

# International directory of fish technology institutes

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Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations



INTERNATIONAL DIRECTORY OF FISH TECHNOLOGY INSTITUTES

Prepared by the

Fish Utilization and Marketing Service  
Fishery Industries Division  
Fisheries Department

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
Rome, 2000

## **PREPARATION OF THIS DIRECTORY**

The fourth edition of this Directory is being brought out almost 25 years after it was first published. During this period there have been many changes in institutional structures throughout the world, with many technological institutes in the developing world being closed or consolidated. However, it can be seen from the 121 entries that there is a viable mass of infrastructure and experienced staff to form a solid base for the development of fish technology. While every attempt has been made to have the widest possible coverage there are inevitably some omissions and errors. The Fish Utilization and Marketing Service of the FAO Fisheries Department will be very pleased to receive any new entries or updates for future editions.

Of course the major development in the period since the Directory was first issued has been the rapid growth of the Internet and the benefits this has provided in terms of access and exchange of information. As a contribution to this process the directory is being put up on the FAO Fisheries web page where it can be accessed at: [www.onefish.org](http://www.onefish.org).

FAO Fish Utilization and Marketing Service, Fishery Industries Division.  
International directory of fish technology institutes.  
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#### ABSTRACT

The International Directory of Fish Technology Institutes lists 121 institutes in 57 countries. All institutes have continuing programmes of research or development on the technology of fish as food, and some are more involved with training at secondary or tertiary levels. Basic information on each one-page entry on each institution includes the director, address, fields of interest, working facilities, staff and their programmes as well as training activities and serial publications.

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## ARGENTINA

### Centro Regional Sur (Fish and Food Technology Research Center) - CEMSUR CITEP

Address: Marcelo T. de Alvear 1168, 7600 Mar del Plata ARGENTINA  
Tel.: (54) 223 4 80 2801  
Fax: (54) 223 4 89 1324  
E-mail: citep@mdp.edu.ar

Head of Organization; Eng. Ricardo Luis Boeri, Director  
Type of Organization: Research Institute  
Responsible Authority: Instituto Nacional de Tecnología Industrial, INTI (National Institute of Industrial Technology)

Number of Staff: Scientist and technician: 26, Administrative: 4  
Working Languages: Spanish; English

#### Major Fields of Interest:

Handling: Onshore handling of fish and shellfish  
Processing: Fresh fish processing, shelf life. Frozen fish processing. Canning. Salting. Drying and Preserving by combined methods. Hydrolization of fish processing residues.  
Species: Hake, Anchovy, Squid, Croaker, Mussels, Scallops  
Development: Traditional and new processes and products, Packing, Equipment  
Quality: GMP, SSOPs, HACCP, TQ  
Others: Project development and evaluation, Economic Engineering. Biochemistry; Nutrition; Statistics; Training; Extension.

Present Programmes: Fresh and Frozen Products, Preserved and cured products, Canned products, Equipment and Machinery, Biochemistry, Economic Engineering

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Sensory Evaluation.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Machine Shop.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Quality Assurance for Food Processing	Yearly	40 Hours	Spanish

#### Others:

Title	Frequency	Duration	Language
Economic Engineering Applied to Fish Industry		1 month *	
Technology: Freezing, Canning, Smoking, Fish Silage, Salting		1 month *	

\* Spanish/English/Portuguese

## AUSTRALIA

### Center for Food Technology

Address: 19 Hercules St., Hamilton, Brisbane 4007  
Tel.: (61)-7-3406.8579  
Fax: (61)-7-3406.8698  
E-mail: goodrickb@dpi.qld.gov.au

Head of Organization Seafood Group Leader, Bruce Goodrick  
Type of Organization Research Institute; Government Dept.  
Responsible Authority Department of Primary Industries, Queensland

Number of Staff: Scientists: 8 Others: 5  
Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Live Fish Transport/Holding/Storage.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Freezing; Transport of Live Fish and Crustaceans; Chilling; Fish proteins; Fish Silage; Marinades.  
Species: FinFish; Reef Fish; Elasmobranchs (Sharks); Crustaceans; Holothurians (Beche-de-mer); Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Fish Waste Utilization; Shelf Life.  
Quality: Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Training; Extension; Fishing Technology; Fish Culture; Technical Information Service Technical-Information for Industry.

Present Programmes: Post-catch Texture Changes.  
Holding and Transportation of Live Fish and Crustaceans.  
Processing, Packaging of Shrimp.  
Spoilage Flora.  
Chilling and Handling of Shark.  
Harvest Stress on Aquaculture Products.  
Effects of Feed and Culture practices on Aquacultured Products.  
Fee-for Service Technical Consultancies for Industry.

#### Working Facilities

Laboratories: Chemistry; Processing; Biochemistry; Microbiology; Quality Control; Smoker.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Fish Holding Tanks.

#### Training Programmes:

Title	Duration	Language
Quality & Handling Procedures	2-5 days	English

## BANGLADESH

### Institute of Food Science and Technology (IFST)

Address: Bangladesh Council of Scientific and Industrial Research (BCSIR), Kudrat-E-Khuda Road, Dhanmondi, Dhaka 1205.

Tel.: (880)-2-502.700

Fax: (880)-2-863.022

E-mail: bcsir@bangla.net

Head of Organization Director, Dr M. Sattar Ali

Type of Organization Research Institute

Responsible Authority Bangladesh Council of Scientific and Industrial Research. Ministry of Science and Technology, People's Republic of Bangladesh,

Number of Staff: Scientists: 8 Others: 6

Working Languages: English; Bengali

#### Major Fields of Interest:

Handling: Onshore; Storage.

Processing: Drying; Canning; Salting; Freezing; Minced Products; Smoking; Fish Meal; Chilling.

Development: Traditional and New Food Products; Traditional and New Processes; Traditional and New Packaging; Fish Waste Utilization; Shelf Life.

Quality: Fish Quality Control/Assurance; Fish Inspection; Sensory and Microbiology.

Others: Biochemistry; Nutrition; Statistics; Chemistry; Zoology; Microbiology; Processing; Fisheries Education and Training.

Present Programmes: Post-harvest Handling; Icing; Freezing; Canning; Salting; Smoke Curing; Estimation of Nutrients; Quality Control of Fish and Fisheries Products; Fish Physiology; Bio-medical Studies on Fish Oil; Fish Curing; Drying; Fish Meal; Fish Waste Utilization; Packaging.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control; Storage and Preservation.

Others: Pilot Plant; Ice Making Plant; Cold Storage; Taste Panel Room; Library.

#### Training Programmes:

Title	Duration	Language
Quality Control of Fish and Fishery Products	as required	English/Bengali
Processing, Preservation and Physiology of Fish	1 year	English
Biomedical Properties of Fish Oil	1 year	English

Serial Publications: BCSIR Annual/Biennial Reports.

## **BELGIUM**

### **Departement Zeevisserij (CLO-Gent)**

Address: Ankerstraat 1, Oostende 8400  
Tel.: (32)-59-320.805  
Fax: (32)-59-330.629

Head of Organization Department Head  
Type of Organization Research Institute  
Responsible Authority Ministry of Agriculture

Number of Staff: Scientists: 3 Others: 5  
Working Languages: Dutch; English; French

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Smoking; Freezing; Minced Products.  
Species: Crustaceans; Molluscs.  
Development: New Fish Products; Traditional Processes; New Packaging; Traditional Equipment.  
Quality: Fish Quality Control/Assurance.  
Others: Biochemistry.

Present Programmes: Quality Assessment Methods.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology.  
Others: Cold Storage; Test Kitchen; Taste Panel Room; Library; Research Vessel.

Serial Publications: Mededelingen van het Departement Zeevisserij (C.L.O. Gent)

## **BRAZIL**

### **Instituto Nacional De Pesquisas Da Amazônia**

Address: Alameda Cosme Ferreira 1756 - CX Postal 478, Manaus CEP: 69.083-000  
Tel.: (55)-642-3300 Ext. 339  
Fax: (55)-642-3430/642-1706

Head of Organization Dr Ozório José de Menezes Fonseca  
Type of Organization Research Institute

Working Languages: Portuguese

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting; Fermentation; Smoking; Canning; Minced Products; Fish Meal; Fish Leather.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional Packaging.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Fishery Biology; Fishing Technology; Fish Culture; River Pollution.

Present Programmes: Utilization of Low Commercial Value Fish Species from the Rivers.  
Use of Skin and Fish Residues to Produce Leather.  
Biological Silage.  
Minced Fish and Surimi Research.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control.  
Others: Pilot Plant; Ice Making Plant; Taste Panel Room; Library; Research Vessel; Machine Shop; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Specialization	annual	5 months	Portuguese
Master Degree	bi-annual	2.5 years	Portuguese
PhD Programme	annual	4 years	Portuguese

## BRAZIL

### Programa de Pesquisas em Processamento de Produtos do Mar - PROMAR

#### (Seafood Processing Research Programme)

Address: Fundação Universidade Federal do Rio Grande (FURG), Departamento de Química;  
R. Alfredo Huch, 475, Cx. P. 474, 96.201-900 Rio Grande RS  
Tel.: (55) 532-311900  
Fax: (55) 532-329716  
E-mail: dqmprent@super.furg.br; upromar@nupeq.furg.br

Head of Organization: Dr. Carlos Prentice, Manager  
Type of Organization: Univ. Dept., Higher Education  
Responsible Authority: FURG (Federal University of Rio Grande Foundation)

Number of Staff: Scientists: 12 Others: 12  
Working Languages: Portuguese, Spanish, English, French

#### Major Fields of Interest:

Handling: Onshore, storage, fresh fish  
Processing: Drying, salting/drying, smoking, fermentation, canning, freezing, mincing and surimi-based products, fish oil refining, marinades.  
Species: Fishes, crustaceans, algae  
Development: Traditional and new fish products, traditional and new processes, traditional and new packaging, seafood waste utilization.  
Quality: Fish inspection, total quality and assurance, HACCP programme  
Others: Biotechnology, training and technology transference, nutrition, aquaculture

Present Programmes Development of value-added products from fish and fish waste; Development of value-added products from shrimp and shrimp waste; Minced fish technology, fish paste products and fermented sauces; Minimally processed products; Fish oil chemistry and technology; New products for institutional use

#### Working Facilities:

Laboratories: Technological Biochemistry, Food Chemistry, Chemical Instrumental Analyses, Food Biochemistry, Bioengineering, Microbiology, Quality Control and Sensory Evaluation  
Others: Nucleus of Chemical and Food Engineering (NUCLEAL)

#### Training Programmes:

Title	Frequency	Duration	Language
Master in Food Engineering	Yearly	2-2.5 years	Portuguese
Fish Processing (post graduate)	Yearly	4 months	Portuguese
Food Quality Control (post graduate)	Yearly	4 months	Portuguese

Others:

Courses of fish technology  
Technical assistance for fishers

5-7 days Portuguese  
1-2 days Portuguese



**BRAZIL**

**Instituto Adolfo Lutz**

Address: Avenida Dr. Arnaldo 355, São Paulo/SP 01246-902  
Tel.: (55)-011-3061-0111/1(55)-011-852-5363  
Fax: (55)-011-853-3505  
E-mail: ozenebon@ial.sp.gov.br

Head of Organization Director, Dr. Cristiano Correa de Azevedo Marques  
Type of Organization Research Institute/Public Health Laboratory  
Working Languages: Portuguese

Major Fields of Interest:

Quality: Quality Control; Fish Quality Control/Assurance;  
Others: Training; Applied Research

Working Facilities:

Laboratories: Chemistry; Microbiology; Microscopy; Sensory Analysis; Packaging  
Others: Library

Training Programmes:

Title	Duration:	Language:
Pesticides and Heavy metals (mercury) analysis	30 days	Portuguese

**BRAZIL**

**Faculdade de Ciências Agronômicas da Universidade Estadual Paulista - UNESP**

**Botucatu - São Paulo**

Address: Laboratório de Tecnología de Produtos Agropecuários -Fazenda Experimental  
Lageado

- CP 237 - Botucatu SP

Tel.: (55)-14-8213883

Fax: (55)-14- 821-3843

E-mail: Issantana@laser.com.br

Head of Organization Dra. Léa Silvia Sant'Ana

Type of Organization University/Research Center

Responsible Authority Dr. José Elias Simon/ Dra. Elisabeth Urbinati

Number of Staff: 1 Scientist

Working Languages: Portuguese

Major Fields of Interest:

Handling: Freshwater aquaculture

Processing: salting/freezing/smoking/antioxidant treatment/irradiation

Species: Freshwater species

Development: Antioxidant in diets/Smoking/Irradiation

Quality: Lipid oxidation

Present Programmes: Fish smoking pate; Fatty acid composition; Tocopherol and phenolic acids in diet.

Working Facilities

Laboratories: Chemistry/ processing/ fish culture ponds.

Training Programmes:

Title	Duration	Language
Fish processing	2 days	Portuguese
Food technology (Graduate)	4 months	Portuguese

## BRUNEI DARUSSALAM

### Department of Fisheries

Address: 3rd Floor, Ministry of Industry and Primary Resources Building,  
Jalan Menteri Besar, BB3910, Brunei Darussalam

Tel.: (673)-2-383412

Fax: (673)-2-382069

E-Mail: IKANBL1@BRUNET.BN

Head of Organization: Director, Mr. Pg Haji Sharifuddin

Type of Organization: Government Department

Responsible Authority: Ministry of Industry and Primary Resources

Working Languages: Malay, English

#### Major Fields of Interest:

Handling: Onboard; onshore; Live Fish Transport/holding.

Processing: Drying; Salting/Drying; Fermentation; Chilling; Freezing; Minced Products; Fish Meal; Marinades; Value-added Products.

Species: Fish, Crustaceans; Molluscs; Cephalopods.

Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; New Equipment.

Quality: Fish Quality Control/Assurance; Quality Management Programme.

Others: Statistics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Fishery Biology; Fishing Biology; Fishing Technology; Fish Culture; Marine Pollution; Packaging Technology; Marine Ecosystem.

Present Programmes: Stock Assessment; Development of Aquaculture Technology; Fishing Technology; Processing and Packaging Technology with Emphasis on Technological Transfer to Private Sector.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Quality Control; Red Tide; Fish Pathology; Algal Culture.

Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Library; Research Vessel; Fish Culture Ponds; Fish Cages; Grow-out-Ponds.

#### Training Programmes:

Title	Duration	Language
Fish Processing Technology	as required	Malay/English
Fishing Technology	as required	Malay/English
Aquaculture	as required	Malay/English

## CAMEROON

### Fisheries and Oceanography Research Station

Address: PMB 77, Limbe

Head of Organization Dr Téodore Djama

Type of Organization Research Organization; Government Department

Responsible Authority Minister of Scientific and Technical Research

Working Languages: English; French

#### Major Fields of Interest:

Handling: Onboard; Onshore; Packaging; Storage.

Processing: Drying; Salting/Drying; Smoking; Freezing; Minced Products; Fish Meal.

Species: Crustaceans; Molluscs; Algae; Fish

Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment; Storage

Quality: Quality Control; Fish Quality Control/Assurance.

Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Management Information; Fishing Technology; Fish Culture; Marine Pollution; Aquatic biodiversity and Environmental conservation.

Present Programmes: Fish Processing;  
Storage/Packaging;  
Quality Control;  
Product Development;  
Fisheries Management;  
Fisheries Biology.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Microbiology.

Others: Library; Fish Culture Ponds; Fish Smoking/Drying Facilities.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Training Course on Fish Processing	every 3 years	8 weeks	English/French
Fish Stock Assessment	At request	1 month	English/French

## CANADA

### Canadian Institute of Fisheries Technology

Address: DalTech, Dalhousie University , 1360 Barrington St., Halifax NS, B3J 2X4  
Tel.: (1)-902-494.6030  
Fax: (1)-902-420.0219  
E-mail: gillta@tuns.ca  
Mail to: P.O. Box 1000, Halifax, Nova Scotia B3J 2X4

Head of Organization Director, Dr Thomas A Gill  
Type of Organization Research Institute  
Responsible Authority Dalhousie University, Faculty of Engineering

Number of Staff: Scientists: 10 Others: 10  
Working Languages: English, some French and Danish

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Aquaculture Technology.  
Processing: Drying; Salting/Drying; Smoking; Canning; Freezing; Minced Products; Fish Meal; Fish Oil; Fish Protein; Fish Silage; Marinades; Surimi, product and process development.  
Species: Crustaceans; Molluscs; Cephalopods; Teleosteans; Elasmobranchs.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Snack Foods; Shelf-life; Fish Waste Utilization.  
Quality: Seafood safety, HACCP, Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Consultation; Training; Extension; Fishery Biology; Fish Culture; Marine Pollution.

Present Programmes: Seafood Preservation and Processing. Marine Lipids. Seafood Quality. Sensory Evaluation and Product/Process Development, Training courses offered for the industry in seafood quality and preservation, thermal processing, handling of wet and frozen seafood of various types.

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Sensory evaluation, Biochemistry; Microbiology; Quality Control, Rheology and texture, Product Development.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Machine Shop.

#### Regular Training Programmes:

Title	Frequency	Duration	Language	
Applied Fish Technology		annual	5 days	English
Thermal Processing	annual	8 days	English	
Masters and PhD*			English	
HACCP	annual	5 days	English	
Fish Quality and Preservation for Fish Inspectors	biennial	2 weeks	English	

#### Others:

Title	Duration	Language
Surimi Production and Products	2 days	English

\* Programmes in Food Science and Fisheries Engineering in Association with Department of Food Science and Technology, Technical University of Nova Scotia

## CANADA

### Centre Spécialisé des Pêches

Address: 167 La Grande Allée Est, Grande rivière, Québec GOC IVO  
Tel.: (1)-418-385.2241  
Fax: (1)-418-385.2888  
Mail to: B.P. 220 Grande Rivière, Québec

Head of Organization Director, Mr Richard Loiséle  
Type of Organization Research Institute; Fisheries College  
Responsible Authority College de la Gaspésie et des Iles

Number of Staff: Scientists: 30 Others: 10  
Working Languages: French; English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration.  
Processing: Drying; Salting/Drying; Smoking; Canning; Freezing; Minced Products; Fish Meal.  
Species: Crustaceans; Molluscs; Cephalopods; Algae.  
Development: New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution; Aquaculture Technology.

Present Programmes: Water Quality Analysis; Marketing of Fish Products.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control; Aquaculture for Training and Research.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Machine Shop.

