Day with several programmes, including a colorful rally,

fisher folk meet, seminar and exhibition. Fisheries Minister, K. Babu, Vice-Chancellor Dr. B. Madhusoodana Kurup, teachers, students, fishery scientists, officials, social workers and fishermen participated in the rally. The slogan of the rally was "Conservation of Fishery Resources for the Protection of Humankind". Artistic talents of the students highlighting the significance of the day were also displayed in the rally.





The Fisher Folk Meet was inaugurated by Fisheries Minister K Babu. He urged fishermen not to involve in uncontrolled and unscientific fishing activities. “Uncontrolled and unscientific fishing activities using prohibited nets will destroy the fishery resources and it will badly affect sustainability of the sector”, he said. Fisheries sector was facing a number of issues such as global warming, climate change and depletion of fishery resources. Joint efforts including the cooperation of fisher folks were needed to the sustainability of fisheries, he added.

The Minister gave away the second Fisheries Awards announced by KUFOS. P. A. Muhammed Ali (Best Traditional Fisherman), K. J. Andrews (Best Innovative Fish Farmer), Prof. M. J. Sebastian (Best Fisheries Educationist), Syam K. U. (Best Fisheries Student) and Dr. Devadasan (Best Fishery Planner and Administrator) were presented mementos and accorded warm reception draped with *ponnada*.

Vice-Chancellor Prof. (Dr.) B. Madhusoodana Kurup presided over the function. He said food security and employment security would be achieved by exploiting the prospects fishery resources of the country effectively. Kerala was yet to exploit the prospects of inland fishery. He also said steps should be taken to address the problems of fisher men in the state.

Adv. T. K. Devarajan, Chairman of Maradu Municipality, M. G. Satyan, President of Kumbalam Panchayat and Adv. K. K. Radhakrishnan, member of KUFOS Governing Council spoke at the session. Dr. M. S. Raju, Director of School of Management and Entrepreneurship, welcomed the gathering and Dr. K. S. Purushan, Professor of Eminence at Pandit Karuppan Chair of KUFOS proposed the vote of thanks.

An exhibition, in which various traditional fishing tools were displayed, was one of the main attractions of the programme. Minister K. Babu also released a book on traditional fishermen and traditional knowledge, published by the Pandit Karuppan Chair of the University.



A seminar on the issues being faced by traditional fishermen and traditional knowledge followed the fisher folk meet.

### World Fisheries Day Celebration 2013

KUFOS celebrated World Fisheries Day on 21<sup>st</sup> Nov, 2013 with several programmes, including colourful rally and public conference. The rally was flagged off by KUFOS Vice-Chancellor Dr. B. Madhusoodana Kurup in which University students, teachers, employees, DBMA students from Fisheries Station, students of GVHSS, Kadamakkudy, traditional fisher-folk, leaders and social workers participated. The rally highlighted the theme “Conservation of Fishery Resource for the Protection of Humankind”.

The public conference was inaugurated by Mr. C.P. John, Member State Planning Board. He stressed the need for ushering Blue Revolution (Fish revolution) emulating the models of Green Revolution and White Revolution. Vice-Chancellor Dr. B. Madhusoodana Kurup presided over the function. He assured that KUFOS would take steps to bring the fisher-folk into the mainstream of the society. As part of the celebration, the first Fisheries Excellence Awards declared by KUFOS were distributed to the frontrunners.

### World Ocean Day Celebrated

The World Ocean Day was celebrated at Kerala University of Fisheries and Ocean Studies (KUFOS) on 8<sup>th</sup> June 2015. As part of the observance, a conference on ‘Ocean Conservation’ was organised at the varsity by the School of Ocean Studies and Technology.

The conference observed that disposal of nuclear waste into the sea is a serious threat to the ocean wealth and international maritime rules and regulations should be strengthened to curb the menace of waste dumping into the sea. The theme of the conference was ‘Healthy Ocean, Healthy Planet’.