#### Regular Training Programmes:

Tit	Frequency	Duration	Language
Fish Processing (University level)	3 years	French*	
Fish Processing (High-school level)	900 hours	French	
Fish Marketing	900 hours	French*	
Aquaculture Technology (College Level)	3 years	French	
Others:			
Title	Duration	Language	
Quality Control of Fish Products	435 hours	French	
Supervision of Fish Processing	615 hours	French	
Fish Store Manager	720 hours	French	
Fish Dishes Production Centre	840 hours	French*	

\* French with some courses in English

## CANADA

### The Fisheries and Marine Institute of Memorial University of Newfoundland

Address: 155 Ridge Road, Box 4920, St. John's, Newfoundland A1C 5R3  
Tel.: (1)-709-778-0200  
Fax: (1)-709-778-0346;  
E-mail: David.Bonnell@imi.mun.ca; Telex: 016-4721

Head of Organization Executive Director, Mr. Leslie O'Reilly  
Type of Organization Research Institute; Univ. Dept./Higher Educ.  
Responsible Authority Memorial University of Newfoundland

Number of Staff: Scientists: 130 Others: 75  
Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Shelf life of Fresh/Frozen Products for Retail; Chilling Principles  
Processing: Drying; Canning; Salting/Drying; Freezing; Fermentation; Minced Products; Smoking; Fish Meal.  
Species: Groundfish; Pelagics; Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and New Packaging (Modified Atmospheric Packaging, MAP); Traditional and New Processes; Traditional and New Equipment; By-product Utilization; Sanitation.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance; Total Quality Management (TQM) ISO 9000; Industrial Sanitation; Statistical Process Control; Microbiological/Chemical Indicators; HACCP.  
Others: Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution; Studies, Maritime Fishing Masters; Safety at Sea; Fisheries Management; Fishing Methods; Repairs and Maintenance; Maintenance/Production Supervision; Fisheries Extension Methodology; Coastal Zone Management; Harvesting Technology; Conservation; Selectivity; Seabed-Friendly Gear Technology; Hydrodynamics.

#### Working Facilities

Laboratories: Chemistry; Biology; Processing; Engineering; Microbiology; Quality Control;  
Aquaculture.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Research Vessel; Machine Shop; Fish Culture Ponds; Ship Simulator; Flume Tank

Training Programmes:	Title	Duration	Language
	Advanced Diploma – Fisheries Development	9 months	English
	M.Sc. Advanced Diploma Aquaculture	12 months	English
	Advanced Diploma in Coastal Zone Management	12 months	English
	Advanced Diploma in Food Safety	12 months	English
	Advanced Diploma in Food Technology	12 months	English
	Diploma – Seafood Processing	10 months	English
	Diploma – Food Production Quality	10 months	English
	Technical Certificate Quality Assurance	10 months	English

Others:

Seafood Processing; Aquaculture First Line



Supervision; Maintenance (certificate in)	various	English	
Skilled Seafood Processing Worker Program	various	English	
Professional Fish Harvesting Training Courses	various	English	
Management Courses	various	English	
Sanitation and Hygiene		various	English
Responsible Fishing	various	English	

## CHILE

### Food Engineering Department

Address: P.O. Box 4059, Valparaíso  
Tel.: (56) (32) 274211 / 274201  
Fax: (56)-32-274205  
E-mail: acifuent@ucv.cl

Head of Organization Director, Mr Antonio Cifuentes  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Catholic University of Valparaíso

Number of Staff: Scientists: 10 Others: 12  
Working Languages: Spanish; English

#### Major Fields of Interest:

Handling: Onshore.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced  
Products.  
Species: Fish; Crustaceans; Molluscs.  
Development: Traditional and new Fish Products; Traditional and new Processes.  
Quality: Quality Control ; Fish Quality Control (HACCP)  
Others: Biochemistry; Microbiology, Engineering, Extension Programme to the Food  
Industry

Present Programmes: Fish Handling on Shore-Bulk Handling and Storage; Fish Processing-Fish Proteins;  
Fish Silage; Surimi; Development of Fish Products; Development of New Processes-  
Crustacean Waste Utilization; Shelf-life; Fish Quality Control/HACCP Assurance;  
Modified Atmosphere packaging (MAP).

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Biochemistry; Microbiology; Sensory  
Evaluation.  
Others: Cold Storage; Pilot Plant, Library.

## CHILE

### Fundación Chile

Address: Parque Antonio Rabat, Santiago Sur 6165, P.O. Box 6671199, Vitacura  
Tel.: (56)-2-2400300  
Fax: (56)-2-242.6900  
E-mail: Info@fundch.cl  
Website: www.fundch.cl

Head of Organization Director, Eduardo Bitrán Colodro  
Type of Organization Centre for Technology Transfer  
Responsible Authority Autonomous, Private non-profit

Number of Staff: Scientists: 50 Others: 40  
Working Languages: English; Spanish

#### Major Fields of Interest:

Handling: Onshore; Depuration; Internal Market; Retailing.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced  
Products.  
Species: Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and  
New Packaging; Traditional and New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Nutrition; Statistics; Economics; Consultation; Training; Extension; Fish Culture;  
Marine Pollution; Aquaculture; Nutrition, Ichthyopathology; Introduction of Species  
and New Farming Technique.

Present Programmes: Aquaculture; Marine Pollution; Quality Assurance/Control; Product Development;  
Development of Domestic and Export Markets.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Quality Control; Fish Feed Formulation; Trials  
and Production; Fish Nutrition; Ichthyopathology.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room;  
Library; Fish Culture Ponds; Several Pilot Projects in Fish/Shellfish Culture;  
Fish/Shellfish Feed Production.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fish Handling and Processing			Spanish/English
Aquaculture Techniques			
Ichthyopathology			Spanish/English
Quality Control and Assurance			Spanish/English

Spanish/E

Serial Publications: Aquanoticias International (quarterly)

## CHINA

### Dalian Fisheries College

Address: Heishijiao St. 52, Dalian 116023  
Tel.: (86)-411-467.1025  
Fax: (86)-411-467.1639/4660163  
E-mail: [dlfuied@mail.dlptt.ln.cn](mailto:dlfuied@mail.dlptt.ln.cn)

Head of Organization President, Prof. Li Hongming  
Type of Organization University  
Responsible Authority Education Committee of Liaoning Province

Number of Staff: Scientists: 259 Others: 425  
Working Languages: Chinese; English, Japanese

Major Fields of Interest: Aquaculture; Marine Fishing; Sea Food Processing.

Present Programmes: Aquaculture; Marine Fisheries; Machinery; Civil Engineering; Electronics;  
Economics  
and Management.

#### Working Facilities:

Laboratories: Physics, Chemistry, Biology, Computer, Navigation, Machinery, Fishing Gear, Food Processing, Comprehensive Laboratory for Civil Engineering, Electronics and Electro-technology; Key Comprehensive Laboratory for Aquaculture, Comprehensive Laboratory for Business Operation.

Others: Library; On-Site Bases for Practice.

Serial Publications: Journal of Dalian Fisheries University

**CHINA**

**Fisheries College of Jimei University**

Address: 43, Yin Dou Road , Jimei , Xiamen 361021, P. R. China  
Tel.: (86)-592-6180204  
Fax: (86)-592-6181476

Head of Organization: Yazhi Zhang  
Type of Organization: University College/Higher Education  
Responsible Authority: Fujian Provincial Government  
Number of Staff: Professors: 10 Associate professors: 49  
Working Language: Chinese

Major fields of interest:

Handling: Onshore.  
Processing : Fermentation;Freezing;Minced Products;Fish Meal; Agar/Alginate/Carrageenin;  
Chitin/Chitosan.  
Species: Molluscs; Algae; Fishes; Crustaceans.  
Development: New Fish Products; New Processes; New Packaging; Aquatic Animal seeds  
Quality: Fish Quality Control/Assurance.  
Others: Fishing Technology; Fish Culture; Seafood Plant Waste Utilization; Nutrition and  
Food of Aquatic Animals; Marine Fisheries Science and Technology.

Working Facilities:

Laboratories: Chemistry; Biology;Ecology; Processing; Biochemistry; Microbiology; Nutrition and  
Feeding; Quality Control.  
Others: Ice Making Plant; Cold Storage; Library; Fisheries Experimental Station; Aquatic  
Animals Zoo; Food Tests; Food Science and Engineering

Regular Training Programmes:

Title	Frequency	Duration	Language	
Seafood Processing Technology			Chinese	
Frozen Food Technology				Chinese
Seafood Plant Waste Utilization			Chinese	
Aquaculture Technology				Chinese

Serial publications: Journal of Jimei University

## CHINA

### Shanghai Processing Technique Development Centre

Address: 486 Gong Qing Road, Fuxing Island, Shanghai 200090  
Tel.: (86)-21-541.3696  
Cable: 3790

Head of Organization Mr Dingchang Wu  
Type of Organization Research Institute; National Authority  
Responsible Authority Shanghai Fisheries Corp.

Number of Staff: Scientists: 19 Others: 21  
Working Languages: Chinese

#### Major Fields of Interest:

Processing: Salting/Drying; Smoking; Canning; Minced Products.  
Development: Traditional and New Fish Products.  
Quality: Quality Control.  
Others: Nutrition; Training; Fishery Biology.

Present Programmes: Utilization of Fish Products.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Quality Control.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library.

#### Training Programmes:

Title	Duration	Language
as required		English/Chinese

## CROATIA

### "Ruder Boskovic" Institute, Center for Marine Research, Zagreb

#### Laboratory for Aquaculture

Address: Bijenicka Cesta 54, Zagreb HR 10000

Tel.: (385)-1-4680943

Fax: (385)-1-4680943

Head of Organization: Head Dr Bozena Cosovic

Type of Organization: Research Institute

Number of Staff: Scientists: 8 Others: 3

Working Languages: Croatian; English

#### Major Fields of Interest:

Handling: Onboard; Onshore.

Species: Molluscs.

Quality: Fish Inspection; Quality Control.

Others: Nutrition; Fishing Technology; Fish Culture.

Present Programmes: Pathology, Genetics and Nutrition in Aquatic Organisms.

#### Working Facilities:

Laboratories: Chemistry; Quality Control; Library; Research Vessel; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Aquaculture	yearly	35 hours	Croatian/English
Fish Diseases	yearly	21 hours	Croatian/English

#### Others:

Title	Duration	Language
Courses for Fish Technologists	10 days	Croatian/English

## CUBA

### Centro de Investigaciones Pesqueras

Address: 5ta Ave y 248 Barlovento, Sta. Fe, Ciudad de La Habana

Head of Organization Dr Adela Prieto Trujillo

Type of Organization Research Institute

Responsible Authority Orlando Rodríguez Romay - Minister of Fishery Industries

Working Languages: Spanish and English;

#### Major Fields of Interest:

Handling: Onshore.

Processing: Drying; Salting/Drying; Fermentation; Smoking; Freezing; Minced Products; Fish

Meal.

Species: Marine and freshwater fishes; Crustaceans; Molluscs.

Development: Traditional and New Fish Products; Traditional and New Processes.

Quality: Quality Control; Fish Quality Control/Assurance.

Others: Biochemistry; Nutrition; Microbiology; Sensory Evaluation; Fish Stock Assessment; Fishery Management; Bioeconomics; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Stock assessment of marine resources; Development and improving of marine and freshwater products; Shrimp culture System optimization and culture of potential species.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control.

Others: Cold Storage; Taste Panel Room; Library; Research Vessel.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Assessment of tropical fish stocks	Daily	1 wk (40 hrs)	Spanish
Bioeconomic precautionary approach for fisheries management	Daily	1 wk (40 hrs)	Spanish
Oceanography and coastal water quality	Daily	1 wk (40 hrs)	Spanish
Applied statistics to Fishery Biology	Daily	1 wk (40 hrs)	Spanish
Operational procedures for ichtioplankton and zooplankton studies	Daily	1 wk (40 hrs)	Spanish
Pollution and environment	Daily	1 wk (40 hrs)	Spanish
Heterotrophic microalgae culture	Daily	1 wk (40 hrs)	Spanish
Penaeid shrimp culture	Daily	1 wk (40 hrs)	Spanish
Feed and nutrition for freshwater species	Daily	1 wk (40 hrs)	Spanish
Health management in tropical cultured shrimps	Daily	1 wk (40 hrs)	Spanish
Fishing products conservation	Daily	1 wk (40 hrs)	Spanish
Technological design of fishing products processing plants	Daily	1 wk (40 hrs)	Spanish
Industrial procedures for shrimp and prawns	Daily	1 wk (40 hrs)	Spanish
Fishing Products Toxicology	Daily	1 wk (40 hrs)	Spanish
Biochemistry and quality control in fishing products	Daily	1 wk (40 hrs)	Spanish

Serial Publications: Revista Cubana de Investigaciones Pesqueras (ISSN 0138-8452)



## CZECH REPUBLIC

### Fisheries High School, Vodnany

Address: Zátisí 480/II, Vodnany 38919  
Tel.: (42)-342-905.404/05  
Fax: (42)-342-905.406

Head of Organization Dipl. Ing. Miroslav Merten  
Responsible Authority Ministry of Education and Physical Training

Number of Staff: Scientists: 15 Others: 20  
Working Languages: Czech

#### Major Fields of Interest:

Processing: Education and Training in Fishery  
Others: Fish Culture; Fishing Technology; Fishing Biology.

Present Programmes: All New Production and Processing Technologies.

#### Working Facilities:

Laboratories: Chemistry; Biology.  
Others: Experimental Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Breeding Fishes in Ponds	as required	5 days	Czech
Breeding of Salmonids	as required	5 days	Czech
Electro-fishing	as required	5 days	Czech
Fishery Management Training	as required	5 days	Czech

## DENMARK

### Danish Institute for Fisheries Research, Dept. of Seafood Research

Address: Technical University, Bldg. 221, Lyngby DK-2800  
Tel.: (45)-45 88 33 22  
Fax: (45)-45 88 47 74  
E-mail: fish@dfu.min.dk

Head of Organization Research Director, Dr Torger Boerresen  
Type of Organization Research Institute; Univ. Dept./Higher Educ.  
Responsible Authority Ministry of Food, Agriculture and Fisheries

Number of Staff: Scientists: 34 Others: 35  
Working Languages: Danish; English

Major Fields of Interest: The department carries out research and development within handling, storage, preservation and other industrial uses of fish. The focus areas are microbiology and hygiene, raw material and product technology, and production and process analysis. The research within the area microbiology and hygiene focus on microbial ecology; occurrence, survival, growth and interaction of micro-organisms in fish products. The properties of fish and shellfish, and their use as well as product composition and product quality, are central topics within the research area raw material and product technology. A wide variety of research is carried out within the areas of lipid, protein and enzyme chemistry to establish basic knowledge for product storage and development. Research within production and process analysis is primarily focused on catch handling, measurement methods and systems for documentation and quality management.

#### Main Research Areas:

Microbiology and Hygiene: Safety of Seafood; Spoilage and Shelf Life; Interactions between Micro-organisms - Biopreservation; Raw material and Product Technology: Composition, Structure and Biochemical and Physical Properties; Optimisation of Product Quality Improvement of Resource Utilization; Production and Process Analysis; Quality Chain Management (QCM); System Analysis and System Engineering; Multivariate Process Monitoring and Advanced Measurement Methods

#### Working Facilities:

Laboratories: Chemistry; Processing; Biochemistry; Microbiology; Sensory Analysis.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Machine Shop.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Quality Assurance in the Fish Industry	yearly	3 weeks	Danish
Product Technology in the Fish Industry	yearly	3 weeks	Danish

## DENMARK

### Danish Institute for Fisheries Technology and Aquaculture (DIFTA)

Address: illemoesvej, The North Sea Centre, DK-9850 Hirtshals  
Tel.: (45)-98-944.300  
Fax: (45)-98-942.226  
E-mail: difta@difta.dk  
Web: www.difta.suite.dk  
Mail to: P.O. Box 59, DK-9850 Hirtshals

Head of Organization: Managing Director, Mr Henrik Rosenberg  
Type of Organization: Research and Development Institute  
Responsible Authority: Danish Ministry of Industry

Number of Staff: Scientists: 23 Others: 14  
Working Languages: Danish; English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration.  
Processing: Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal.  
Species: Fish; Crustaceans.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment.  
Quality: Quality Control; Fish Quality Control/Assurance.  
Others: Nutrition; Economics; Consultation; Training; Extension; Fishing Technology; Fish Culture.

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Microbiology; Quality Control.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Quality Management	yearly	3 weeks	*

#### Others:

Title	Duration	Language
Catch Technology	1 to 4 weeks	*
Fish Processing/Fish Technology	1 to 4 weeks	*
Recirculation Techniques in Aquaculture	1 to 4 weeks*	

\* Danish/Scandinavian/English

## **DENMARK**

### **Danish Institute of Fisheries Economics Research (DIFER)**

Address: University of Southern Denmark, Niels Bohrs Vej 9, Esbjerg DK-6700

Tel.: (45)-79-141.111

Fax: (45)-79-141.199

Head of Organization: Mr Hans Frost

Type of Organization: Research Institute; Univ. Dept./Higher Educ.

Number of Staff: Scientists: 17                      Others: 5

Working Languages: Danish; English

Major fields of interest: Fish Technology Based Economic Analysis

## DENMARK

### Højmarklaboratory Ltd.

Address: Adelvej 11, Lem 6940  
Tel.: (45) -97-343.366  
Fax: (45)-97-343.435  
E-mail: hllab@post1.tele.dk

Head of Organisation: Managing Director, Mrs Greta Jakobsen  
Type of Organisation: Research and Development Institute  
Responsible Authority: Private Independent Laboratory

Number of Staff: Scientist: 6                      Others: 12  
Working Languages: Danish, English

#### Major Fields of Interest:

Handling: Quality Changes  
Processing: White fish and Salmon processing; Fish Proteins  
Species: All main species  
Development: Traditional and New Fish Products; Processes; Biotechnology; Quality Determination Methods  
Quality: Fish Inspection; Fish Quality Control/Assurance; HACCP  
Others: Consultation; Training

Present Programmes: Process Development for Functional & Nutritious Fish Proteins  
Environmental Analysis & Cleaner Technology in Fish Processing  
Utilization of Waste from Fish Processing  
Development of Quality Indicators in Frozen Fish

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control  
Others: Pilot Plant; Drying; Freezing; Ice Making Plant; Cold Storage; Test Kitchen

#### Training Programmes:

Title	Duration	Language
Quality Assurance & Control	1 to 10 days	Danish/English
Laboratory Management		

Serial Publications: Hygiene & Quality Instructions for Staff Working within the Food Industry (Danish)

## ECUADOR

### Instituto Nacional de Pesca

Address: Letamendi y La Ría, Guayaquil 09-04-13151  
Tel.: (593)-4-407.680/401.773/401.776/401.779  
Fax: (593)-4-402.304/405.859/405.808  
E-mail: inp@ecua.net.ec

Head of Organization: Director Ejecutivo, Franklin Ormaza González, Ph.D.  
Type of Organization: Research Institute  
Responsible Authority: Ministry of Foreign Trade, Industrialization, Fisheries and Tourism, Subsecretariat of Fisheries Resources

Number of Staff: Scientists: 74 Others: 55  
Working Languages: Spanish

Major Fields of Interest:

#### **BASIC RESEARCH AND ENVIRONMENTAL EVALUATION DIVISION**

Undertakes research in the areas of oceanography; ecology; limnology; geology; and pollution in the aquatic environment, with special emphasis on areas with interest to fisheries and aquaculture, following policies set by the National Fisheries Development Council and other organizations. There are:

Water Pollution Branch; Resources Evaluation Branch; Fisheries Technology Branch; Fisheries Extension Branch.

#### **BIOLOGY AND FISHERIES RESOURCES EVALUATION DIVISION**

Carries out evaluation of bio-aquatic resources of scientific ecological and economic interest from estuarine, marine and continental waters so as to identify resources and to recommend the application of regulatory measures to permit rational and sustainable exploitation of the resources and assesses the fisheries sector by carrying out research and rendering services.

Fisheries Biology Branch; Resources Evaluation Branch; Fisheries Technology Branch; Fisheries Extension Branch.

#### **DIVISION OF QUALITY CONTROL AND FISHERIES PRODUCTS INSPECTION**

Directs and coordinates activities related to quality control and standardization of methodologies, processes, equipment, laboratories and canning and packaging. It further carries out research in order to improve knowledge of raw material for fishery products as a basis for development of technological processes for full use of the resources and improve their contribution to food for human consumption and industrial use;

Food Chemistry Branch; Food Analysis Branch; Food Microbiology Branch; Research and Product Development Branch.

#### **AQUACULTURE DIVISION**

Identifies pathogenic micro-organisms affecting native fish species, molluscs and crustaceans, by carrying out sanitary control through quarantine of introduced species to determine possible non-traditional infecting agents which might affect fisheries or water-related resources.

Culture Branch; Pathology Branch; Prevention and Quarantine Branch.

#### **RESEARCH SUPPORT UNIT**

The INP possesses three vessels for research on fisheries resources, oceanography and environmental evaluation.

#### **DATA PROCESSING DEPARTMENT**

Develops and implements a fisheries programme with interactive systems, to obtain catch and effort data for the national fleet in support of the Resources Evaluation Branch.

#### **LIBRARY**

The library has a great variety of specialized information in the different fields of marine sciences; it also has an E-mail system connected with ECUANET which allows the interchange of information between scientific institutions and researchers around the world.

**SPECIES:** Large and small pelagics; artisanal or industrial; crustaceans, molluscs, etc.

Working Facilities:

Laboratories: Chemistry; Biology; Data Processing; Biochemistry; Microbiology; Quality Control; sedimentation; oceanography; plancton.

Other: Multipurpose station

Serial publications: Scientific bulletin; Information-Statistics Bulletin; Information Bulletin.

## ECUADOR

### Maritime Engineering

Address: Campus Prosperina, Km 30.5 Perimetral highway,  
Tel.: 269269 - 851094 - 852419  
Fax: (5934) 854629  
E-mail: ecervan@goliat.espol.edu.ec

Head of Organization Eng. Eduardo Cervantes Bernabe..  
Type of organization Univ. Dept. / Higher Educ.  
Responsible Authority: Maritime and Sciences of the Sea Engineering Faculty,  
Escuela Superior Politécnica del Litoral

Number of Staff: Scientists.5. Others: 30  
Working Languages: Spanish

Working Facilities:  
Laboratories: Ichthyology; Biology; Nutrition; Water Quality

#### Training Programmes:

Title	Duration	Language	
Aquaculture	3 years	Spanish	
Aquaculture engineering	5 years	Spanish	Spanish
Master Degree in Aquaculture	2 years	Spanish	



## ECUADOR

### Fish Technology Program

Address: Campus Santa Elena ESPOL, Guayaquil and 9 de Octubre Street  
Santa Elena, Ecuador.

Tel.: 530 – 04 – 940655

Fax: 530 – 04 – 940655

E-mail: Clanga@goliat.espol.edu.ec

Head of Organization: Tcnlg. Luis Zhingri Ortega, Coordinator

Type of organization: Univ. Dept. / Higher Educ

Responsible Authority: Escuela Superior Politécnica del Litoral

Number of Staff: Engineers: 4 Technologists: 30

Working Languages: Spanish; English

#### Major Fields of Interest:

Handling: Onshore

Processing: Fishing Technology, Fishing Administration, Safety at Sea, Fisheries Management, Fishing Methods, Repair and Maintenance, Production Supervision, Fisheries Extension Technology

Species: Pelagics, Molluscs, Cephalopods.

Development Traditional and new Fish Products. Fish Quality Control.

Others: Training for instructors enabling in industrial and craftsmanship fishing

Present Programmes: Fishing enabling trainee for personal on board of the fishing ship - To the industrial and craftsmanship under the rules of OMI (International Shipmen Organization)

#### Working Facilities

Laboratories: Refrigeration System – Oil Hydraulics – Electronic equipment of Fishing and

Navigation

Others: Seaman Ship, Library.

#### Training Programmes:

Title	Frequency	Duration	Language
Fishing Technologies	yearly	2 1/2 yrs	Spanish
Fishing Administrative Technologies	yearly	2 1/2 yrs	Spanish

## ECUADOR

### Foods Engineering – ESPOL

Address: Campus Prosperina, Km 30.5 Perimetral highway, Guayaquil, Ecuador.  
Tel.: (593) – 4 – 269-386 / 269-394  
Fax: 530 – 04 – 269-368 / 852-804  
E-mail: ialim@espol.edu.ec

Head of Organization: Mr. Luis Miranda, Coordinator  
Type of organization: Univ. Dept. / Higher Educ  
Responsible Authority: Mechanical and Sciences of the Production Engineering Faculty, Escuela Superior Politécnica del Litoral

Working Languages: Spanish; English

#### Major Fields of Interest:

Handling: Onshore  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing  
Species: Fish, Crustaceans, Cephalopods  
Development: Traditional and new Products.  
Others: Educational Interest.

#### Working Facilities:

Laboratories: Chemistry; Microbiology; Quality Control, Engineering.  
Others: Pilot Plant, Library, Website Facilities.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
MSc Course (Food Engineering)	yearly	4 1/2 yrs	Spanish

## ECUADOR

### Foods Technology Program

Address: Campus Prosperina, Km 30.5 Perimetral highway, Guayaquil, Ecuador  
Tel.: (593) – 4 – 269-386 / 269-394  
Fax: 530 – 04 – 269-368 / 852-804  
E-mail: Protal@espol.edu.ec

Head of Organization: Dr. Gloria Bajaña  
Type of Organization: Univ. Dept. / Higher Educ.  
Responsible Authority: Eng. Victor Bastidas Jiménez

Number of Staff: Scientists: 220                      Others: 110  
Working Languages Spanish, English, Portuguese, Russian.

#### Major Fields of Interest:

Handing: Compressed Foods  
Processing: Dried, frozen meats  
Species: Fish, meats  
Development: Traditional and new Products.  
Quality: Quality Control  
Others: Biochemical Processes

Present Programmes: Shrimps; Meats; Canning; Vegetables; Research and development; Technical and Economic Analysis Pathogenic Agents identification; Multidisciplinary

#### Working Facilities

Laboratories: Chemistry, Bromatology, Microbiology.  
Others: Pilot Plant.

#### Training Programmes.

Title	Frequency	Duration	Language
Technical Foods	Yearly	2.5 years	Spanish - English

## EGYPT

### Alexandria Fish Technology Centre

Address: Aflaton Street, El-Chatby, Alexandria  
Tel.: (20)-3-597.196/1862  
Fax: (20)-3-597.2780  
Telex: 54467 UNIVY UN

Head of Organization Executive Director, Professor Dr Esam Kamel Moustafa  
Type of Organization Research Institute, University/Environment and Community Development  
Department  
Responsible Authority Dean of Faculty of Agriculture & Chairman of Board of Directors: Prof. Dr. Ezzat Kadous.

Number of Staff: Scientists: 5 Others: 4  
Working Languages: Arabic; English

#### Major Fields of Interest:

Handling: Onshore.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Icing; Freezing; Minced Products; Fish Meal.  
Species: Fish; Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional Packaging; Traditional and New Equipment.

#### Training Programmes:

Title  
Fish Handling (Post Harvest Technology)  
Fish Processing including HACCP

## **FAROE ISLANDS**

### **Food and Environmental Agency (Heilsufrodliga Starvsstovan)**

Address: Debesartrod FR-100, Torshavn  
Tel.: +298 31 53 00  
Fax: +298 31 05 08  
E-mail: FeAgency@hfs.fo

Head of Organization Mr Bardur Enni  
Type of Organization Research Institute; Government Agency  
Responsible Authority Faroese Local Government

Number of Staff: Scientists: 5 Others: 25 (incl. academic adm. personnel)  
Working Languages: Faroese

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal.  
Quality: Quality Assurance; Quality Management; HACCP; Quality Measurements; Sensory Evaluations.  
Others: Fish Culture; Marine Pollution; Laboratory Analysis on Food and Environment.

Present Programmes: Shark Liver Oil; Non-traditional Fish Species; By-products; Pathogens in fish processing; Pelagic fish species.

#### Working Facilities:

Laboratories: Chemistry; Microbiology; Virus; Sensory Evaluation.

## **FINLAND**

### **VTT Biotechnology and Food Research**

Address: Biologinkuja 1, Espoo 02150  
Tel.: (358)-94561  
Fax: (358)-9-4552103  
Mail to: PO Box 1500, 02044 VTT, Finland

Head of Organization: Director, Dr Juha Ahvenainen  
Type of Organization: Research Institute

Number of Staff: Scientists: 200                      Others: 100  
Working Languages: Finnish

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration.  
Processing: Salting/Drying; Fermentation; Minced Products; Filleting.  
Development: Traditional and New Fish Products; Traditional Processes; Traditional and New Packaging; Traditional Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Training; Fishing Technology; Marine Pollution.

Present Programmes: Hygiene in Fish Plants. Retail Packaging of Fresh Fish.

#### Working Facilities:

Laboratories: Chemistry; Processing; Biochemistry; Microbiology; Quality Control.  
Others: Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library.

Serial Publications: VTT Publications (Occasionally on Fish Research).

## FRANCE

### Centre de Coopération Internationale en Recherche Agronomique pour le Développement

#### Département Amis – Programme Agro-Alimentaire

Address: 73 Rue J.F. Breton, Montpellier 34032  
Tel.: 33-467-615713  
Fax: 33-467 614449  
E-mail: paa@cirad.fr

Head of Organization Director: Mr Vincent Dolle  
Head of Agrifood Systems Program: Mr. A.L. Wack  
Type of Organization Research and Development in Agriculture in Tropical and Subtropical Areas  
Responsible Authority French Ministries of Research and Foreign Affairs

Working Languages: French; English; Spanish; Portuguese

#### Major Fields of Interest:

Handling: Onboard.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Chilling/Freezing;  
Minced Products; Fish Meal.  
Species: Fish; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and  
New Packaging; Traditional and New Equipment.  
Quality: Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension.

Present Programmes: Fish Drying in Africa; Osmotic Dehydration of Fish; Fish Chilling and Freezing.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality  
Control.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Drying Equipment;  
Freezing Apparatus.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Seafloor courses for engineering students	yearly	1 week	French/English/Spanish
Various training including for laboratories	yearly	1-6 months	

## FRANCE

### Institut Français de Recherche et d'Exploitation de la Mer (IFREMER)

Address: Rue de l'île d'Yeu, Nantes Cedex 03 44311  
Tel.: (33)-40-374.070  
Fax: (33)-40-374.071  
E-mail: Elie.Jamache@ifremer.fr  
Telex: 711196

Head of Organization President, Director-General, M. Pierre David  
Type of Organization Public Research Institute  
Responsible Authorities Ministère de l'éducation nationale, de la recherche et de la technologie; ministère de l'agriculture et de la pêche; ministère de l'équipement.

Number of Staff: Scientists: 22 Others: 18  
Working Languages: English; French

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal.  
Species: Crustaceans; Molluscs; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment.  
Quality: Fish Quality Control/Assurance.  
Others: Biochemistry; Consultation; Training; Extension; Microbiology.

Present Programmes: Fish Quality Control/Assurances; Fish Processing. Extraction of Marine Molecules.

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Biophysics.  
Others: Scientific Research Vessels; Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library.

#### Training Programme:

Title	Duration	Language
As required		French

Serial Publications: BIBLIOMER (Internal Report of Bibliographic Review)



## GERMANY

### Federal Research Centre for Fisheries

Address: Palmaille 9, Hamburg D-22767  
Tel.: (49)-40-3190-8600  
Fax: (49)-40-3190-8603

Head of Organization Director, Professor Dr .St. Jenke  
Type of Organization Research Institute  
Responsible Authority Federal Ministry of Food, Agriculture and Forestry

Number of Staff: Scientists: 62 Others: 188  
Working Languages: German; English

#### Major Fields of Interest:

Species: Fish; Crustaceans; Molluscs; Cephalopods; Algae.  
Development: New and Traditional Processes.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Statistics; Fishery Resources; Stock Assessment; Oceanography;  
Fishery Biology; Management Information; Fishing Technology; Fish Culture;  
Marine Pollution; Ecotoxicology; Radioecology; Pathology.

Present Programmes: Gear Development.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control;  
Radiochemistry; Fish Market Sampling.  
Others: Cold Storage; Library; Research Vessel; Fish Culture Ponds.

#### Training Programme:

Title	Duration	Language
Various	14days	German

Serial Publications: Informationen fuer die Fischwirtschaft ISSN 1437-5842  
Archive of Fishery and Marine Research ISSN 0003-9063.

## GREECE

### Technological Educational Institution of Mesolonghi (T.E.I.), Department of Fisheries and Aquaculture

Address: Mesolonghi 30200  
Tel.: (30)-631-58253  
Fax: (30)-631-58276  
E-mail: ixthal@teimes.gr

Head of Organization Mr George Kolaitis  
Type of Organization TEI Dept./Higher Educ.  
Responsible Authority Government

Number of Staff: Scientists: 20 Others: 15  
Working Languages: Greek

Major Fields of Interest: Ichthyology; Biology of Aquatic Organisms; Aquaculture; Fisheries, Fish Population Dynamics; Fish Pathology; Marine Biology; Fish Products Quality Control; Processing of Fish Products.

Present Programmes: Study of Fishes of Family Mugilidae in Messolonghi Lagoon.

#### Working Facilities:

Laboratories: Fish Pathology; Marine Biology; Fish Products Processing; Chemistry; Phyto-zooplankton culture; Biology of Aquatic Organisms; Shellfish Culture; Aquaculture; Fish Population Dynamics; Shore Facilities Designing; Aquariums.

Others: Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
School Course		3.5 years	Greek

## GUINEA-BISSAU

### Centro de Investigação Pesqueira Aplicada

Address: Av. Amilcar Cabral, Bissau 102/72  
Tel.: 245 21 16 95 (CIPA)  
Fax: 245 20 11 68 (UICN-Bissau)

Head of Organization: Director General, Mrs. Maria Luisa Ferreira  
Type of Organization: Research Institute  
Responsible Authority: Estudo dos recursos Halieuticos e Contrôle de Qualidade de Pescado

Number of Staff: Scientists: 22  
Working Language: Portuguese, French, Spanish

#### Mayor Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Fermentation, Smoking; Freezing.  
Species: Fish  
Development: Traditional Fish Products; Traditional Processes; Traditional Packaging; Traditional Equipment.  
Quality: Fish inspection; Quality Control  
Others: Biochemistry; Statistics; Training; Fishery Resources; Oceanography; Fishery Biology; Fishing Technology.

#### Working Facilities:

Laboratories: Chemistry, Biology, Microbiology; Quality Control.  
Others: Pilot Plant; Library.

#### Regular Training programmes:

Title	Frequency	Duration	Language
not specified	monthly	15 days	
not specified	monthly	15 days	

## HONDURAS

### Escuela de Agricultura "Luis Landa"

Address: El Bazun, Nacaome, Valle  
Tel.: (504)-895-4307/895 4309  
E-mail: [escallnv@hondutel.hn](mailto:escallnv@hondutel.hn)  
Mail to: Aptdo Postal No 14  
Head of Organization Ing. Reulo Berrios Gómez  
Type of Organization Research Institute; Regional Authority  
Responsible Authority Ministerio de Educación Pública

Number of Staff: Others: 9  
Working Languages: Spanish

#### Major Fields of Interest:

Handling: Onshore.  
Processing: Salting/Drying; Freezing; Fish Meal.  
Species: Crustaceans; Molluscs; Algae.  
Development: New Fish Products; New Processes; New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Extension;  
Oceanography; Fishery Biology; Management Information; Fishing Technology;  
Fish Culture; Marine Pollution.

#### Working Facilities:

Laboratories: Chemistry; Biology; Biochemistry; Microbiology; Quality Control.  
Others: Ice Making Plant; Cold Storage; Library; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Science and Aquaculture Course		3 years	Spanish.

## INDIA

### College of Fisheries, Konkan Agricultural University

Address: A/P: Shirgaon, Ratnagiri, Maharashtra State 415629  
Tel.: (91)-02352-32241  
Fax: (91)-02352-32241

Head of Organization Associate Dean, Dr Prakash Chandrashekhar Rajee  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Vice Chancellor, Konkan Agricultural University.

Number of Staff: Scientists: 20 Others: 2  
Working Languages: English; Hindi; Marathi

#### Major Fields of Interest:

Handling: Onboard; Onshore; Live Fish Transport and Holding.  
Processing: Drying; Salting/Drying; Fermentation; Canning; Freezing; Minced Products; Agar and Alginates; Chitin.  
Species: Crustaceans; Molluscs; Cephalopods; Algae; Fresh Water Carps; Perches and Mulletts.  
Development: Traditional and New Fish Products; New and Traditional Processes; Traditional and New Packaging; New Equipment; Shelf Life; Snack Foods.  
Quality: Quality Control.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Development of New Products from Low-priced Fish, Crustaceans, Molluscs and algae.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Microbiology Test Kitchen; Library; Research Vessel; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fish Products	quarterly	8 days	English/Marathi

#### Others:

Title	Duration	Language
Fish Quality Control	2 days	Marathi.

## INDIA

### College of Fisheries, Kerala Agricultural University Kerala

Address: Panangad P.O., Cochin 682 506  
Tel.: (91)-484-700337/700598  
Fax: (91)-484-700337  
E-mail: KAUFish@VSNL.com

Head of Organization Dean, Dr.D.M. Thampy  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Vice Chancellor, Kerala Agricultural University

Number of Staff: Scientists: 38  
Working Languages: English

#### Major Fields of Interest\*:

Handling: Onshore; Depuration.  
Processing: Drying; Salting/Drying; Canning; Freezing; Minced Products.  
Species: Crustaceans; Molluscs; Cephalopods  
Development: Traditional Fish Products; New Processes; New Equipment.  
Quality: Quality Control.  
Others: Biochemistry; Nutrition; Statistics; Economics; Extension; Fishery Biology; Fishing Technology; Fish Culture.

\*Major Fields of interest, Department-wise: Department of Aquaculture: Freshwater prawn hatcheries, carp hatcheries, ornamental fish culture, Freshwater fish and prawn culture, Brackishwater fish and shrimp culture. Integrated Farming, Mariculture, Fish disease, Algal culture, sea weed culture.

Present Programmes: Product Development of Bivalve Meat. Feed Formulation for Prawns.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control; Aquaculture.  
Others: Library; Research Vessel; Fish Culture Ponds; Hatchery.

Fishery Biology: Taxonomy of fishes and crustaceans, Biodiversity and fish genetic resources, Fish toxicology with special reference to pesticides, Fish endocrinology and reproductive biology and Biology of ornamental fishes.

Processing Technology: Handling: On shore: Depuration.

Processing: Drying, salting/Drying, canning, Freezing, Mineral Products

Species: Crustaceans, Molluscs, Cephalopods

Development: Traditional Fish Products, New Process, New equipment.

Quality: Quality control

Present Programmes: Technology upgrading for production of dried, cured and smoked fish, Feed Formulation for prawns.

Fishing Technology: Navigation and seamanship gear Technology, fishing Technology, crafts and gear.  
Fishery Hydrography: Marine biology, water chemistry and pollution, physical and chemical Oceanography, Limnology, Meteorology.

Present Programmes: Coastal zone studies, Deep scattering layer studies, Estuarine dynamics and biology.