Speakers at the conference said the oceans were a depository of a variety of resources including fish, energy and minerals. But the resources would



be badly affected due to the dumping of nuclear waste expelled from many nuclear reactors, which is a big threat to the very existence of marine life and humankind. The conference also proposed that an eco-based approach be adopted for maintaining the sustainability of ocean resources and conserving the marine ecosystem.

Cochin University of Science and Technology (CUSAT) Vice-chancellor Dr. J. Letha inaugurated the conference. She said ocean resources should be protected for the existence of humankind. “An integrated approach is needed to find ways to conserve the ocean”, she said. Dr Letha also said that Researchers should consider the sociological aspects in their research activities in connection with the oceanic sector. “The common man should also be made aware of the study reports and the regulations being followed,” she said.

In his presidential address, Prof. B. Madhusoodana Kurup, Vice-Chancellor of KUFOS, said human beings were increasingly dependent on the ocean's resources and, hence, sustainable utilisation was essential to conserve the resources. He suggested that effective methods should be formulated to preserve ocean resources since the ocean plays a major role in fulfilling food security.

Dr N. R. Menon, Chairman of the Nansen Environmental Research Centre, India, said alternative ways should be found for waste disposal. Existing global maritime rules and regulations should be strengthened to curb the problem of dumping of waste in the sea.

National Centre for Earth Science Studies former scientist Dr. K. V. Thomas said the rich energy resources in the ocean were yet to be explored. “Eco-friendly technologies should be developed for utilisation of these resources so as to solve the energy crisis facing the country,” he said.

Prof. N. Rajendran pointed out that India was lagging behind the other

nations in developing medicines from the living resources of the ocean. “Bio-active compounds from marine organisms, such as bacteria, fungus, corals, sponges, echinoderms and fishes, are highly prospective in curing various diseases, including cancer,” he said.

“India is also lagging behind in commercialising the medicines that have already been developed. Both policymakers and researchers should focus on this, for boosting the healthcare sector of the country,” he added.

Eminent scientists, experts, oceanographers, technocrats, and students participated in the conference, which focused on the theme ‘Healthy Ocean, Healthy Planet’.

### World Jelly fish Day

World Jelly fish Day was observed at Kerala University of Fisheries and Ocean Studies (KUFOS) on 3<sup>rd</sup> November 2015. The meet conducted as part of the observance observed that the jellyfish, an umbrella-shaped jelly-like aquatic species belonging to phylum ‘*Cnidaria*’, has many advantages too.

The fishery experts called for exploring the prospects of the *gelatinous zooplankton* for making multiple value added products and identifying its export value.

“The species is commonly considered only as dangerous and troublesome, but it is used as food products, nutraceuticals and cosmeceuticals and thus has export value”, said Dr. K. Padmakumar, Pro-Vice Chancellor of KUFOS.

“Many jellyfish varieties are widely used for making several value added products in foreign countries especially in China. It is used as food and also as products such as soups, creams, pickles, dried snacks and muffins etc. It is a common food variety in China, Japan and Korea”, he said.

He also said that serious research was required to identify the edible jellyfish varieties in Indian waters. “In many of the countries such as China, Japan, Korea, Philippines, Malaysia and Thailand, food items with jellyfish are widely being consumed. Hence the edible jellyfish has high export value”, Dr. Padmakumar added.

“We are yet to explore the possibilities of the species for making benefits out of it by developing value added products and identifying its pharmaceutical and cosmeceutical importance”, he said.

Dr. Padmakumar pointed out that the compounds extracted from the jellyfish could be effectively used for developing nutraceuticals. “Gelatin, a protein used for making many cosmeceuticals, can be extracted from the jellyfish. And the venom of the jellyfish is used in pharmacological activities”, he said.

Presently, the increased presence of jellyfish blooms along the southwest coast of India is feared to impact tourism and fishing activities. “If we are focusing on exporting the edible jellyfish varieties, the proliferation of the species can be fully controlled”, said Dr. B. Manoj Kumar, Associate Professor

of KUFOS, who was delivering a keynote address at the function.