Management Studies: Fisheries Economics, Fisheries Statistics, Management, fisheries marketing, fisheries extension, physical education, computer training; Fishery Engineering

Aquaculture engineering, marine engineering, refrigeration and equipment engineering. Fishing crafts and Technology.

Working Facilities:

Laboratories: Chemistry , biology, processing, Biochemistry, microbiology, quality control.  
Aquaculture

Computer lab. with LAN.

Other facilities: Website, Library, Research vessel

Regular Training Programmes:

Title	Frequency	Duration	Language
Bachelor of Fishery Science, BFSc	yearly	4 years	English
Master of Fishery Science, MFSc in Aquaculture, Processing Technology, Fishery Biology, and Fishery Hydrography	yearly	2 years	English

Others: Title	Duration	Language
Various Training Programmes in areas like - ornamental fish culture, - quality control in fish processing, Fishery Hydrography etc.	short-term	English

## INDIA

### Fisheries College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University

Address: Thoothukkudi-628 008 Tel.: (91)-461-21.554 Fax: (91)-461-22.154  
Head of Organization Dean, Dr V. Sundararaj  
Type of Organization Institution of University/Higher Education  
Responsible Authority The Registrar, Tamil Nadu Veterinary and Animal Sciences University;  
Madhavaram, Chennai-600 051.  
Number of Staff: Scientists: 56 Others: 82  
Working Languages: English; Tamil

#### Major Fields of Interest:

Handling: On board; Onshore; Transport of Fish Seed and Breeders.  
Processing: Solar Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal; Value-added Fish Products and By-products; Agar; Chitin; Chitosan; Algin.  
Species: Finfish; Crustaceans; Molluscs; Cephalopods; Freshwater Carps; Seaweed.  
Development: Traditional and New Fishery Products; Traditional and New Processing Methods; Traditional and New Packaging Techniques; Traditional and New Equipment; Shelf life; Fish Pickles; Fish Biscuits; Fish Noodles; Fish Wafers.  
Quality: Fish Inspection; Fish Quality Control/Assurance.  
Others: Fishery Biology; Fishery Resources, Stock Assessment, Aquaculture, Pathology, Parasitology; Genetics; Biotechnology; Fishery Microbiology; Biochemistry; Nutrition; Fishing Technology; Fisheries Engineering; Limnology; Marine Biology; oceanography; Marine Pollution; Pollution Monitoring; Statistics; Economics; Consultation; Training; Extension; Management.

Present Programmes: Teaching Programmes in B.F.Sc., M.F.Sc. and Ph.D.; Development of New Fishery Products and By-products; Fishery Microbiology; Fish Nutrition and Quality Control; Extension/Training Programmes for Educated Unemployed Rural Youth, and Fisheries Entrepreneurs in the Development of Value-added New Fisheries Products of commerce and Export Value.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Biotechnology.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Research Vessel; Fish Culture Ponds; Hatchery; Glass House Aquarium; Ornamental Fish Culture Units; Fish Feed Formulation; Mini-reservoir; Marine Workshop; Computer Centre; Swimmingpool.

Regular Training Programmes: Title	Frequency	Duration	Language
Hygienic Handling of Fish	2 per month	1 month	Tamil/English
Value-added Fishery Products and By-products	5 per month	2 days	Tamil/English

#### Others:

Shrimp Farming	5 days		Tamil/English
Composite Fish Culture	5 days		Tamil/English
Ornamental Fish Culture	5 days		Tamil/English
Freshwater Prawn Culture	5 days		Tamil/English
Integrated Fish Farming		5 days	Tamil/English

Tamil/English

Tamil/English



Culture of Fish Food Organisms  
Fish Seed Production

5 days  
5 days

Tamil/English  
Tamil/English

## INDIA

### Central Institute of Fisheries Technology (CIFT)

Address: Willingdon Island, Matsyapuri P.O., Cochin 682 029  
Tel.: (91)-484-666945  
Fax: (91)-484-668212  
E-mail: root@cift.ker.nic.in

Head of Organization Director, Dr K. Ravindran  
Type of Organization Research Institute; National Authority  
Responsible Authority Indian Council of Agricultural Research, New Delhi  
Number of Staff: Scientists: 101 Others: 521  
Working Languages: English; Hindi

#### Major Fields of Interest:

Fishing Technology: Fishing craft; Fishing gear; Engineering & Instrumentation  
Handling: On board; Onshore; Depuration.  
Processing: Drying; Salting; Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal; Fish Waste Utilization; Live Fish Transportation; Agar; Chitin; Chitosan; Fish Oil; Fish Proteins; Fish Silage; Marinades; Surimi.  
Species: Crustaceans; Molluscs; Cephalopods; Teleosts; Elasmobranchs.  
Development: Traditional and New Fishery Products; Traditional and New Processes; Traditional and New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance; Storage and Shelf Life; Fish Microbiology.  
Others: Biochemistry; Nutrition; Statistics; Consultation; Training; Extension; Marine Pollution.

Present Programmes: Research and Extension Education in the Field of Fisheries Technology including Fishing Craft, Fishing Gear, Fish Processing, Biochemistry, Microbiology, Quality Assurance, Engineering, Electronics and Statistics.

#### Working Facilities:

Laboratories: Processing; Engineering; Biochemistry; Microbiology; Quality Control; Instrumentation; Fishing Craft; Fishing Gear.  
Others: Pilot Plant; Cold Storage; Library; Research Vessel; Machine Shop.

#### Training Programme:

Title	Duration	Language
Topics Related to Fishing and Fish Processing	3-30 days	English

Serial Publications: Fish Technology Newsletter (Quarterly); Research Highlights (Annual); Special Bulletin,  
Annual Report (Yearly).

## INDIA

### Bhabha Atomic Research Centre

Address: Food Technology Division  
FIPLY, Bhabha Atomic Research Centre  
Trombay, Mumbai-400085, India

Tel.: (91)-22-5505180

Fax: (91)-22-5505151/5519613

Telex: 011-61017-011-61022

E-mail: fteediv@magnum.barc.emet.in

Head of Organization Director, Dr. Anil Kakodhar

Head of Division Dr. D.R. Bongirwar

Type of Organization Research and Development Institute

Responsible Authority Department of Atomic Energy, Govt. of India

Number of Staff: Scientists: 36 Others: 31

Working Languages: English

Major Fields of Interest: Development of radiation process (dose 1-4 kGy) for the extension of shelf-life of fresh fish; Development of radiation process (dose 3-6 kGy) for the elimination of pathogens from seafood; Development of heat radiation combination treatments for the preservation of semi-dried fishery products; Disinfestation of dried fish by irradiation utilization of under-utilized fish species by radiation processing as well as conventional methods.

Species: Lean fishes like Bombay duck, medium fatty fishes like white pomfret, black pomfret and seer fish and fatty fishes like mackerel and sardine. Crustaceans and Elasmobranchs.

Development: New Fish Products such as laminates, fish protein powder, fish protein hydrolysate, protein gel from under-utilized fish species such as shark, jawala, dhome and Bombay duck.

Others: Basic aspects of fish spoilage. Proteolytic enzymes from fish muscle, characterization of fish enzymes, gelation of fish proteins, fish biotechnology and microbiology.

Present Programmes: Research and development in the field of fishery technology with special reference to radiation processing in comparison with conventional methods of fish processing. Commercialization of radiation processing.

Working Facilities:

Laboratories: Food processing laboratory with equipment for fish processing. Biochemistry, microbiology, instrumentation, nutritional quality.

Others: Co60 package irradiator, Cs137 irradiator, Co60 Gamma chamber, cold rooms, taste panel rooms, ice making machines and well-equipped laboratories.

Training Programmes: These are conducted on request from R&D Institutes of the country as well as by IAEA/WHO/FAO

Title	Duration	Language
Topics related to fish processing	Few weeks to 6 months	English

## INDIA

### The Marine Products Export Development Authority

Address: Cochin 682 036, Kerala  
Tel.: (91)-484-310828/311803  
Fax: (91)-484-313361/314467  
Telex: 0885 6288/6648  
E-mail: mpeda@vsnl.com

Head of Organization: Chairman, Mr. K. Jose Cyriac IAS

Type of Organization: Government Department; National Authority; Seafood Export Promotion Organization

Responsible Authority: Ministry of Commerce, Govt. of India, New Delhi

Number of Staff: Scientists : 81                      Others : 354

Working Languages: English, Hindi

#### Major Fields of Interest:

Handling	Onboard; Onshore
Quality	Seafood Inspection; Seafood Quality Control; Fish Quality Control/Assurance.
Others	Statistics; Training; Extension; Fish Culture; Marine Pollution; Fishery Development; Market Research; Market Promotion; Environment; Trader Information; Deep Sea Fishing; Aquaculture Projects; Trade Fair Product Development; Ornamental Fish Development.

#### Working Facilities:

Laboratories	Chemistry, Microbiology, Quality Control, Pollution Control, HACCP.
Others	Cold Storage, Library, Aquaculture Demonstration, Shrimp Hatchery

Serial Publications: Price Indicator of Marine Products (PRIME);  
Seafood Newsletter; Indian Seafoods;  
Marine Products Export Review;  
Statistics of Marine Products;  
Sagarika (in Hindi)

## INDIA

### College of Fisheries, University of Agricultural Sciences

Address: Kankanady, Mangalore-575002  
Tel.: (0824)-436384, 439256  
Fax: (0824)-436384, 438366  
E-mail: mircen@giasbg01.vsnl.net.in

Head of Organization Prof. S. Bisaliah, vice-chancellor  
Type of Organization University  
Responsible Authority vice-chancellor (for programmes on fish technology, contact Dr. I. Karunasagar, Professor and Head, Department of Fishery Microbiology)  
Number of Staff: Scientists: 50 Others: 40  
Working Languages: English

#### Major Fields of Interest:

Handling: fish, shellfish  
Processing: freezing, canning, by-products, sausages.  
Species: mackerel, sardines, anchovies, seerfish, tuna, clams, mussels,  
Development: new products  
Quality: quality assurance based on HACCP, risk assessment.

Present Programmes: Teaching Bachelors, Masters and Ph.D in Fisheries Technology, Fishery Microbiology. Presently active research programmes on fish safety, pathogens associated with fish and shellfish and their rapid detection by molecular methods, marine toxins and their detection by HPLC, fish proteins and their characterization.

#### Working Facilities

Laboratories: Excellent Laboratory facility in Fish Microbiology, which has been recognized by UNESCO as a MIRCEN (Microbial Resources Center)  
Others: Facilities for processing.

#### Training Programmes:

Title	Duration	Language
	.-. days	
Concept of risk assessment for fish	one week	English
Molecular techniques for fish quality assurance	two weeks	English

## IRAN

### Iranian Fisheries Research Organization

Address: No. 24, 11th Alley, Mir Emad St., Mothahari Ave., Tehran  
Tel.: (98)-21-875.2871/875.4099  
Fax: (98)-21-875.1495  
E-mail: H-Ghadir@ifro.neda.net.ir  
Mail to: P.O. Box 14155-6116

Head of Organization President, Dr Sohrab Rezvani  
Type of Organization Research Institute; Government Dept.  
Responsible Authority Fishery Authority (Shilat) of Iran

Number of Staff: Scientists: 350 Others: 441  
Working Languages: Farsi; English

#### Major Fields of Interest:

Handling: Onboard; Onshore  
Processing: Drying; Salting/Drying; Smoking; Canning; Freezing.  
Species: Acipenseridae, Cyprinidae, Salmonidae, Clupeidae, Serranidae, Scomberidae, Carcharinidae, Sparinidae, Stromatidae, Lutjanidae, Chanidae.  
Development: New Fish Products; Traditional and New Processes; New Equipment.  
Quality: Fish Inspection; Quality Control.  
Others: Biotechnology, Ecology, Aquaculture, Stock Assessment.

Present Programmes: Research in the field of Fisheries Sciences.

#### Working Facilities:

Laboratories: Chemistry; Biochemistry; Biology; Processing Quality Control; Microbiology.  
Others: Cold Storage; Library; Research Vessel; Fish Culture Ponds.

#### Other Training:

Title	Duration	Language
Quality Control		Farsi/English
Product Processing		Farsi/English

Serial Publications: Iranian Journal of Fisheries Science (in English)  
Iranian Journal of Fisheries Science (in Farsi)  
IFRO Newsletter(in English)  
IFRO Annual Report (in English)  
IFRO Annual Report (in Farsi)

## IRELAND

### Aquaculture Development Centre, University College Cork

Address: Lee Maltings, Prospect Row, Cork  
Tel.: (353)-21-904.050  
Fax: (353)-21-277.922  
E-mail: nadc@ucc.ie

Head of Organization: Manager, Dr Richard Fitzgerald  
Type of Organization: Univ. Dept./Higher Educ.  
Responsible Authority: Prof. John Davenport, Head, Dept. of Zoology

Number of Staff: Scientists: 8                      Others: 4  
Working Languages: English

#### Major Fields of Interest:

Handling: Depuration.  
Processing: Smoking.  
Species: Fish; Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Equipment.  
Quality: Quality Control; HACCP.  
Others: Nutrition; Statistics; Consultation; Training; Extension; Fishery Resources; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Aquaculture; Genetics; Species Selection and Evaluation; Health and Disease Control; Immunodiagnosics; Image Processing and Analysis; Database Design.

Other Working Facilities: Cold Storage; Taste Panel Room; Library; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Higher Diploma in Aquaculture	yearly	1 year	English
Masters in Aquaculture	yearly	1 year	English.

## IRELAND

### Letterkenny Institute of Technology

Address: Port Rd., Letterkenny, Co. Donegal  
Tel.: (353)-74-64100  
E-mail: john.hines@lyit.ie

Head of Organisation: Head, School of Science, Dr John Hines  
Type of Organisation: Regional Authority  
Responsible Authority: Department of Education

Number of Staff: Scientists: 23                      Others: 5  
Working Languages: English

#### Major Fields of Interest:

Processing: Smoking; Canning; Freezing; Fish Meal.  
Species: Molluscs; Algae.  
Development: New Fish Products; New Processes.  
Quality: Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Training; Fishery Biology; Fish Culture; Marine Pollution.

Present Programmes: Fatty Acid Analysis of Farmed Salmon Offal.  
Quality Assurance of Wild Fish.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control.  
Others: Library

#### Regular Training Programmes:

Title	Frequency	Duration	Language
National Certificate in Aquatic Science (under review)	yearly	1 year	English
National Diploma in Analytical Science (Aquatic Science) (under review)	yearly	1 year	English



## IRELAND

### School of Food Science and Environmental Health, Dublin Institute of Technology

Address: Cathal Brugha St., Dublin 1, Ireland  
Tel.: (353)-1-402.4356  
Fax: (353)-1-402.4495  
E-mail: marlene.proctor@dit.ie

Head of Organization Dr Marlene R.M. Proctor, Head of School of Food Science and Environmental Health.

Type of Organization Univ. Dept./Higher Educ.

Responsible Authority Dublin Institute of Technology

Number of Staff: Scientists: 24 Others: 4

Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Capture and Harvesting.

Processing: Underlying Biochemistry.

Development: New Packaging: (Modified Atmospheric Packaging); Sous-vide Processing.

Quality: Fish Inspection; Fish Quality Control/Assurance; Application of HACCP.

Others: Development of Education Programmes.

#### Working Facilities:

Laboratories: Processing; Biochemistry; Microbiology

Others: Ice Making; Cold Storage; Test Kitchen; Sensory Analysis; Library; Links with Industry.

#### Other Training Programmes:

Title	Duration	Language
Training Programmes	as required	English

Serial Publications: Research Results are disseminated through Publication in Scientific Journals.

**IRELAND**

**Institute of Technology, Tralee**

Address: Clash, Tralee, Co. Kerry  
Tel.: (353)-66-7145600  
Fax: (353)-66-7145651  
Website: www.ittralee.ie  
E-mail: info@ittralee.ie

Head of Organization Director, Dr Sean McBride  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Autonomous

Number of Staff: Scientists: 20  
Working Languages: English

Major Fields of Interest:

Handling: Onshore  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal.  
Species: Crustaceans; Algae; Finfish.  
Development: Seaweed Liquid Extracts; Composts; Cosmetics.  
Others: Consultation; Training; Fish Culture; Marine Pollution; Sea Angling; Marine Tourism.

Working Facilities:

Laboratories: Chemistry; Biology; Engineering; Biochemistry; Microbiology.  
Others: Test Kitchen; Taste Panel Room; Library; Machine Shop.

Regular Training Programmes:

Title	Frequency	Duration	Language
Regular Training Programme			English

## ISRAEL

### Fishery Products Laboratory, Kimron Veterinary Institute

Address: Beit Dagan 50250  
Tel.: (972)-3-968.1724/5  
Fax: (972)-3-968-1692  
Telex: VSAH-381472  
Mail to: PO Box 12, Beit Dagan 50250

Head of Organization Director, Dr G. Alexander Gelman  
Type of Organization Research Institute; Government Dept.  
Responsible Authority Kimron Veterinary Institute

Number of Staff: Scientists: 4 Others: 1  
Working Languages: Hebrew; English; Russian; French; Spanish

#### Major Fields of Interest:

Processing: Salting/Drying; Fermentation; Smoking; Canning; Minced Products; Fish Storage; Shelf life; Chilling; Fish Proteins; Fish Waste Utilization; Snack Food.  
Species: Fish; Crustaceans; Molluscs; Cephalopods; jellyfish; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes.  
Quality: Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Identification of fish species by DNA analysis.

Present Programmes: Development of Fish Products for Human Consumption.

#### Working Facilities:

Laboratories: Processing; Biochemistry; Quality Control; Parasitology.  
Others: Pilot Plant; Cold Storage; Taste Panel Room; Library.

## ITALY

### Istituto Centrale per la Ricerca Scientifica e Tecnologica Applicata al Mare (ICRAM)

Address: Via di Casalotti 300 - Rome 00166  
Tel.: (39)-06-615701 (switchboard)  
Fax: (39)-06-61561906  
E-mail: icramaf@tin.it  
Website: icram.org

Other branches: STS ICRAM Chioggia (Via della Stazione 5 – Chioggia 30015)  
(Fax: 39-41-5500626; E-mail otgiovan@tin.it)  
STS ICRAM Palermo (Via E. Amari 124 – Palermo 90139)  
(Fax: 39-91-6114060; E-mail: andalorf@tin.it)

Head of Organization President G. Notarbartolo di Sciara  
Type of Organization Research Institute  
Responsible Authority Ministry of Environment

Number of Staff: Scientists: 27 Others: 26  
Working Languages: Italian; English; French

Major Fields of Interest: Marine pollution; Marine Protected Areas; Algal blooms; Harbour dredging; Stock Assessment; Environmental Effects of Fisheries and Aquaculture; Rearing of new species; Geographic Information Systems; Economics of Aquaculture.

Present Programmes: Assessment of elasmobranch catches in selected areas; Assessment of algal blooms in the Adriatic and Tyrrhenian Seas; Creation of several protected areas; Environmental effects of the “rapido” trawl beam; Analysis of trawl discards; Rearing of sea perches.

Working Facilities:  
Laboratories: Chemical and biological.  
Others: Library; meeting room (70); Guest lodging (2).

#### Other Training Programmes:

Title	Duration	Language
As required	1-2 weeks	Italian

Serial Publications: “Quaderni ICRAM”

## ITALY

### Centro Marino Internazionale (International Marine Centre) - IMC

Address: Località Sa Mardini, 09072 Torregrande-Oristano  
Tel.: (39)-0783-22.027/22136/22032  
Fax: (39)-0783-22.002  
E-mail: R.Covacci@imc-it.org

Head of Organization Director General, Dr Renato Covacci  
Type of Organization International Research and Training Centre  
Responsible Authority Members: M.A.R.E. S.a.s., Genova, Italy; Consiglio Nazionale delle Ricerche (National Research Council), Rome, Italy; Marine Biological Laboratory of Woods Hole; Italy-Japan Biological Society, Nagoya, Japan; Oristano Municipality, Italy; University of Nantes (France); Russian Academy of Sciences, Moscow.

Number of Staff: Scientists: 20 Others: 5  
Working Languages: Italian and English

Major Fields of Interest: Visual ecology; Genetics; Neurobiology; Neuroethology; Organismal biology; Biogeochemistry; Oceanography; Numerical modelling.

Species: Mugilidae; Sparidae; Eel.

Development: Genetic fingerprinting of fishes; Marine biotechnology; Fish Sensory System; Coastal Ecosystem; Coastal lagoons' eutrophication; Biogeochemical cycles; Posidonia oceanica meadows ecosystem; Fish Behaviour and Biomechanics; Animal locomotion; Ecomorphology, Physiological Ecology, Pre-operational oceanography; Ocean circulation modelling; Ecological modelling; Transnational Training.

Present Programmes: Adaptation of fish sensory system to the photic environment. Fish as model systems for biomedicine; physical/chemical/biological characterization of coastal waters and lagoons; Advanced technology and innovation for the sustainable exploitation of novel marine bioresources; Monitoring and numerical modelling of ocean processes; Predator-prey interactions in aquatic habitats of different structural complexities; Fish behaviour in relation to environmental variables such as hypoxia and turbidity. Mediterranean forecasting system pilot - nested local models.

#### Working Facilities:

Laboratories: Molecular Biology and genetics; Neurobiology; Neurophysiology; Morphology and morphometry; Chemistry and Biochemistry; Ethology; Sedimentology.

Others: DNA Sequencer and DNA analyser; Biosonar for acoustic surveys; Workstations for numerical modelling; Rearing Tanks; Videoanalysis system for behavioural studies; Research Vessel; Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Advanced Courses	yearly	2-3 weeks	English
2000 advanced course on Sea Urchin Aquaculture, 20-29 November.			

**ITALY**

**Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione**

**(Fish Technology and Quality Unit)**

Address: Via Ardeatina N. 546, Roma 00178  
Tel.: 39-06-503 2412  
Fax: 39 06-503 1592

Head of Organization Chairman, Professor Giuseppe Rotilio  
Type of Organization Research Institute  
Responsible Authority Ministero delle Politiche Agricole e Forestali

Number of Staff: Scientists: 4 Others: 4  
Working Languages: English, Italian

Major Fields of Interest:

Processing: Freezing; Nutritional Quality.  
Species: Fish.  
Development: Traditional and New Fish Products; Nutritional Quality.

## ITALY

### Stazione Sperimentale per l'Industria delle Conserve Alimentari

Address: Viale F. Tanara 31/A, Parma 43100  
Tel.: (39)-0521-7951  
Fax: (39)-0521-771829  
E-mail: [ssicapr@rsadvnet.it](mailto:ssicapr@rsadvnet.it)  
Telex: 532 259 SSICA I

Head of Organization Director, Prof. Gianfranco Dall'Aglio  
Type of Organization Research Institute  
Responsible Authority Autonomous Administration under Supervision of Ministry of Industry.

Number of Staff: Scientists: 2 Others: 2  
Working Languages: Italian

#### Major Fields of Interest:

Handling: Onshore.  
Processing: Salting/Drying; Canning; MA Packaging; Minced Products; Marinades.  
Species: Finfish; Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment.  
Quality: Quality Control.  
Others: Consultation; Training; Extension.

Present Programmes: Chill Storage of Fish and Fish Products by Modified Atmospheres; Halophilic bacteria and proteolytic activities in salted anchovies. DNA amplification using PCR as an analytical method for species identification in fish products.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Quality Control; Package Inspection.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room;

Library.

#### Other Training Programmes:

Title	Duration	Language
Individual Training for Technicians from Industry		Italian

## **KENYA**

### **Kenya Marine and Fisheries Research Institute (KMFRI)**

Address: Mkomani Road, English Point, Mombasa  
Tel.: (254)-11-475.141/475.157  
E-mail: eokemwa@recosci.com

Head of Organization: Director, Dr. Ezekiel Okemwa  
Type of Organization: Research Institute  
Responsible Authority: The Ministry of Research, Technical Training  
and Technology

Number of Staff: Scientists: 5                      Others: 6  
Working Languages: English

#### Major Fields of Interest:

Handling: Onshore  
Processing: Smoking; Minced Products  
Species: Fish  
Development: New Fish products; New Equipment  
Quality: Fish Inspection; Fish Quality Control/Assurance  
Others: Biochemistry; Nutrition

#### Present Programmes:

Nile Perch Utilization  
FAO Co-operative Project with KMFRI

#### Working Facilities:

Laboratories: Processing; Microbiology  
Others: Library



## MALAYSIA

### Faculty of Food Science and Biotechnology, Universiti Putra Malaysia

#### (was Universiti Pertanian Malaysia)

Address: UPM, 43400 Serdang, Selangor  
Tel.: (60) -3-9486101 (11) ext. 3412  
Fax: (60)- 3-942 3552

Head of organization Prof. Dr Gulam Rasul Rahmat Ali

Type of organization Univ. Dept./Higher Educ.

Responsible Authority Vice Chancellor, Universiti Putra Malaysia

Number of Staff Scientists: 6 Others: 5

Working languages: English, Malay

#### Major field of interest:

Handling: post harvest handling prior to processing  
Processing: Freezing, chilling, filleting  
Species: Finfish, marine and freshwater: Crustaceans; Molluscs; Cephalopods  
Development: Traditional and new fish products; Traditional and new processes; Packaging, Convenience foods and Food Ingredients (gelatine and hydrolysate)  
Quality: Quality control and assurance (chemical, biochemical and microbiological indices); Shelf life; Quality improvement and preservation  
Others: Consultation and training

Present Programmes: 1) Development of minced-based/surimi-based products; 2) Filleted products; 3) Hydrolysate; 4) Fish gelatine; 5) Spoilage and quality; 6) Food safety

#### Working facilities:

Laboratories: Processing (2 locations); engineering, biochemistry, microbiology, sensory and fish lab.  
Others: Pilot plant (2 locations with boiler facilities), walk in cold storage, Test kitchen; library

#### Other training programs:

title	duration	language
Post-graduate training and higher degrees		
Quality control of fish products	2-4 days	Malay/English
processing of minced products and other fish based products	2-5 days	Malay/English
other courses such as sensory are conducted base on request		

## MALAYSIA

### Food Technology Research Centre, Malaysian Agricultural Research and Development Institute (MARDI)

Address: GPO Box 12301, General Post Office, Kuala Lumpur 50774  
Tel.: (60)-3-9437673  
Fax: (60)-3-942.2906  
E-mail: pghft@mardi.my  
Telex: MA37115 MARDI

Head of Organization Director, Mr Abu Bakar Hussin  
Type of Organization Research Institute; Government Dept.; National Authority  
Responsible Authority MARDI, Ministry of Agriculture

Number of Staff: Scientists: 6 Others: 58  
Working Languages: Malay; English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Live Fish and Prawn Transport.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced

#### Products.

Species: Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension.

Present Programmes: Research and Development on Fish Processing and Handling; Product Development; Transportation; Post-harvest.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Quality Control.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room;

#### Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Processing of Fish Ball and Fish Cake	quarterly	3-4 days	Malay
Surimi	quarterly	3-4 days	Malay
General Courses on Quality Control	twice yearly	3-4 days	Malay
Low Acid Canned Foods (with USFDA)	every 2 years	1 week	English
Others:			
Title		Duration	Language
Demonstrations on Processing of Fishery Products		as required	Malay/English
Other Courses		as required	Malay/English
Attachments		up to 1 month	Malay/English

Serial Publications: J. Tropical Agric. & Fd Sc. (twice yearly); Pamphlets on Food Technology (occasional)

**MAURITANIA, ISLAMIC REPUBLIC OF**

**Centre National de Recherches Océanographiques et des Pêches (CNROP)**

Address: Cansado, BP22, Nouadhibou  
Tel.: (222)-745 124  
Mail to: CNROP, BP22, Nouadhibou

Head of Organization General Director, Mohamed M'Bareck Ould Souelim  
Type of Organization Research Centre  
Responsible Authority Ministère des Pêches et de l'Economie Maritime

Working Languages: French

Major Fields of Interest:

Stock Assessment: Cruise surveys (swept methods and acoustic surveys); Modelling; Fisheries Statistics.  
Oceanography: Currents, upwellings, primary production.  
Marine Pollution: Chemistry Analyses, heavy metal pesticides.  
Handling: Onboard; Onshore.  
Processing: Drying; Salting/drying; Fermentation; Smoking; Freezing; Products.  
Species: Crustaceans; Molluscs; Finfish.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Fishery Biology.

Working Facilities:

Laboratories: Chemistry; Biology; Microbiology; Quality Control; Socio-Economics, Fishing Technology; Environment.  
Others: Ice Making Plant; Test Kitchen; Library; Research Vessels (2).

## MEXICO

### Departamento de Investigaciones Científicas y Tecnológicas. Universidad de Sonora

Address: Rosales y Niños Héroes s/n. Hermosillo, Sonora. México 83000  
Tel.: (+52-62)-12.1995  
Fax: (+52-62)-12.3271  
Mail to: Apdo. Postal 1819, Hermosillo, Sonora

Head of Organization Mr. Arturo Villalba Atondo, MSc.  
Type of Organization Research Institute; Univ. Dept./Higher Educ.  
Responsible Authority Rector Jorge Luis Ibarra Mendivil

Number of Staff: Scientists: 40  
Working Languages: Spanish; English

#### Major Fields of Interest:

Handling: Shrimp technology.  
Species: Crustaceans; Molluscs; Algae.  
Others: Nutrition; Consultation; Training; Oceanography; Fish Culture; Fish Biology; Marine Pollution; Coastal Management.

Present Programmes: Shrimp Mariculture Technology; Shrimp Nutrition; Oil from Fish.

#### Working Facilities:

Laboratories: Chemistry; Biology, Population Genetics, Histology; Processing; Biochemistry; Microbiology, Marine Ecology.  
Others: Pilot Plant; Library; Fish Culture Ponds; Larval Culture Facilities.

#### Regular Training Programmes:

Title	Frequency	Duration	Language	
MS in Aquaculture (Emphasis on Crustacean Culture)			2 years	Spanish
Others:				
Title				
Shrimp Culture (Hyperintensive and Intensive Systems)		1-2 months	Spanish	

## MEXICO

### Centro de Investigación en Alimentación y Desarrollo, A.C.

Address: Carretera a la Victoria Km. 0.6, Hermosillo, Sonora  
Tel.: (62) 80-01-46 ; 80-00-10  
Fax: (62) 80-01-46 ; 80-00-55  
E-mail: higuera@cascabel.ciad.mx

Head of Organization General Director, Inocencio Higuera Ciapara, Ph.D.  
Type of Organization Public Research Institute  
Responsible Authority Ministry of Education and National Science Council (Mexico)

Number of Staff: Scientists in this area: 15 Others: 100  
Working Languages: Spanish, English

#### Major Fields of Interest:

Handling: Onboard; Postcatch, Postmortem, Quality Assurance  
Processing: Seafood products, Surimi Technology, New Products Development  
Species: Fish, Crustaceans, Molluscs, and Aquatic Mammals.  
Development: Traditional Fish Products, New Processes  
Quality: Good Manufacturing Practices and Quality Management Systems; HACCP applied to Seafood Industry  
Others: Biochemistry and Technology of Seafood Products; Seafood Industry Extension; Post-mortem Studies of Marine and Freshwater Animal Organisms; Post-catch Handling, Processing and Distribution of Seafood Products; Chemistry of lipid oxidation; Improvement of Protein Functionality by Chemical Means; Services to the Fish Industry; Shrimp Plasma Proteins and their Genes; the Shrimp Defence System; Ecology and Environmental Impact of Food Production; Taxonomy and Biology of Eastern Pacific Fishes; Nutrition and Physiology of Fish and Shrimp; Fishery and Environmental Studies; Chemistry and Primary Production; Cultured Shrimp Bacteriology; Genetic in Aquaculture; Aquatic Pathology; Ecophysiology; and Biodiversity.

Present Programmes: Good Manufacturing Practices and Quality Management Systems; HACCP applied to Seafood Industry; Marine Ecophysiology; Shrimp and Fish Studies, Marine Biodiversity.

#### Work Facilities:

Laboratories: Environmental Management; Chemistry; Biology; Quality Assurance, Processing, Biochemistry, Microbiology; Toxicology; Nutrition  
Others: Pilot Plant, Library, Fish Culture Ponds, Larval Culture Facilities, Web System, etc.

#### Training Programmes:

Title	Duration	Language
Master of Science Program with Emphasis on Nutrition and Food	2 Years	Spanish and English
Ph.D. Program	4 Years	Spanish and English

#### Others:

HACCP Training		Spanish/English
Consultations	1-2 weeks	Spanish/English
Short Training Courses	1-2 weeks	Spanish/English

## MOROCCO

### Institut Agronomique et Vétérinaire Hassan II

Address: Rabat 6202  
Tel.: (212)-7-771.758/771.757/771.745  
Fax: (212)-7-778.110/775.838/778135  
Telex: AGROVET 31873M or 32089M

Head of Organization Director General, Dr Fouad Guessous  
Type of Organization Research Institute; Univ. Dept./Higher Educ.  
Responsible Authority Ministry of Agriculture and Fisheries

Number of Staff: Scientists: 26 for Fisheries and Technology Section  
Working Languages: French; English; Arabic

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration.  
Processing: Drying; Canning; Salting/Drying; Freezing; Fermentation; Minced Products; Smoking; Fish Meal.  
Species: Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and New Packaging; Traditional and New Processes; Traditional and New Equipment; Fisheries Economics.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Improvement of Fish Handling; Fundamentals of Fish Spoilage; Application of HACCP Programmes in Fish Quality Assurance; Optimization of Fish Freezing; Optimization of Fish Canning; Fish Silage.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Degrees in Food Technology/Fisheries	6 years		French
Laboratory Technician	2 years		French
Doctor of Veterinary Medicine	6 years		French

#### Others:

Title	Duration	Language
Fish Processing Technology	2-12 weeks	French/English/Arabic
Fish Quality Assurance	2-12 weeks	

## MOROCCO

### Institut National de Recherche Halieutique (INRH)

Address: 2 Rue de Tiznit, Casablanca  
Tel.: (212)-2-268.870/268.192/276.088/220.249  
Fax: (212)-2-268.857/266.967  
E-mail: sedrati@inrh.org.ma

Head of Organization Mr M'Hammed Sedrati  
Type of Organization Research Institute  
Responsible Authority Ministère des Pêches Maritimes (MPM)

Working Languages: French; Arabic; English

#### Major Fields of Interest:

Development: Value-added Fish Products.

Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance; Hygiene of Fishing Ports.

Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution Studies, Algae Studies, Coral Studies, Shells; Fishing Gear Technology; Ichthyology; Plantonology; Oceanography; Socio Economics of Fish; Mapping of Fishing Ground; Water Quality.

#### Working Facilities:

Laboratories: Chemistry; Biology; Biochemistry; Microbiology; Quality Control; Oceanography; Acoustics; Fish and Plankton Studies.

Others: Library; Research Vessel; Computers; Radio Communications; Sub Fisheries Stations in Major Fishing Ports.

Serial Publications: Bulletin de l'Institut  
Travaux et Documents: possibilité d'échange  
Notes d'Information

## NETHERLANDS

### Landbouw-Economisch Instituut (LEI-DLO) Afdeling Visserij; Agricultural Economics Research Institute, Fisheries Division

Address: Burg. Patijnlaan 19, The Hague 2585 BE  
Tel.: (31)-70-330.8330  
Fax: (31)-70-361.5624  
E-mail: P.Salz@lei.dlo.nl  
Mail to: PO Box 2970, The Hague 2502 LS

Head of Organization Mr P. Salz  
Type of Organization Research Institute  
Responsible Authority Wageningen University Research Center

Number of Staff: Scientists: 10 Others: 6  
Working Languages: Dutch; English

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced  
Products.  
Species: Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Packaging.  
Others: Statistics; Economics; Consultation; Management Information; Institutional  
Analysis; Legal Issues.

Present Programmes: Product Development. Market Analysis.

Working Facilities: Library; Databases; Models.



## **NETHERLANDS**

### **Netherlands Institute for Fisheries Research**

Address: Haringkade 1, IJmuiden 1976 CP  
Tel.: (31)-25-556.4646  
Fax: (31)-25-556.4644  
Mail to: PO Box 68, IJmuiden 1970 AB

Head of Organization Director, Dr P. Hagel  
Type of Organization Research Institute  
Responsible Authority Agricultural Research Department of the Netherlands (DLO-NL)

Number of Staff: Scientists: 55 Others: 90  
Working Languages: Dutch; English; French; Spanish; German

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fish Meal; Processing and Upgrading of Waste Products.  
Species: Fish; Crustaceans; Molluscs; Cephalopods.  
Development: New Fish Products; Traditional and New Processes; New Packaging.  
Quality: Fish Quality Control/Assurance.  
Others: Biochemistry; Consultation; Extension; Fishery Resources; Stock Assessment; Fishery Biology; Fishing Technology; Fish Culture; Marine Pollution; Modelling; Fisheries Economics; Anthropology; Vessel Design; Labour Conditions at Sea and in Industry.

Present Programmes: In all fields of interests.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Food Technology; Logistics; Image Analysis; Electronics.  
Seagoing Vessels: 73m and 28m ships and 2 small inshore ships.

**NETHERLANDS**

**Rijks-Kwaliteitsinstituut voor Land-en Tuinbouwprodukten (RIKILT-DLO)**

**State Institute for Quality Control of Agricultural Products (RIKILT-DLO)**

Address: Wageningen NL 6700 AE  
Tel.: (31)-317-475543  
Fax: (31)-317-417717  
Mail to: PO Box 230, Wageningen NL 6700 AE

Head of Organization Dr R.J. Bogers  
Type of Organization Research Institute, Research and Quality Control Centre  
Responsible Authority Ministry of Agriculture, Nature Management and Fisheries of the Netherlands

Number of Staff: Scientists: 30 Others: 140  
Working Languages: Dutch, English

Present Programmes: Fundamental and Applied Research on Food Quality and Safety. Acting as Supervising and Reference Laboratory for the Inspection of the Quality and Safety of Agricultural Products. Support to Legal Inspection.

Working Facilities:  
Laboratories: Chemistry; Biochemistry; Microbiology; Instrumental Analysis; Toxicology; Microscopy; Histology; Molecular Biochemistry.