“Unlike in India, jellyfish is consumed as food items in many foreign countries, and so the export of the species has bright prospect, paving the way for curbing the jellyfish blooms in Indian water bodies”, he added.

Dr. Manoj Kumar is the Principal Investigator of a project ‘Distribution of gelatinous zooplankton along the west coast off India and their identification’ run by KUFOS.

Dr. K. V. Jayachandran, Director of Research at KUFOS, said that advanced studies are essential to classify the jellyfish varieties in the State. Dr. K. Ranjeet, Director of School of Fisheries Resource Management of KUFOS, said the export companies in the country should focus on marketing the suitable jellyfish varieties.

The function was attended by teachers, research fellows and students.

### Placement Cell

Fisheries graduates of this institution received good placement during the past two decades. These students recruited by foreign and Indian companies. The foreign companies who have recruited our graduates are : Alpha group Tanzania and Uganda, Nile Perch Pvt. Ltd., Dubai, IFTRA Pvt Ltd. Dubai, Magneta foods, Dubai, Cee Cee Seafoods, Dubai, Saju's Sea Foods, Uganda. The Indian companies who have recruited our students are : Torry Harris Sea food Pvt. Ltd., Amalgam Foods, Spencer Retain India Pvt. Ltd., Pest Control India, HDFC Bank, Abad Hotels, Moon Fishery (India) Pvt. Ltd., Baby Marine Pvt Ltd., Garware Wire Ropes, Hindustan Lever Pvt Ltd., C P Feeds (India) pvt. Ltd.

During the past One and half decades, our students performance was excellent. Our students acquire JRF at ICAR examination and qualify for M F Sc at CIFE Mumbai. At CIFE our students perform excellently well and received Dr. C. V. Kulkarni Gold Medal (M F Sc over all topper) consecutively for many years in succession. Similarly our students bag most of the ARS scientists positions. For Example during the year 2009 and 2010 16/26 and 6/15 positions were held by our alumni. In 2009 our alumni secured more than 95 percentage of position of Lecturers recruited to Vocational Higher Secondary Education by Kerala Public Service Commission. It is quite interesting to note that nearly 10% of our alumni are entrepreneurs and they recruit our students from University.

### ALUMNI

- ★ The alumni consists of 55% females and 45% males
- ★ About 85% students are from the State of Kerala and 15% from other States
- ★ About 18% of male 28% of female alumni are in State Government employees
- ★ About 43 % of males and 20% of female alumni are employed in Private Industry

- ★ About 15% of males and 25% females alumni are going for higher education
- ★ Around 5-7% have joined Financial institutions
- ★ Around 7% are Entrepreneurs
- ★ Around 10% and 47% males are working in seafood industries in India and abroad respectively
- ★ Around 5% and 11% males are working in food industry in India and abroad respectively
- ★ Around 10% and 8% of males are working in Aquaculture industry in India and abroad respectively
- ★ Around 13% and 13% of males are working in other areas in India and abroad respectively
- ★ Around 31% and 8% females are working in seafood industries in India and abroad respectively
- ★ Around 32% and 10% females are working in food industries in India and abroad respectively
- ★ Around 23% of females are working in other areas in India
- ★ Our Alumni have received fellowships/ scholarships : USAID fellowship, DANIDA fellowships, NUFFIC fellowship (Netherlands), UN Fellowship Iceland; NACA fellowship, INSA fellowship, DBT fellowship.
- ★ More than 80 alumni are Scientists in Indian Council of Agricultural Research in various capacities from Principal Scientist to Scientists.
- ★ More than 20 alumni are Professors / Associate Professors / Assistant Professors in various Universities
- ★ Around 50 alumni are Lecturers in Vocational Higher Secondary Schools
- ★ More than 100 alumni are in administrative capacities in the Department of Fisheries, Government of Kerala
- ★ Our alumni are toppers in PG programmes of CIFE Mumbai and recipient of Prof. C. V. Kulkarni award continuously from 2000 to 2011.
- ★ A few alumni are successful management experts in Universities and private firms
- ★ Many alumni pursued higher studies and research in USA, UK, Norway, Singapore, Korea, Japan

### Placement History

Year	Total	Higher studies M F Sc	Higher Studies MBA	Placement
2011	29	22	0	3
2012	45	22	0	10
2013	48	25	2	10
2014	49	20	0	15

# International Seminars/Symposia

## 1. First World Ocean Science Congress

The four-day World Ocean Science Congress (WOSC), jointly organised by Kerala University of Fisheries and Ocean Studies (KUFOS) and Swadeshi Science Movement, was held from 5<sup>th</sup> to 8<sup>th</sup> February in 2015 in Kochi. The Congress opened a new chapter in finding means to protect and preserve oceans and marine life across the world.

Eminent oceanographers, scientists, marine experts, environmentalists, naval exponents and maritime industrialists from across the participated in the Congress held at Jawaharlal Nehru International Stadium at Kaloor, Kochi. About 450 technical papers were presented in 13 sessions by 86 Indian institutions and 14 foreign institutions.

Government agencies and institutions like the Naval Physical and Oceanographic Laboratory (NPOL), National Centre for Antarctic and Ocean Research (NCAOR), Indian National Centre for Ocean Information Services (INCOIS), Central Institute of Fisheries Technology (CIFT), Central Marine Fisheries Research Institute (CMFRI), National Institute of Oceanography (NIO), Centre for Marine Living Resources and Ecology (CMLRE) and the National Institute of Ocean Technology participated in the Congress which had the focal theme “Blue economy and protection of Indian Ocean”.

### ‘Commercialization of ocean sector a threat to mankind’

Inaugurating the Congress, Hon'ble Kerala Governor Justice P Sathasivam said that rapid commercialization of the ocean sector with little regard to ecology was a major threat to marine ecosystem and the very existence of mankind.



The Governor noted that increased commercialization had affected the livelihood of the fishing community, who have even been forced to move out of their habitat of late. "Commercialisation is also a threat to maritime culture and traditions," he said, lamenting that the Indian Ocean remains "the least understood and managed oceans in the world" despite it being the most productive of all.

"Effective management of the ocean and its resources is a challenging task due to lack of regional co-operation, increasing population in coastal areas and socio-economic conditions," he added.

Hon'ble Minister of Fisheries, Ports and Excise Shri. K. Babu, said the report on deep-sea fishing policy would have adverse impact on the livelihood of fishing community, especially for those in Kerala. The Centre should review the policy, he noted while delivering the presidential address.

Other speakers at the inaugural session included Shri Dominic Presentation MLA, Shri S Sharma MLA, KUFOS Vice-Chancellor and WOSC 2015 Chair Prof. Madhusoodana Kurup, National Fisheries Development Board Chief Executive Dr M V Rao, Vijnana Bharati Secretary General Shri A Jayakumar, WOSC 2015 Secretary General Dr. V. N. Sanjeevan, Naval Physical and Oceanographic Laboratory Director Shri. S. Anantha Narayanan and Indian National Center for Ocean Information Services Director Dr. Satish Shenoy.

Fishermen and fisherwomen meets, organised as part of the congress, turned out to be a platform for the fishing community to raise their concerns before the scientific community. The fishing workers' representatives also stressed on the need for greater interaction between the researchers and the fisher folk to help improve the livelihood of the fishing community.

The fishing community expressed their concern over the fishing policies being adopted by the authorities stressed the need for the government to resolve the issues faced by them, the challenges and risks involved in their work and to safeguard their interests and to notify the central government regarding the same. The fisherwomen meet highlighted the issue of malnutrition among the female children in the coastal districts of Kerala and sought an intervention of the government agencies to address the same.

Kerala University of Fisheries and Ocean Studies (KUFOS) Vice Chancellor Prof. B. Madhusoodana Kurup, who was also Chair of the Congress, pointed out that India's marine education programme should offer incentives such as incubation facilities for startups and greater industry-academia linkages to attract skilled and talented young people to the sector.