## NIGERIA

### Nigerian Institute for Oceanography and Marine Research

Address: 3 Wilmot Point Road, Bar-Beach, Island, Lagos.  
Tel.: (234) -1- 617385; 2617530; 617535; 613903  
Fax: (234) -1- 261730; 619517; 617385  
Cable: OCEANOGRAPH  
Mail to: P.M.B. 12729, Victoria Island Lagos  
E-mail: niomr@hyperia.com; niomr@linkserve.com.ng

Head of Organization: Director, Dr. T.O. Ajayi  
Type of Organization: Research Institute  
Responsible Authority: Federal Ministry of Agriculture

Working Languages: English

#### Major fields of interest:

Handling: Onshore  
Processing: Drying, smoking; canning; chilling; fishmeal, fish silage, fish protein Concentrate (FPC), minced fish based products.  
Species: Pelagics: (Tuna – Yellowfin (*Thunnus albacores*), skipjack (*Katsuwonus pelamis*) Bonga (*Ethmalosa fimbriata*), West African sardinella (*Sardinella maderensis*); West Africa Shad (*Ilisha Africana*). Demersal: Croaker (*Pseudotolithus senegalensis*), Red Snapper (*Lutjanus goreensis*), Threadfin (*Galeoides decadactylus*), Spade fish (*Drepane africana*), Marine Catfish (*Arius heudeloti*).  
Development: New fish products, improved packaging; new processes; new Equipment, Substitution of imported processing and preservation machinery; Fish waste utilization, fish snacks, cakes, cookies, weaning (complimentary) foods using powdered smoked sardinella; Fish discard conversion to street foods.  
Quality: Quality Assurance, Hazard Analysis Critical Control Points (HACCP), Good Manufacturing Practices (GMP)  
Others: Biochemistry; Nutrition, statistics: Economics, Extension services, Fishery Resources; Stock Assessment; Oceanography, Geology/Geophysics, Marine and Lagoon pollution fish culture. Training programme at undergraduate and Post-graduate levels.

Present Programmes: Post Harvest Technology; Utilization of shrimp by-catch to produce value-added products. Improved smoking technology to reduce drudgeries associated with traditional kilns; Kerosine fired fish smoking kilns. Low temperature studies. Pilot plant production of fishery products. Quality control. Loss assessment methodologies

#### Working facilities:

Laboratories: Chemistry, Processing , Biochemistry, Microbiology , Wet Laboratory, Quality Control.

Others: Pilot Plant; Cold storage, Library, Research vessel, Workshop, Fish Culture Ponds.

#### Regular Training Programme

Title	Frequency	Duration	Language
Fish Culture Technology Workshop	3 times/yr.	2 weeks	English
Post-harvest Technology and Fish Utilization Workshop	2 times/yr.	1 week	English

## **NIGERIA**

### **University of Nigeria**

Address: Nsukka, Enugu State  
Tel.: 234-42-771911; 234-42-771920; 234-42-771939  
Fax: 234-42-255026  
E-mail: misunn@aol.com

Head of Department Bhandary, C.S.  
Head of Organization Prof.G.F. Mbanefosh  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Federal Government of Nigeria

Number of Staff: Scientists: 4 Others: 3  
Working Languages: English

#### Major Fields of Interest:

Processing: Drying; Salting/Drying; Smoking; Freezing.  
Development: Traditional and New Fish Products; Traditional and New Packaging; Tradition and New Processes; Traditional and New Equipment.  
Quality: Quality Control/Assurance.

Present Programmes: Processing; Preservation; Evaluation; Quality Control of Fish and Fish Products; Processing; Microbiology; Quality Control; Cold Storage.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
B. Sc. in Food Science and Technology	yearly	5 years	English
M. Sc. in Food Science and Technology	yearly	2 years	English

Serial Publications: FAO Proceedings on Cooperative Network on Fish Technology

## **NORWAY**

### **Norwegian Herring Oil and Meal Industry Research Institute**

Address: Kjerreidviken 16, Fyllingsdalen 5141  
Tel.: (47)-55-501.200  
Fax: (47)-55.501.299  
E-mail: office@ssf.no

Head of Organization Managing Director, Dr Snorre Tilseth  
Type of Organization Research Institute  
Responsible Authority Executive Board

Number of Staff: Scientists: 25 Others: 30  
Working Languages: Norwegian

#### Major Fields of Interest:

Handling: Onboard; Onshore; Bulk Handling and Storage.  
Processing: Drying; Minced Products; Fishmeal; Fish Oil, Refining; Fish Feed.  
Development: Traditional and New Fish Products; Traditional and New Processes.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Consultation; Stock Assessment; Fish Culture.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control.  
Others: Pilot Plant; Cold Storage; Taste Panel Room; Library; Fish Culture Ponds.

## NORWAY

### The Norwegian Institute of Fisheries and Aquaculture Ltd.

Address: Muninbakken 9-13, Breivika (University Campus), Tromsø  
Tel.: (47)-776-29.000  
Fax: (47)-776-29.100  
Mail to: PO Box 2511, Tromsø N-9291  
E-mail: fiskforsk@norut.no  
Website: www.fiskforsk.norut.no

Head of Organization Director General, Mr Ola R Valvaag  
Type of Organization Scientific Research Institute  
Responsible Authority Board of Institute

Number of Staff: Scientists: 70 Others: 30  
Working Languages: Norwegian; English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Bulk Handling and Storage; Capture and Raising of Wild Fish; Live Fish Transport/Holding/Storage.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Freezing; Minced Products; Chilling; Chitin/Chitosan; Fish leather; Fish Oil; Marine Mammal Oil; Fish Proteins; Fish Silage; Irradiation; Surimi; Fat Measuring on Live Fish.  
Species: Fresh Water Fish and Organisms; Marine Fish and Organisms including Marine Mammals.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Equipment; Fish Waste Utilization.  
Quality: Quality Control and Quality Control Assurance in the production of Fish Products; Quality management, Control and Assurance in Production.  
Others: Use of Information Technology in the Fisheries Industry.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Sensory; Fish Health.  
Others: Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Research Vessel; Machine Shop; Pilot Plant for Industrial Technological Equipment; Full Scale Marine Installation/Aquaculture Plant (for trying out Products and Technology under Practical Conditions).

Serial Publications: Annual Reports and semi-monthly newsletters  
Press Releases (Covering Different Activities at the Institute).

## OMAN

### Marine Science and Fisheries Centre

Address: Ministry of Agriculture and Fisheries  
Tel.: (986)-740061-62  
Fax: (968)- 74159  
E-mail: mafcentr@omantel.net.om

Head of Organization: Dr. Abdallah Mohammed Assagheer Omezzine  
Type of Organization: Research Institute  
Number of Staff: Scientists: 21

Working Languages: Arabic, English

Major Field of Interest: Quality control of fisheries product and seafood technology - Mariculture -  
Surveillance of fisheries

Working Facilities: Well-equipped Laboratories: Chemistry; Processing; Quality control

#### Training Programs:

Title:	Frequency	Duration	Language
Fish Processing	not specified	not specified	English
Shrimp culture		Two years	English
Fish ageing		Two months	English

## PERU

### Peruvian Institute of Fish Technology, ITP

Address: Km 5,200 Carretera a Ventanilla, Callao 1  
Tel.: (51-1)-577-0208/577-0908  
Fax: (51-1)-577-0019  
E-Mail: postmast@itp.org.pe  
Website: <http://www.sea.world.com/itp>

Head of Organization President of the Board of Directors, Victor Nishio Nisio  
Type of Organization Research Institute  
Responsible Authority Mr. Ariel Rivas Valencia, Executive Director

Working Languages: Spanish; English; French; German; Japanese

#### Major Fields of Interest:

Handling: Onboard; Onshore; Bulk Handling/Storage; Fresh Fish Transport/Holding/Storage; Chilling.  
Processing: Freezing; Mincing and Surimi Based Products; Salting; Drying; Smoking; Marinates; Canning; Fermentation.  
Species: Fish; Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Frozen Prepared Fish Products; Fish Paste Products; Cured Fish products; Snacks; New Canned products; Fermented Sauces.  
Quality: Fish Inspection; Total Quality Control; HACCP; Sanitation; Microbiological Rapid Methods.  
Others: Nutrition; Marine Pollution; Training and Technology Transfer; Organic Bioconversions; Biological Fish Waste Disposal; Molecular Detection of Pathogens; Applied Molecular Techniques for Aquaculture, Special Meals.

Present Programmes: Technological Transfer to the Industrial Sector, Promotion of Small-Scale Fish Industries; Technical Cooperation Development Programmes among Developing Countries; Food Programmes for Low Income Population; Retortable Pouch for Fish Products; Anchovy Utilization for Human Consumption; Salted Fish Products; Minced Fish Based Products; Baby Food; Molecular Methods of Quality Control; Histamine Detection methods.

#### Working Facilities:

Laboratories: Chemistry; Microbiology; Instrumental; Sensory Assessment.  
Others: Pilot Plant for Canned, Frozen, Paste and Stuffed; Surimi and Retortable Sausage products, Silage Plant, Library; Auditorium.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
International Course of Fishery Technology	yearly	45 days	Spanish
Short courses (various)	monthly	3-5 days	Spanish
Training for Field Extensionists	yearly	20 days	Spanish
Training for Artisanal Fishermen and Processors	monthly	20 days	Spanish

#### Others:

Title	Duration	Language
Individual Training Courses (National and International)		Spanish/English
Training Services		Spanish/English



Serial Publications: Bulletin of the Instituto Tecnológico-Pesquero del Peru (ITP); Technical Notes;  
Commercial Fish Catalogue

## PHILIPPINES

### Bureau of Fisheries and Aquatic Resources

Address: 860 Quezon Avenue, Quezon City 1100  
Tel.: (632)-372-50-57/372-50-43  
Fax: (632)-372-50-48

Head of Organization Director, Mr Malcolm I. Sarmiento, Jr.  
Type of Organization Development and Research Institute  
Responsible Authority Department of Agriculture

Number of Staff: Scientists: 41 Others: 5  
Working Languages: English; Filipino

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Bulk Handling and Storage; Live Fish Transport; Storage.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Processing of Agar from Gracilaria; Chitin/Chitosan; Fish Protein Concentrate; Surimi; Fish Oil; Irradiation of Frozen Prawns and dried Salted Fish; Fish Leather.  
Species: Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment; Marine Biotechnology.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance; HACCP Programme.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Fishing Technology; Fish Culture; Marine Pollution; Fish Chemistry; Microbiology; Marine Natural Products.

Present Programmes: Improvement of Fish Handling Practices; Reduction of Spoilage Losses; Development of Value-added Products; Quality Assurance; Development of Quality Standards and Codes of Practice; Chemical and Microbiological Studies.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology; Quality Control; Cyanide Detection Test (CDT); Post Harvest Technology (Fish Handling, Processing and Product Development); Bioassay for PSP Toxin; Agar Processing; Test Kitchen; Taste Panel Room; Library; Research Vessel; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fish Processing, Chemical and Microbiological Analysis, Product Development and Quality Control	quarterly	1-3 months	English/Filipino
Food Safety and Quality Assurance Program	twice/year		English/Filipino

Serial Publications: Philippine Fisheries Research Journal; Fisheries Newsletter

## PHILIPPINES

### College of Fisheries, University of the Philippines in the Visayas

Address: Miagao, Iloilo 5023  
Tel.: (63)-33-3158143  
Fax: (63)-33-81.534  
E-mail: upv\_cf@iloilo.net

Head of Organization Dean, Leonor M. Santos  
Type of Organization Research Institute; Univ. Dept./Higher Educ.; Government Dept.  
Responsible Authority Chancellor and President of the University

Number of Staff: Scientists: 9 Others: 16  
Working Languages: English; Philippine; Hiligaynon

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fishmeal.  
Species: Fish; Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Processes; New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Fishing Technology; Fish Culture; Marine Pollution; Fish Systematic.

Present Programmes: Academic Programme:  
a) Bachelor of Science in Fish Processing Technology.  
b) Master of Science in Fish Processing Technology.

Working Facilities:  
Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Hatchery Laboratory.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Research Vessel; Machine Shop; Fish Culture Ponds; Walk-in Freezer; Hatchery Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
BSc/MSc in Fish Processing Technology	on-going	not specified	English
Fish Processing Technology-Quality Control		3 weeks	English
Post Harvest Technology-Handling/Quality Control		3 weeks	English

## **PHILIPPINES**

### **Institute of Food Science and Technology**

Address: University of the Philippines at Los Baños, College, Laguna 4031  
Tel.: (63)-94-5363472/5362358  
Fax: (63)-94-5361070  
E-mail: [ecv@mudspring.uplb.edu.ph](mailto:ecv@mudspring.uplb.edu.ph)

Head of Organization: Dr. Ernesto V. Carpio  
Type of Organization: Academic and Research Institute  
Responsible Authority: Chancellor

Number of Staff: Scientists: 9                      Others: 24

#### Major Fields of Interest:

Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Minced Products  
Species: Fish  
Development: Traditional Fish Products; Traditional and New Processes; Fish Dryers  
Quality: Fish Quality Control/Assurance  
Others: Consultation; Training; Extension

#### Working Facilities:

Laboratories: Chemistry; Microbiology; Processing; Quality Control; Engineering  
Others: Pilot Plant; Experimental Kitchen; Taste Panel Room

## PHILIPPINES

### Philippine Council for Aquatic and Marine Research and Development

Address: Los Baños, Laguna

Head of Organization: Executive Director, Dr. Rafael D. Guerrero III

Type of Organization: National Council

Responsible Authority: Department of Science and Technology

Number of Staff: Scientists: 2

Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration.

Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fishmeal; Value-added Products Manufacture.

Species: Fishes; Crustaceans; Molluscs; Cephalopods; Seaweed, Marine Invertebrates

Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging.

Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance; GMP; HACCP

Others: Nutrition; Economics; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Processing; Utilization of Fish Fishery Products; Value-added Products Formulations.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Processing and Utilization of Fish and Fishery Products	on request	1-2 days	English/Filipino

## POLAND

### Sea Fisheries Institute, Fish Processing and Equipment Department

Address: 1 Kollataja Str., Gdynia 81-332  
Tel.: (48)-058-6205.211  
Fax: (48)-058-6202.831  
E-mail: Ztimp@miryb.mir.gdynia.pl

Head of Organization Director, Prof. D. Dutkevia Zygmunt Polanski  
Type of Organization Research Institute  
Responsible Authority Ministry of Transportation and Maritime Economy

Number of Staff: Scientists: 8 Others: 19  
Working Languages: English; Polish

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration.  
Processing: Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fishmeal; Chilling; Chitin/Chitosan; Fish Silage; Marinades.  
Species: Fish; Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment; Fish Waste Utilization; Shelf life.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Consultation; Training; Marine Pollution.

Present Programmes: Containers; Clean Technology in Fish Industry; Quality Assurance; Development in Canning, Smoking and Marinating Processes; Silage; Chitin/Chitosan; Packages.

#### Working Facilities:

Laboratories: Chemistry; Processing; Quality Control; Biopolymers.  
Others: Cold Storage; Test Kitchen; Taste Panel Room; Machine Shop.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Polish Fish Technologists' Conference	yearly	1-2 days	Polish
Scientific Meetings at the Department	6 times/year	3 hours	Polish
Others:			
Title		Duration	Language
Quality Assurance, Quality Management		1 week	English/Polish
HACCP in Fish Industry		1 week	English/Polish
New Developments in Fish Processing		1 week	English/Polish

Serial Publications: Bulletin of the Sea Fisheries Institute

## POLAND

### Technical University of Gdansk, Department of Chemistry and Technology

Address: Gabriela Narutowicza 11/12, Gdansk 80-952  
Tel.: (48)-58-3471.246  
Fax: (48)-58-3472.6941  
E-mail: sikorski@chem.pg.gda.pl

Head of Organization Professor of Technical Sciences, Dr Zdzisław Edmund Sikorski  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Ministry of Education

Number of Staff: Scientists: 8 Technicians: 3 Ph.D. Students: 7  
Working Languages: English; German; Polish; Russian

#### Major Fields of Interest:

Processing: Smoking; Canning; Freezing; Minced Products; Fishmeal; Fish Proteins; Fish Enzymes; Fish silage.  
Species: Baltic Cod; Baltic Herring; Baltic Sprat; Squid; Krill.  
Development: New Fish Products; Traditional and New Processes.  
Quality: Quality Control; Fish Microbiology; PCR Methods for Diagnosis of Pathogenic Bacteria.  
Others: Biochemistry; Consultation; Training; Extension; Unit Operations and Processes in Food Technology.

Present Programmes: Smoking of Fish. Utilization of Fish and Squid Enzymes. Fish Collagen. Krill Chitin/Chitosan. PCR Methods of Diagnosis of Pathogenic Bacteria. Hydrolysates of fish proteins

#### Working Facilities:

Laboratories: Chemistry; Processing; Biochemistry; Microbiology; Quality Control.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Taste Panel Room; Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language	
BS in Food Technology			4 years	Polish
MSc in Food Chemistry and Technology (including Fish Processing)			5 years	Polish
PhD Studies in Food Chemistry		4 years	Polish/English	

## PORTUGAL

### Instituto Portugues de Investigação Maritima (IPIMAR)

#### Portuguese Marine Research Institute

Address: Avenida de Brasilia, Lisboa 1400  
Tel.: (351)-21-302 7000  
Fax: (351)-21-301 5948  
E-mail: [mlnunes@ipimar.pt](mailto:mlnunes@ipimar.pt)

Head of Organization President, Marcelo de Vasconcelos  
Type of Organization Research Institute  
Responsible Authority Ministério da Agricultura, do Desenvolvimento Rural e das Pescas

Number of Staff: Scientists: 70 Others: 130  
Working Languages: English; French; Portuguese

#### Major Fields of Interest:

Handling: Onboard; Onshore; Bulk Handling and Storage.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Surimi; Fish Silage; Fish Hydrolyses; Fish Irradiation; Fish Oil; Fish Proteins; Chitin/Chitosan; Chilling.  
Species: Fish (Anchovies); Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Fish Waste Utilization; Shelf-life.  
Quality: Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Consultation; Training; Extension; Fishery Resources; Stock Assessment;  
Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Technologies of Fish Processing and Biotechnology; Quality Monitoring and Quality Assurance.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Engineering; Biochemistry; Microbiology; Quality Control; Histology; Molecular genetics.  
Others: Library; 4 Research Vessels; Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Fish Culture Ponds, etc.

#### Other training programmes:

Title	Duration	Language
Post Graduate Training Courses for Developing Countries	variable: up to 3 years	Portuguese/ English/French



## ROMANIA

### Department of Fishing and Aquaculture

Address: 63 Garii Street, Galati 6200  
Tel.: (40)-36-415.641/2/3  
Fax: (40)-36-461.353

Head of Organization Prof. Victor Cristea  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority "Dunarea De Jos" University, Galati

Number of Staff: Scientists: 20 Others: 10  
Working Languages: Romanian; English; French

#### Major Fields of Interest:

Aquaculture: Biotechnology, engineering; aquaculture structures, systems, techniques, design; Physiology and Genetics; Reproduction; Early stages of reared species; Growth, nutrition, feed composition; Disease, immunology, stress; Pond ecology; Productivity of aquatic systems.  
Fishing techniques: Selective gears; Static gears.  
Species: Freshwater and marine fish species; Crustaceans, molluscs, algae.  
Fisheries management: Multi-disciplinary approach to fisheries management; Stock assessment; Pond management; Environmental problems and their impact on resources.  
Upgrading of fishery products: Methods for grading and quality assessment of fish.