Naval officers, who attended the Congress, stressed the importance of including coastal security in the curriculum in schools and colleges. They pointed out that though the country had a three-layer security system consisting of the Navy, Coast Guard and Coastal Police to deal with any threat from the sea, there was no system in place to check the threat from underwater.



Scientists of various research agencies dwelled deep on the research activities undertaken by the respective agencies in Ocean exploration and renewable energy.

The marine experts, during the Ocean Summit and Round Table Discussions, pointed out that India's fish wealth was declining alarmingly due to extensive juvenile fishing and unregulated trawling in the Indian Ocean Region.

Scientists, oceanographers and marine experts at the World Ocean Science Congress (WOSC) urged the Union Government to form a separate ministry to bring all agencies and institutions working in the field of ocean and fisheries research under one roof for the smooth implementation and management of all government policies related to the two sectors.

The four-day Congress, which witnessed presentation of 450 technical papers in 13 sessions by 86 Indian institutions and 14 foreign institutions, evolved a set of recommendations.

Inaugurating the valedictory function of the WOSC 2015, Prof. K. V. Thomas MP said that the government should involve the fishing community while formulating policies that affect their livelihood. "There is a clear distinction between fishing techniques in India, which are mostly traditional, and fishing practices elsewhere, especially in European countries, which are largely led by commercial interests," he added.

He said that the sea belongs to the traditional fishing community and that the government should take the initiative to make available the latest technology in the sector to the fisher folk, who are facing challenges like low income and poor living standards.

## **2. International Workshop on Fisheries Management**

International Workshop on Fisheries Management for the member countries of Indian Ocean Rim Association (IORA) was held from 9th to 21st in December 2013. The Workshop recommended a separate Fishery Ministry for all the countries to tap the full potential of a high prospective industry. This demand was raised in the panel discussion of the workshop jointly organized by the Ministry of External Affairs and Kerala University of Fisheries and Ocean Studies (KUFOS). The panel proposed the recommendation after reviewing the suggestions and presentations made by scientists, researchers, subject

experts, fishery practitioners and activists and also analyzing the reports presented by the members of IORA countries. Fisheries is an important engine of economic growth in almost all Indian Ocean rim countries. Its contribution in the national GDP is around 1.5 to 2 % whereas in agricultural GDP it varies from 5-7 %. Though some of the Indian Ocean Rim countries have separate ministry for fisheries, the sector will not have sustainable development in countries like India where there is no separate ministry for fisheries. The establishment of the ministry will be beneficial to utilize the prospects associated with this sector for the development of national economy, the panel observed.

Minister for Fisheries K Babu inaugurated the 12-day workshop on 9th December at Bolgatty Palace Hotel, Kochi. He stressed on the need for sound fisheries management in the existing fisheries scenario to arrest the continued deterioration of coastal fishery resources.

Delivering the presidential address, Dr. B. Madhusoodana Kurup, Vice-Chancellor, KUFOB, said a sound data base on exploited fisheries resources is essential for a sustainable and responsible fisheries management.

Representatives from Indian Ocean countries such as Tanzania, Yemen, Madagascar, Sri Lanka, Mozambique and India participated in the workshop.

#### **‘Separate ministry will help boost fisheries sector’**

Speaking at the plenary session of the workshop on 21st December, Union Minister for Food and Consumer Affairs K V Thomas said that formation of an independent ministry for fisheries at the Centre will help boost the sector in the country. The initiative will help exploit the potential of a highly prospective industry which employs more than 20 million families in the Indian Ocean region, he said. He assured that India will look into the suggestions and proposals made at the workshop to improve the living standards of fishermen by developing the sector.

### **3. International Seminar on Ornamental Fish Breeding, Farming and Trade**

International Seminar on Ornamental Fish Breeding, Farming and Trade was held in Kochi from January 25th to 28th 2014, as part of the 7th India International Aqua Show 2014. The seminar reviewed various issues and opportunities in the ornamental fish industry and to take stock of the recent technological innovations in aquarium keeping, appraisal on the global market trends, marketing issues and challenges, policies and legislation. National and International ornamental fish experts delivered lectures in the five sessions namely Country Status Reports and Global Marketing Trends, Breeding and Rearing, Fish Health Management and Biotechnological Applications, Wild Stock Resource Analysis and Green Certification, Trade, Policies and Regulations. Experts from Netherlands, Norway, Singapore, Malaysia, Sri Lanka, Indonesia, and Australia and India led the sessions.



#### 4. India-EU Concluding Workshop on Marine Ecosystem

An Indo-EU joint workshop was organised by Kerala University of Fisheries and Ocean Studies (KUFOS) and the Nansen Environmental Research Centre-India (NERCI) under the auspices of the EU-INDO-MARECLIM project of European Union, on July 30 and 31 2015 in Kochi.

Prof. B. Madhusoodana Kurup, Vice-Chancellor of KUFOS Inaugurated the two day workshop. He said that climate change was taking a toll on fishery resources with the consequent ocean warming and the rise of sea level rise posing multiple threats to marine ecosystem.

“The climate change has direct impact on ocean resources. The consequent rise of sea surface temperature and habitat destruction are causing the disappearance of commercially important fish species”, he said.

Strategic approach was necessary to substantially reduce additional carbon footprints in order to tackle the greenhouse gases, Prof Kurup said. “Scientific community has to take steps to develop adequate technologies to reduce carbon footprints and international collaboration is necessary to undertake advanced research to tackle the issues being faced by the marine ecosystem”, he said.

“There are scientific challenges for ecologists, economists, and other social scientists, in understanding how human actions affect ecosystems, the provision of ecosystem services, and the value of those services. An effective strategy should be designed to manage, monitor and provide incentives that reflect the social values of ecosystem services”, the Vice Chancellor said.

Prof. NR Menon, Coordinator of INDO-MARECLIM project and Co-Chairman

of NERCI presided over the function. He said that the objective of the Indo-EU workshop was to establish scientific cooperation of the country and the European Union member states in the areas of monsoon studies, protection of marine ecosystem and the coastal zone management. "The meet is aimed at initiating a tie-up with the Europe to undertake serious research in the areas", he added.

Eminent oceanographers, naval exponents, maritime industrialists and environmentalists attended the workshop that dealt with the issues such as climate change, sea level variations, coastal zone management etc.

The INDO-MARECLIM project envisages developing an institutional network in India to embark on joint research ventures from a case to case basis. The project aims at facilitating and improving the co-operation between the European Union Members States and associated countries and India. The workshop will conclude today.

### **Workshop Proposes Joint Research Initiatives to Protect Marine Ecosystem**

The Indo-EU joint workshop on Marine Ecosystem proposed to undertake advanced research initiatives in various issues being faced by oceanic sector, in collaboration with the related research institutions in the country. The proposed areas identified for the research activities include Indian Ocean warming and its impact on Monsoon; understanding of regional sea level variations; coastal zone management; and influence of monsoons and climate on the biology of the Indian Ocean etc.

The workshop also proposed to conduct training and exchange programmes to improve expertise in the areas of remote sensing, ocean modelling, and taxonomy etc. Establishment of a data base of indigenous traditional knowledge (ITK) possessed by the local fisher communities also recommended at the plenary session of the workshop.

The experts and oceanographers who participated in the workshop demanded to strengthen the research initiatives extending the works into more areas under the Indo-EU MARICLIM project, under which the two-day workshop was organised. . Vemband Lake, including its stocks, nature and particularities was needed to explore the possibilities of establishing ship routs and other useful services, said Prof. TJ Pandian at the panel discussion.

Prof. N R Menon, Coordinator of INDO-MARECLIM project said all the research works and studies done by various organisations including KUFOS and NERCI under the project would be digitised and circulated among the general public.

The students who attended at the workshop demanded for the capacity enhancement of technologies with providing practical training. They also opined that they should be provided opportunities helping them to incorporate with various research works.