Present Programmes: Sturgeon culture, cyprinids culture; Fish stock dynamics in the continental waters of Romania; Production of caviar from roe and ovulated oocytes in sturgeon; Fish pathology, histology, haematology; Fisheries management in the Danube river and Danube Delta; Design of fish farms.

Working Facilities: Laboratory facilities/access to fish farms, packing stations, processing plant and consumer groups; Experimental closed recirculating system; Research vessel; Fishing gear for rivers and lakes; Specialized analytical apparatus; Specialized computer hardware; Specialized software; Data bases, extensive libraries.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fisheries Management and Planning	yearly	12 weeks	Romanian, English

Serial Publications: The Annals of "Dunarea de Jos" of Galati "Fishing and Aquaculture" Fascicle VII; APPR Bulletin - Biannual Magazine

## ROMANIA

### Fish Culture Research Station - Nucet

Address: Nucet 0230, Judetul Dambovita  
Tel.: (40)-45-213.704  
Fax: (40)-45-213.704

Head of Organization Director, Mr Florin Nichifor  
Type of Organization Research Institute  
Responsible Authority Academy of Agricultural and Forestry Sciences

Number of Staff: Scientists: 13 Others: 88  
Working Languages: Romanian; English; French

#### Major Fields of Interest:

Handling: Live Fish Transport and Holding (from Fry to Broodfish).  
Species: Common Carp and Other Cyprinids.  
Development: Traditional Fish Products; Traditional Processes; Traditional Equipment.  
Others: Nutrition; Consultation; Fishery Biology; Fishing Technology; Fish Culture.

Present Programmes: Freshwater Fish Culture; Genetic and Improvement of Common Carp Races; Breeding and Rearing Technologies; Nutrition; Applied Freshwater Ecology; Fish Diseases. Introduction of Paddlefish (*Polydon spatula*)

#### Working Facilities:

Laboratories: Chemistry; Biology; Engineering; Biochemistry; Intensive Fish Culture; Selection, Hybridization and Genetic Engineering; Artificial Spawning; Production of Fry and Fingerlings.  
Others: Pilot Plant; Library; Fish Culture Ponds; Hatcheries and Ponds.

## ROMANIA

### Romanian Marine Research Institute

Address: Blvd Mamaia 300, RO-8700 Constanta 3  
Tel.: (40)-41-543.288/540870  
Fax: (40)-41-831.274  
E-mail: ircm@alpha.rmri.ro; rmri@alpha.rmri.ro

Head of Organization Director, Dr Eng. Simion Nicolaev  
Type of Organization Research Institute  
Responsible Authority Ministry of Waters, Forests and Environment Protection

Number of Staff: Scientists: 61 Others: 92  
Working Languages: Romanian; English; French; Russian

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Smoking; Canning; Freezing; Fishmeal.  
Species: Fish; Molluscs; Crustacea.  
Others: Oceanography; Fishery Biology; Fishery Resources; Stock Assessment;  
Biochemistry; Fishing Technology; Statistics; Consultation; Management  
Information; Impact Assessment; Pollution and Protection.

Present Programmes: Continuing research programme on evolution of structure and distribution of Black Sea ichthyofauna, of pelagic fish, dynamics and assessment of exploitable stocks and environmental factor influences. Multi-yearly database on population dynamics of the main pelagic and demersal fish stocks in the East Central, South-east and North-east of Atlantic Ocean and West Indian Ocean.

#### Working Facilities:

Laboratories: Chemistry; Biochemistry; Microbiology; Quality Control; Ecology; Ecological Reconstruction – marine aquaculture; Marine Engineering; Radioactivity.  
Others: Library; Research Vessel; Experimental Base for Marine Aquaculture; Website connection through www server.

## SINGAPORE

### Marine Fisheries Research Department

Address: No.2, Perahu Road, Singapore 718915  
Tel.: (65) 7907973  
Fax: (65) 861-3196  
E-mail: mfrdlibr@pacific.net.sg  
Website: <http://www.seafdec.org/mfrd/Default.htm>

Head of Organization Chief, Mr Sen Min Tan  
Type of Organization Research Institute; Regional Authority  
Responsible Authority Southeast Asian Fisheries Development Center (SEAFDEC)  
Council Directors through Secretary General, SEAFDEC

Number of Staff: Scientists: 16 Others: 8  
Working Languages: English

#### Major Fields of Interest:

Handling: Onshore.  
Processing: Salting/Drying; Smoking; Freezing; Icing; Chilling; Minced Products; Surimi and Surimi Products; Retorting.  
Species: Crustaceans; Molluscs; Cephalopods; Teleosts; Elasmobranchs.  
Development: Traditional and New Fish Products; New Packaging; Traditional and New Processes.  
Quality: Fish Quality Control/Assurance.  
Others: Consultation; Training; Extension; Seafood Safety; Fish Oils.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Product Development.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fish Processing and Packaging	yearly	2 weeks	English
Fish Quality Assessment Methods -Seafood Safety	yearly	2 weeks	English
Fish Quality Assurance-HACCP	yearly	5 days	English

## SOLOMON ISLANDS

### School of Marine and Fisheries Studies

Address: c/o SICHE, Ranadi Campus, PO Box R113, Honiara  
Tel.: (677)-30.686  
Fax: (677)-30.390

Head of Organization Mr Starling Daefa  
Type of Organization Regional Authority; Univ. Dept./Higher Educ.; Research at vocational level  
Responsible Authority Government of Solomon Islands

Number of Staff: Scientists: 3 Others: 1  
Working Languages: English; Melanesian Pidgin

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Smoking; Canning; Freezing; Fishmeal.  
Species: Crustaceans; Molluscs.  
Development: Traditional and New Fish Products; Traditional and New Process; New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Training for National and Inshore Fleets; Rural Community Training; Culture of Giant Clam, Black Lip Oyster for Export.

#### Working Facilities:

Laboratories: Biology; Processing; Engineering; Quality Control.  
Others: Ice Making Plant; Cold Storage; Library; Research Vessel; Machine Shop; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Courses for Skippers and Engineers (Offshore Fishing Vessels)	continuous	2-10 months	*
Local Fisherman's Licence	twice yearly	8 weeks	*
Village Fisheries (Outreach Team)	continuous	2-6 weeks	*

\*English/Pidgin

#### Others:

Title	Duration	Language
Senior Fisheries Officers' Management Course	9 weeks	English
Fisheries Observer Course		English
Aquaculture Course		English

## **SOLOMON ISLANDS**

### **South Pacific Forum Fisheries Agency**

Address: P.O.Box 629, Honiara  
Tel.: (677)-21.124  
Fax: (677)-20.092  
E-mail: Sarahw@ffa.gov.sb (Information Officer)  
Callistam@ffa.gov.sb (Deputy Director's Secretary)  
Telex: (778)HQ66336

Head of Organization Director, Mr Victorio Uherbelau  
Type of Organization Regional Authority  
Responsible Authority 16 SPFFA member countries

Number of Staff: Others: 29  
Working Languages: English

#### **Major Fields of Interest:**

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Smoking; Freezing.  
Species: Crustaceans; Molluscs; Cephalopods.  
Development: New Fish Product; New Processes; New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Statistics; Economics; Consultation; Training; Extension; Stock Assessment; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Legal Issues.

## SOUTH AFRICA

### Fishing Industry Research Institute, FOODTEK, CSIR

Address: 15 Lower Hope St., Rosebank, Cape Town 7700  
Tel.: (27)-21-689.9341  
Fax: (27)-21-686.6116

Head of Organization: Manager, Mr C.D.V. Cardhan  
Type of Organization: Technology Support Services  
Responsible Authority: CSIR Executive

Number of Staff: Scientists: 28 Others: 15  
Working Languages: English; Afrikaans

#### Major Fields of Interest:

Handling: Depuration; Transportation.  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Canning; Freezing; Minced Products; Fishmeal.  
Species: Crustaceans; Molluscs; Cephalopods.  
Development: New Fish Products; New Processes; New Packaging; New Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance; Chemical Analysis; HACCP.  
Others: Biochemistry; Nutrition; Consultation; Training; Toxicological Analyses.

Present Programmes: HACCP implementation in Fishing Industry; Information and Technology Transfer; Shelf life studies and Shelf Life extension; Ultrasonic thawing; Parasites in Fish; Can quality parameters; Survey Evaluation Facility.

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Biochemistry; Microbiology; Analytical.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Library; Machine Shop; Food Technology and Engineering.

#### Regular Training Programmes:

Title	Frequency	Duration	Language*	
A practical approach to HACCP	12/annum	2 days	E/A	
GMP's as the Basics for HACCP	12/annum	1 day	E/A	
SOP and Supplier Audit		2/annum	2 days	E/A
Basic Microbiology	2/annum	1 day	E/A	
Practical Microbiology	1/annum	3 days	E/A	
Hygiene Awareness	30-40/annum	3 hours	E/A/X	
Canning and Canning Principles	1/annum	2 days	E/A	
Retort Operators Training		3/annum	2 days	E/A
HACCP for Floor Workers	2/annum	1 day	E/A	

\* E = English; A = Afrikaans; X = Xhosa

## SPAIN

### Instituto Del Frío

Address: Avda. Ramiro de Maeztu, s/n, Madrid 28040  
Tel.: (34)-1-49.2300  
Fax: (34)-1-549.3627  
E-mail: ifrd399@csic.es

Head of Organization Director, Dra M.Pilar Cano Dolado  
Type of Organization Research Institute  
Responsible Authority Consejo Superior de Investigaciones Científicas

Number of Staff: Scientists:40 Others:44  
Working Languages: Spanish; English; French

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Smoking; Freezing; Minced Products.  
Species: Crustaceans; Molluscs; Cephalopods.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment.  
Quality: Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry.

#### Working Facilities:

Laboratories: Chemistry; Processing; Biochemistry; Microbiology; Quality Control.  
Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room;

Library.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Technology of Fish	yearly	2 weeks	



## SPAIN

### Laboratory of Fishery Products Technology (Tecnología de Productos Pesqueros)

Address: Campus Universitario Sur s/n, Santiago de Compostela (La Coruña) 15706  
Tel.: (34)-981-563.100 ext.13342  
Fax: (34)-981-596.904  
E-mail: [baltppcp@uscmail.usc.es](mailto:baltppcp@uscmail.usc.es)  
Website: <http://www.usc.es/banim/doc/tpp.htm>

Head of Organization: Dr. Cruz Pascual  
Type of Organization: Univ. Dept./Higher Educ.

Working Languages: English; French; Spanish

#### Major Fields of Interest:

Handling: Bulk Handling and Storage; Storage.  
Processing: Salting/Drying; Fermentation; Canning; Freezing; Ripening; Chilling.  
Species: Fish; Molluscs.  
Development: Fish Waste Utilization; Shelf life; Snack Food; Ripening.  
Quality: Fish Inspection; Quality Control.  
Others: Biochemistry; Nutrition; Consultation; Fishing Technology.

#### Working Facilities:

Laboratories: Biology; Biochemistry.  
Others: Taste Panel Room; Library.

#### Other Training Programmes:

Title	Duration:	Language
Technology of Fisheries Products for 4th and 5th year Biology students	80h theory and 50h practical	Spanish

## SRI LANKA

### Sri Lanka Standards Institution

Address: 17, Victoria Place, Elvitigala Mawatha, Colombo - 08.  
Tel.: (94)-1- 671567-72  
Fax: (94)-1- 671579  
E-mail: slsqa@sltnet.lk

Head of Organization C.D.R.A. Jayawardena - Director General  
Type of Organization National Standards Body, Inspection body of fish processing establishments.  
Responsible Authority Ministry of Science and Technology

Number of Staff Scientists: 14 Others: 03

Working Languages English

#### Major Fields of Interest:

Processing Frozen, Fresh, Dried, Salted/Dried, Fermented, Smoked, Canned, Minced Fishery Products;  
Species Fish ; Crustaceans; Molluscs; Cephalopods;  
Development Developing standards on fishery products and related activities  
Quality Fish Inspection; Fish Quality Control/Assurance, Sensory Evaluation; Training on related subjects.

Present Programmes Inspection of fish processing establishments; Mandatory scheme for import inspection of canned fish; Training programmes, seminars and workshops on quality control aspects, GMP's and HACCP.

#### Working Facilities

Laboratories Chemical, Food and Microbiology  
Others Taste Panel Laboratory; Library

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Seminar/Workshop on quality control in fish processing	on request	4 days	English
Workshop on sensory evaluation and grading of shrimps	on request	4 days	English
Seminar on application of HACCP in fish processing industry	3/yearly	3days	English
Seminar on food hygiene		yearly	2 days

English/S

#### Others

Title  
Training programmes on quality management,  
Training programmes on laboratory quality management

## SWEDEN

### SIK - The Swedish Institute for Food and Biotechnology

Address: Frans Perssons vag 6, Göteborg  
Tel.: (46)-31-3355.600  
Fax: (46)-31-833782  
E-mail: info@sik.se  
Website: www.sik.se (in Swedish)  
Mail to: PO Box 5401, Göteborg SE-402 29

Head of Organization: Managing Director, Prof. Kaj Martensson  
Type of Organization: Research Institute, Univ. Dept./Higher Educ.  
Responsible Authority: The SIK Foundation - a Member Association with some 140 Member Companies.

Number of Staff: Scientists: 70                      Others: 50  
Working Languages: Swedish; English

#### Major Fields of Interest:

Processing: Canning; Freezing and Thawing; Minced Products; Food Chemistry and Technology in General.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment; Shelf life.  
Quality: Quality Control.  
Others: Biochemistry; Consultation; Training; Biotechnology; Hygiene and Safety.

Present Programmes: Microbiological product safety; Controlled structure formation; Control of the product flavour and flavour stability; Control of the sensory qualities of food according to the demands and wishes of the consumer; Food processes which affect structure and microbiological safety; Environmental effects of the food system; Applications of biotechnology.

#### Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Biochemistry; Microbiology; Sensory Analysis; Packaging; Biophysics (Structure of Food).  
Others: Cold Storage; Test Kitchen; Taste Panel Room; Library.

Serial Publications: SIK-Publikation; SIK-Report; Sik Dokument.

**THAILAND**

**Dept. of Biotechnology, Faculty of Science, Mahidol University**

Address: Rama VI Rd., Bangkok 10400  
Tel.: (66)-2-245.5650  
Fax: (66)-2-246.3026  
Telex: 84770 UNIMAHITH  
Cable: SCIMAHIDOL

Head of Organization Dr Apinya Assavanig  
Type of Organization Academic and Research (at University level)  
Responsible Authority Prof. Athasit Vejajiva, President of Mahidol University

Number of Staff: 22 Associated Staff: 8  
Working Languages: Thai and English

Major Fields of Interest: Biotechnology including genetic engineering; Bioprocess Engineering and Fermentation; Technology, Industrial Microbiology, Plant Biotechnology and Food Biotechnology

Examples of Research: Processing and Development; Traditional Fish Sauce Fermentation; Process and Micro-organisms.

Present Programmes: B.Sc., M.S. and Ph.D. in Biotechnology

Working Facilities:

Laboratories: Genetic Engineering, Microbiology; Chemistry; Processing; Fermentation; Quality Control and Sensory Evaluation

Others: Pilot Plant; Library.

## THAILAND

### Dept. of Fishery Products, Faculty of Fisheries, Kasetsart University

Address: 50 Phaholyothin Rd. Chatuchak, Bangkok 10900, Thailand  
Tel.: (66)-2-579.5577; 942-8644-5  
Fax: (66)-2-579.5579; 942-8363  
E-mail: fishwow@nontri.ku.ac.th

Head of Organization Dr Wanchai Worawattanamateekul  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Ministry of University Affairs

Number of Staff: Scientists: 13 Others: 4  
Working Languages: Thai; English

#### Major Fields of Interest:

Processing: Drying; Salting/Drying; Fermentation; Canning; Value-added Products; Smoking; Freezing; Minced Products; Fishmeal; Fish Oil; By-products and Waste Management.  
Species: Fishes; Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Packaging; Waste Utilization; Snack Food.  
Quality: Fish Inspection; Quality Control/Assurance; Risk Management.  
Others: Consultations; Training; Extension.

Present Programmes: Teaching at BS and MS Levels; Research and Development in New Fishery Products; Processing; Fish Microbiology.

#### Working Facilities:

Laboratories: Chemistry; Processing; Microbiology; Biotechnology; Physical Property Testing Lab.  
Others: Test Kitchen; Library; Pilot Plant; Cold Storage; Test Panel Room.

#### Regular Training Programmes:

Title	Frequency	Duration	Language	
BS		yearly	4 yrs	Thai
MS	yearly	2 yrs	Thai/English	
Ph.D.	yearly	3 yrs	Thai/English	

#### Others:

Title	Duration	Language
Fishery Post-Harvest Technology	2-10 weeks	Thai/English
Fish processing and Quality Control	2-10 weeks	Thai/English
Application of HACCP in Fishery Industry	3-5 days	Thai/English

## THAILAND

### Fish Inspection and Quality Control Division

Address Kasetsart University Campus, Paholyothin Road, Chatuchak, Bangkok 10900  
Tel.: 66 2 5798078, 5796915  
Fax: 66 2 5796687  
E-mail: fiqd@fisheries.go.th; montri@fisheries.go.th

Head of Organisation Director, Mr. Montri Klitsaneephaiboon  
Type of Organisation Government Department  
Responsible Authority Department of Fisheries, Ministry of Agriculture and Cooperatives

Number of Staff Scientists: 60 Others: 90  
Working Languages Thai, English

Major Fields of Interest  
Quality Fish inspection, quality control, quality assurance, HACCP, laboratory accreditation, interlaboratory collaboration, ISO 9000, ISO/IEC Guide 25 or ISO 17025  
Others Training, inspection agreement, research

Working Facilities  
Laboratories Chemical, Microbiological and Physical and sensory examinations  
Others Taste Panel Room

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Principles and application of HACCP/ HACCP audit	twice a yr.	5-10 days	Thai/English
Quality assurance in fish inspection laboratory	Yearly	5 days	Thai/English
Sensory evaluation for fishery products Thai/English	Yearly	3-5 days	Thai/English
Laboratory analysis for fishery products	Yearly	3-5 days	Thai/English
Others			
Container Integrity		3 days	Thai/English
Retort supervisor training			4 days
Processing establishment and validation		3 days	Thai/English

Thai/Eng

## THAILAND

### Faculty of Agro-Industry, Prince of Songkla University

Address: Hat-Yai Campus, Hat-Yai 90110  
Tel.: (66)-74-212.889  
Fax: (66)-74-212.889  
E-mail: sopairat@ratree.psu.ac.th

Head of Organization Assistant Professor, Dr Pairat Sophanodora  
Type of Organization Research Institute; Univ. Dept./Higher Educ.  
Responsible Authority Ministry of University Affairs

Number of Staff: Scientists: 30 Others: 7  
Working Languages: Thai

#### Major Fields of Interest:

Processing: Drying; Salting; Fermentation; Smoking; Canning; Freezing; Minced Products; Value-added Products; Waste Utilization; Chitin/Chitosan; Fish Oil, Fish Hydrolysate.  
Species: Finfish-Pelagic Demersal; Crustaceans; Molluscs; Cephalopods; Algae.  
Development: Traditional and New Fish Products; Traditional and new Processes; Traditional Packaging; Fish Waste Utilization; Snack Foods; Surimi-based Products.  
Quality: Fish Quality Control/Assurance; Shelf-life extension of Fish; Improvement of Surimi Quality.  
Others: Biochemistry; Nutrition; Marine Biotechnology; Fish Enzymes; Nutraceutical Products.