## Programmes of Prof. Dr. B. Madhusoodana Kurup, Vice- Chancellor

### 2011

Took charge as the first Vice Chancellor of Kerala University of Fisheries & Ocean Studies (KUFOS) on 01<sup>st</sup> March 2011.

Nominated as a member of Governing Council – The Kerala State Higher Education Council

Serving as a member of the Editorial Board of “The Indian Journal of Animal science” nominated by Director General, ICAR

Attended 3<sup>rd</sup> meeting of working group on the Development of Fisheries & Agriculture on 18<sup>th</sup> August 2011 at Chennai.

### 2012

Attended the meeting of State Level Malsya Samridhi Guidance Council, as a member on 24<sup>th</sup> May 2012.

### 2013

Served as Ph.D. dissertation examiner for evaluating the Ph.D. dissertation entitled “stimulating pond production through enhancement linkage of the biotic food webs in the prawn farming system” of Bangladesh Agricultural University on February 2013.

Served as chairman for the evaluation of Ph.D thesis entitled “ Response of benthic community structure to the habitat heterogeneity in the Indian Ocean “ of Goa University on May 2013.

Served as a Chairman of the committee for the Evaluation of Ph.D thesis entitled “molecular taxonomy of fresh waters fishes from Godavari riverine system using mitochondrial DNA cytochrome -1 Oxidase gene” of Babasahib Ambedkar Marattawada University, Aurangabad – June 2013.

Instrumental in the preparation of report on the “Impact of the proposed desalination plant project in Ezhikkara, North Paravur, Ernakulam District, Kerala on Aquatic Ecosystem, Fisheries & Aquaculture (27/09/2013)-Commissioned by M/s. Clarity Aqua Systems Ltd. (CASL) at Ezhikkara Gramma Panchayat.

### 2014

Chaired a session in International Symposium MECOS -2 Marine Ecosystem, held at Kochi on 04<sup>th</sup> December 2014.

Nominated as Member in KAVIL

Participated Vice Chancellors convention on making world class Agricultural University in India, on 8-9<sup>th</sup> November 2014 at New Delhi.

Organized 'Aqua Show 2014' during 6 to 10 February 2014 at Kochi.

Served as Governing Body member of Kerala Institute of Hydrography & Advanced Studies Society, from 30<sup>th</sup> February 2014 onwards.

## 2015

Chairman of the Organizing committee for the conduct of World Ocean Science Congress (WOSC) held at Bolgatty Palace, Kochi during February 2015.

Served as a member of National Level Technical committee in the International Symposium on succulents & other ornamentals organized by Kerala Agricultural University on 04<sup>th</sup> August 2015.

Received Dr. Abdul Kalam Gold Medal for outstanding contribution to the field of fisheries

Organized two day training programme in Aquaculture and Exhibition on "*Litopenus vannamei* culture in Kerala" during 20 – 21 August, 2015.

Attended the high level meeting to discuss the R & D needs of the state on 17<sup>th</sup> May 2015.

Participated 3<sup>rd</sup> International Conference on Global Warming : Food Security at Ras Al Khaimah, UAE , from 4<sup>th</sup> to 8<sup>th</sup> May 2015.

21. Attended International Education Meet Abudabi – from 08-13 March 2015.

Chaired a technical session in Aqua Aquaria India 2015 at Vijayawada organized by MPEDA during 20-22 February, 2015.

Participated in 3 Day Intensive Training Workshop on NEGP-Agriculture & Allied Sectors at Port Blair, Andaman & Nicobar Administration from 24-26 March, 2015.

Presented a paper on the topic "Innovations of ICT in Training in Fishing Techniques, fishing Inputs, Fixation of Market Prices, Boat Tracking System & Ocean Weather Forecasting systems etc." , in the workshop on NEGP-Agriculture & Allied Sectors, at Port Blair on 26<sup>th</sup> March 2015.

## Programmes of Prof. (Dr.) C. Mohanakumaran Nair, Pro Vice-Chancellor

### 2014

Visited Universidad Juárez Autónoma de Tabasco (UJAT), Mexico - from 13 August to 2 September 2013 and 17 - 25 May 2014 - (Appointed as Visiting Professor in June 2013).

Ph.D Examiner to Calcutta University - 8, February 2014

Ph. D Examiner to Andhra University - 12 April 2014

Visited Bangladesh (07- 15 May 2014) as Consultant to World Fish.

Visited Central Institute of Fisheries Education (CIFE), Deemed University, I.C.A.R, Mumbai, India (2-8 October as Visiting Professor) - Appointed as Visiting Professor in June 2014.

Visited Kentucky State University, Kentucky, USA (26- 28 May 2014) - Invited for a discussion on Academic upgradation on Aquaculture.

Visited Calcutta Chamber of Commerce as Invited Speaker on the Role of Aquaculture on Indian Economy – (September 2014).

Visited National Taiwan Ocean University (NTOU), Taiwan to attend the workshop on Sustainable Aquaculture as Invited Speaker – (2 - 8 November 2014)

## Programmes of Prof. (Dr. ) . Padmakumar, Pro Vice-Chancellor

### 2015

Attended the BBSRC-DBT-DFID-ESRC Sandpit meeting on “Global Research Partnership in Aquaculture: Developing aquaculture for food security, development and poverty reduction in developing countries” held at Thiruvananthapuram during 23-26 February 2015.

Attended the 69<sup>th</sup> meeting of the KCZMA is scheduled to be held during 23 -24 April, 2015 at Sasthra Bhavan, Thiruvananthapuram.

Attended the 70<sup>th</sup> meeting of the KCZMA is scheduled to be held during 27 May, 2015 at the Govt. Guest House Ernakulam.

Conducted Evaluation and Viva Voce Examination for M.Sc. Students at the Dept. of Environmental Sciences, Central University of Kerala, Kasaragod on 29 May 2015.

The 71<sup>st</sup> meeting of the KCZMA is scheduled to be held on 16 July, 2015 at Sasthra Bhavan, Pattom, Thiruvananthapuram.

Delivered a Lead Lecture on '*Microalgal Bloom and Seafood Poisoning*' at the "*National Symposium on Algae for Human Welfare*" organized jointly by Pithapur Rajah's Govt. College (Autonomous), Kakinada, Andhra Pradesh and Seaweed Research and Utilization during 19<sup>th</sup> to 21<sup>st</sup> August, 2015.

Participated in the meeting of the Board of Studies in Zoology held on 4.9.2015 at Calicut University.

Invited to visit Marine Drugs Research Centre, College of Pharmacy, Jinan University, Guangzhou, P.R. China for delivering lectures, conducting collaborative research and planning joint institutional collaboration during 11-24 September 2015.

Attended the 72<sup>nd</sup> meeting of the KCZMA is scheduled to be held on 29<sup>th</sup> September, 2015 at Sasthra Bhavan, Pattom, Thiruvananthapuram.

Attended the meeting of the committee for selecting Post – Doctoral Fellows of Kerala State Council for Science, Technology and Environment, Trivandrum on 12<sup>th</sup> November 2015.

Deliver a talk entitled *Chemical Defense of Marine Organisms and Bioprospecting* During the 36<sup>th</sup> Annual Conference of IABMS with the theme "Translational Sciences: Bridging Ancient and Modern Biomedicine" held at Pondicherry University during 17-20 December 2015.

Awarded the title "FABMS" (Fellow of Association of Biomedical Scientists) by the Indian Association of Biomedical Scientists, Pondicherry on 19 December 2015

Attended the 73<sup>rd</sup> meeting of the KCZMA scheduled to be held at Sasthra Bhavan, Pattom, Thiruvananthapuram on 21 Dec. 2015.

Member of the committee to evaluate the Autonomus Status of K.S.R. College of Arts and Science, Periyar University, Salem on 24 Dec. 2015.