Present Programmes: BSc, MSc and Ph.D. Courses.

#### Working Facilities:

Laboratories: Fish Chemistry and Biochemistry Lab.; Fishery Products Technology Lab.; Food Analysis Lab.; Food Microbiology Lab.; Food Processing Lab.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Sensory Evaluation Room; Physical Property Testing Lab.; Quality Control Lab.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
BSc Course	yearly	4 years	Thai
MSc Course	yearly	2 years	Thai/English
Ph.D. Course	yearly	3 years	Thai/English
Workshops/Seminars	yearly	2-5 days	Thai/English

## THAILAND

### Fishery Technological Development Institute

Address: Department of Fisheries, Kaset-Klang, Chatuchak, Bangkok 10900  
Tel.: (662) 940 6130-45  
Fax: (662) 940 6200  
E-mail: pensrib@fisheries.go.th  
Director: Mrs. Pensri Boonruang

The Fishery Technological Development Institute (FTDI) of the Department of Fisheries, Ministry of Agriculture and Cooperatives is organized as follows:

- (1) General Administration Subdivision;
- (2) Technical Unit;
- (3) Fish Handling and Preservation Unit;
- (4) Fish Processing and Product Development Unit;
- (5) Fish Packaging Development Unit;
- (6) Aquatic Biotechnology Unit;
- (7) Fish Process Engineering Unit.

Roles and responsibilities (by Unit)

#### **Technical Unit:**

Coordinate special research projects within the Institute and with international agencies  
Coordinate research projects, planning and policy of the Institute  
Coordinate the organization of training courses for university students and private sectors  
Compile research information from both inside and outside the Institute  
Set up research information network  
Head: Miss Preeda Methatip, e-mail: preedam@fisheries.go.th

#### **Fish Handling and Preservation Unit:**

Develop handling technology to prolong shelf life of aquatic animals after harvest  
Develop economic methods for fish handling at sea, on shore, transportation and distribution system  
Develop technology to maintain freshness and improve hygiene after harvest  
Develop shellfish depuration and product safety assurance  
Conduct research on chemical contaminants in fresh and frozen products  
Head: Mrs. Niracha Wongchinda, e-mail: nirachaw@fisheries.go.th

#### **Fish Processing and Product Development Unit:**

Introduce modern and appropriate technology to the traditional product processors  
Improve the quality of both traditional products and processing establishments  
Conduct research on harmful chemical contaminants and food additive residues  
Develop various value-added and convenient products  
Improve utilization of low-cost fish species  
Head: Dr. Jirawan Yamprayoon, e-mail: jirawany@fisheries.go.th

#### **Fish Packaging Development Unit:**

Conduct research on packaging type, form and material for fish and fishery products  
Develop appropriate and economical packaging techniques  
Provide technical service on thermal process determination  
Head: Mrs. Remgrudee Pruthiarenun, e-mail: remgrup@fisheries.go.th

#### **Aquatic Biotechnology Unit:**

Utilize fish industrial waste or by-product for human consumption and various applications  
Utilize micro-organisms and/or their enzymes in fishery industry  
Conduct research on bioactive metabolites obtained from aquatic organisms useful for various fields



Survey and monitor biotoxins and related substances in aquatic animals as food safety control  
Head: Dr. Attaya Kungsuwan, e-mail: attayak@fisheries.go.th

**Fish Process Engineering Unit:**

Promote mechanization in fish landing, handling, processing and transportation

Develop and design small-scale equipment for fish processing

Head: Mr. Cherd-sak Suthijit, Tel.: 662-579 7157

**Other Activities**

Cooperate with international agencies e.g. Japan International Cooperation Agency (JICA) with the Research Project on Quality Development of Fishery Product (1994 – 1998)

Provide training courses on fish post-harvest technology for local and international participants

Provide advisory services to the industries on problems related to fishery technology

Scientists: - permanent 20; - temporary 8

## TRINIDAD AND TOBAGO

### Caribbean Fisheries Training and Development Institute

Address: Western Main Road, Chaguaramas, Port of Spain  
Tel.: (868)-634.4276/4587  
Fax: (868)-634.4405  
Mail to: PO Box 1150, Port of Spain  
E-mail: eftdi@00w.net

Head of Organization Principal, Mr Selwyn Brooks  
Type of Organization Maritime Training Institute  
Responsible Authority Ministry of Agriculture, Land and Marine Resources

Number of Staff: Professional: 4                      Technical: 6      Others: 37  
Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Drying; Salting/Drying; Smoking; Marinades.  
Species: Crustaceans.  
Development: New and Traditional Products; New and Traditional Processes; New and Traditional Packaging; New and Traditional Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Consultation; Training; Extension; Stock Assessment; Fishing Technology.

#### Working Facilities:

Laboratories: Processing; Engineering; Quality Control.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Research Vessel; Machine Shop; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Training for Seafarers (7 different courses)	on-going	2-10 weeks	English
Fish and Fishing Technology	on-going	2-10 weeks	English

## TUNISIA

### Institut National des Sciences et Technologies de la Mer: INSTM

Address: 28 Rue de 2 Mars 1934, Salamambo 2025  
Tel.: (216)-1-730.548  
Fax: (216)-1-732.622  
E-mail: amor.elabed@instm.mrt.tn

Head of Organization Professor/Director General, Dr Amor El Abed  
Type of Organization Research Institute; Government Dept.  
Responsible Authority Secrétariat d'Etat à la Recherche Scientifique et à la Technologie

Number of Staff: Scientists: 70 Others: 134  
Working Languages: Arabic; English; French

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Live Fish Transport/Holding/Storage.  
Processing: Fish Proteins; Fish Oil.  
Species: Crustaceans; Molluscs; Algae.  
Development: Traditional and New Fish Products; Traditional and New Processes; Fish Waste Utilization.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Training; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Quality Assurance - Pollution (Heavy Metals, Pesticides, Microbiology).  
Biochemical Composition.

#### Working Facilities:

Laboratories: Chemistry; Biology; Engineering; Biochemistry; Microbiology; Quality Control;  
Pathology.  
Others: Library; Research Vessel; Fish Culture Ponds.

## TURKEY

### Ataturk University Fisheries Department

Address: Agriculture Faculty, Atatürk University, Erzurum 25240  
Tel.: (90)-422-218.4120, 2566

Head of Organization Prof. Dr M. Sitki Aras  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Prof. Dr M. Sitki Aras

Number of Staff: Scientists: 4 Others: 2  
Working Languages: Turkish; English; German

#### Major Fields of Interest:

Processing: Drying; Salting/Drying; Freezing.  
Development: New Fish Products.  
Quality: Fish Inspection.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension;  
Fishery Resources; Stock Assessment; Oceanography; Fishery Biology;  
Management Information; Fishing Technology; Fish Culture.

Present Programmes: Determination of Pre- and Post- Mortem Chemical Changes of Fish Meat after Handling.

#### Working Facilities:

Laboratories: Biology; Biochemistry.  
Others: Cold Storage; Test Kitchen; Taste Panel Room; Library; Fish Culture Ponds.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Advances in Fish Technology	yearly	one semester	Turkish
Oceanography	yearly	one semester	Turkish
Fish Culture	yearly	one semester	Turkish
Fish Biology	yearly	one semester	Turkish

Serial Publications: Aquaculture Journal of the Doga

## TURKEY

### Beymelek Aquaculture and Development Center

Address: Beymelek Kale-Antalya  
Tel.: +90 242 8721400-1401-1402  
Fax: +90 242 8721405

Head of Organization Mr. Faruk Coşkun  
Type of Organization Aquacultural Production and Training Center  
Responsible Authority General Directorate of Agricultural Production and Development

Number of Staff: Scientists: 12 Others: 25  
Working Languages: Turkish

#### Major Fields of Interest:

Handling: Transferring the new technology for fish farming; Research and Development;  
Developing Lagoon System: Training.

Development: Production of Sea bass and sea bream; Live food production; Training about fisheries.

Present Programme: Fingerling production.

#### Working Facilities:

Laboratories: Chemistry; Microbiology; biochemistry; disease lab being set up

Others: Training Centre Building (for 115 people); Hatcheries; Ponds (total area 10122 m2).

**TURKEY**

**Department of Fishing and Processing Technology**

Address: Sinop Fisheries Faculty, Sinop 57000  
Fax: (90)-3761-2876255

Head of Organization Professor, Dr Ibrahim Erkoyuncu  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Dean, Sinop Fisheries Faculty

Number of Staff: Scientists: 5 Others: 5  
Working Languages: Turkish

Major Fields of Interest:

Processing: Salting/Drying; Smoking; Canning; Freezing.  
Development: Traditional Processes.  
Others: Stock Assessment; Fishery Biology; Management Information; Fishing Technology.

Working Facilities:

Laboratories: Chemistry; Biology; Processing.  
Others: Cold Storage; Library; Research Vessel.

Other Training Programmes:

Title	Duration	Language
Diving	10 days	not specified

## TURKEY

### Ege University, Faculty of Fisheries

Address: Ege University Faculty of Fisheries Bornova, Izmir 35100  
Tel.: (90)-232-752.1162/388.3225  
Fax: (90)-232-388.3685

Head of Organization Dean, Prof. Dr Atilla Alpbaz  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Prof. Dr Atilla Alpbaz

Number of Staff: Scientists: 3 Others: 2  
Working Languages: English; German

#### Major Fields of Interest:

Handling: Onshore.  
Processing: Salting/Drying; Smoking; Freezing; Minced Products.  
Species: Crustaceans; Molluscs; Cephalopods.  
Development: Traditional Fish Products; Traditional Processes; Traditional Packaging; Traditional Equipment.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Statistics; Economics; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Seafood Processing Technology and Quality Control.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Microbiology; Quality Control; Aquaculture; Fish Food; Phytoplankton.  
Others: Cold Storage; Taste Panel Room; Library; Research Vessel; Fish Culture Ponds.

## **TURKEY**

### **Egirdir Fisheries Research Institute – Inland Water**

Address: Su Ürünleri Arastirma Enstitüüsü Müdürlüğü  
Köprübasi 32500 ISPARTA

Tel.: +90 246 3123090

Fax: +90 246 3123559

Head of Organization Mr Mahmut Akyürek

Type of Organization Research Institute

Number of Staff: Scientists: 19

Working Languages: Turkish.

#### Major Fields of Interest:

Handling: Developing Inland Aquaculture

Others: Fishery Resources; Fishery Biology; Fish Culture; Stock Assessment.

#### Working Facilities:

Laboratories: Chemistry; Biology.

Other: Library, Research vessel, hatchery, floating cages.



## **TURKEY**

### **Kepez Inland Aquaculture Station**

Address: Kepez-07100 Antalya  
Tel.: +90 242 3326801  
Fax: +90 242 3326700  
Mail to: P.K. 190

Head of Organization: Mr. Cemil Ünal  
Type of Organization: Inland Aquaculture and Training Center  
Responsible Authority: General Directorate of Agricultural Production and Development

Number of Staff: Scientists: 27                      Others: 46

Working Language: Turkish

Major Fields of Interest:

Handling: Egg and fingerling production of mirror carp, trout and ornamental fish.

Present Programme: Fingerling Production.

Working Facilities:

Laboratories: Quality Control.

Others: Library; Fish Culture Ponds; Hatcheries; Fish culture cages; Fish culture tanks.

## **TURKEY**

### **Ministry of Agriculture Fisheries Research Institute**

Address: Paşatarla Cad. No:1, 48400 Bodrum-Muğla  
Tel.: +90 252 3162491-3161143-3161402  
Fax: +90 252 3162492

Head of Organization: Mr. Nezh Bilecik

Type of Organization: Research Institute  
Responsible Authority: General Directorate of Agricultural Research, Fisheries Department

Number of Staff: Scientists: 14

Working Language: Turkish

#### Major Fields of Interest:

Handling: Onboard; Onshore, Aquaculture (Marine species)  
Development: Sea bass and sea bream culture, fingerling production, sponge researches.

Present Programmes: Nutrition; diseases; fish culture; marine pollution and fishery biology and photoperiod research for egg production.

#### Working Facilities:

Laboratories: Chemistry, microbiology, biochemistry.  
Others: Research Vessel.

## TURKEY

### Trabzon Fisheries Research Institute

Address: Yomra-61250 Trabzon  
Tel.: +90 462 3411051  
Fax: +90 462 3411056  
Mail to: P.K. 129

Head of Organization: Mr. Yilmaz Bekiroğlu  
Type of Organization: Research Institute  
Responsible Authority: General Directorate of Agricultural Research

Number of Staff: Scientists: 11                      Others: 6  
Working Languages: Turkish

#### Major Fields of Interest:

Handling: Onboard; onshore  
Development: Traditional Fish Products, Traditional Equipment  
Quality: Fish inspection; Quality control; Fish Quality Control/Assurance  
Others: Nutrition, statistics, economics, training, extension, fishery resources, stock assessment, oceanography, fishery biology, fish culture, marine pollution

Present programmes: Forming of *Onchoryncus mixis*; Floating cage models for the Black Sea; Stock Assessment; Fishery Resources.

#### Working Facilities:

Laboratories: Chemistry; Biology; Engineering; Biochemistry; Microbiology.  
Others: Library; Research Vessel; Fish Culture Ponds.

Present Programme: Fingerling Production

#### Working Facilities:

Laboratories: Quality Control.  
Others: Library; Fish Culture Ponds; Hatcheries; Fish Culture cages, Fish culture tanks.

## TURKEY

### University of Ankara, Faculty of Agriculture, Department of Fisheries

Address: Ankara 06110-Diskapi  
Tel.: (90)-312-317.0550 ext. 1438  
Fax: (90)-312-318.5298

Head of Organization: Prof. Dr. Dogan Atay  
Type of Organization: Univ. Dept./Higher Educ.  
Responsible Authority: Dean of Faculty

Number of Staff: Scientists: 16 Others: 7  
Working Languages: Turkish

#### Major Fields of Interest:

Processing: Smoking  
Species: Rainbow Trout; Carp  
Others: Training; Fish Culture

#### Working Facilities:

Laboratories: Chemistry; Biology; Plankton Lab.; 2 Fish Farming and Research Stations.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fish Processing	yearly	3 hrs/wk/ semester	Turkish

**UGANDA**

**Food Science and Technology Research Institute (FOSRI)**

**(Incorporating Formerly Fish Technology Laboratory)**

Address: Nakawa Industrial Area, off Kampala/Jinja Road, Kampala  
Fax: 256-41-222657  
Mail to: P O Box 7852, Kampala

Head of Organization Director  
Type of Organization Research Institute  
Responsible Authority Director General, National Agricultural Research Organisation (NARO)

Number of Staff: Scientists: 7 Others: 9  
Working Languages: English

Major Fields of Interest:

Handling: Onboard; Onshore.  
Processing: Freezing; Minced Products; Smoking; Chilling; Sundrying.  
Development: New Fish Products; New Packaging.  
Quality: Fish inspection; Fish Quality Control/Assurance.  
Others: Biochemistry; Nutrition; Consultation.

Present Programmes: Fish Quality Improvement Studies; Effect of Size, Season, Fishing Ground and Processing on the Keeping Quality and Nutritive Value of Nile Perch; Product Development using By-products of Industrial Processing and under-utilized species.

Working Facilities:

Laboratories: Chemistry; Processing; Biochemistry; Microbiology; Quality Control.  
Others: Library.

Serial Publications: Uganda Journal of Agricultural Sciences  
African Journal of Hydrobiology and Fisheries

**UNITED KINGDOM**

**Department of Agriculture for Northern Ireland, Aquatic Systems Group**

Address: Newforge Lane, Belfast BT9 5PX  
Tel.: 44-1232-255.236  
Fax: 44-1232-382.244

Head of Organization Head, Dr S.I. Heaney  
Type of Organization Research Institute; Government Dept.  
Responsible Authority Department of Agriculture (NI) - UK Government

Number of Staff: Scientists: 10 Others: 14  
Working Languages: English

Major Fields of Interest:

Species: Finfish; Crustaceans; Molluscs.  
Others: Fishery Resources; Stock Assessment; Oceanography; Fishery Biology;  
Management Information; Marine Pollution.

Present Programmes: Fish Stock Assessment and Management; Restoration of Freshwater Fisheries;  
Biological Oceanography and Fisheries and Multispecies Modelling.

Working Facilities:

Laboratories: Chemistry; Biology.  
Others: Library; Research Vessel.

## UNITED KINGDOM

### Leatherhead Food Research Association

Address: Randalls Road, Leatherhead KT22 7RY  
Tel.: 44-372-376.761  
Fax: 44-372-386.228  
E-mail: lwoods@lfra.co.uk  
Telex: 929 846

Head of Organization Director, Dr Mark Kierstan  
Type of Organization Research Institute  
Responsible Authority Membership/Funding Body for Individual Contract

Number of Staff: Scientists: 20 Others: 5  
Working Languages: English

#### Major Fields of Interest:

Development: New Packaging; Preservation; Lactic Acid Bacteria.  
Quality: Fish Inspection; Fish Quality Control/Assurance.  
Others: Biochemistry; Consultation; Agar/Alginate/Carrageenin; Chitin/Chitosan; Fish Oils; Protein Functionality; Shelf life.

Present Programmes: Packaging; Microbiology; Smoked Fish.

#### Working Facilities:

Laboratories: Processing; Engineering; Microbiology; Chemistry.  
Others: Pilot Plant; Cold Storage; Test Kitchen; Sensory Analysis; Library; Packaging;  
Smoking.

**UNITED KINGDOM**

**Loughborough University of Technology, Department of Chemical Engineering**

Address: Ashby Rd., Loughborough LE11 3TU  
Tel.: 44-1509-222.517  
Fax: 44-1509-223.923  
E-mail: g.m.hall@lboro.ac.uk

Head of Organization Dr George Michael Hall, Senior Lecturer  
Type of Organization Univ. Dept./Higher Educ.  
Responsible Authority Head of Department of Chemical Engineering

Number of Staff: Scientists: 3 Others: 1  
Working Languages: English; French; Malay

Major Fields of Interest:

Processing: Lactic Acid Fermentation; Fish Meal; Fish Waste Recovery, Crustacean Waste Utilization; Chitin/Chitosan; Fish Silage  
Species: Algae; Penaeid; Nethrops.  
Development: Crustacean Protein Hydrolysates; Aquaculture Feeds; New and Traditional Processes; Filtration Processes for Fish Processing; Wastewater Recovery.  
Others: Biochemistry; Product Recovery.

Present Programmes: GEC "FAR" Programme; Lactic Acid Fermentation for Preservation of Fish and Fish Products.

Working Facilities:

Laboratories: Chemistry; Processing; Engineering; Biochemistry; Microbiology.  
Others: Pilot Plant; Library; Machine Shop.



## UNITED KINGDOM

### Natural Resources Institute

Address: Medway University Campus, Central Avenue, Chatham Maritime, Kent ME4 4TB  
Tel.: 44-1634-880088  
Fax: 44-1634-880066/77  
E-mail: B.F.Blake@greenwich.ac.uk  
Website: <http://www.nri.org>

Head of Organization Director, Professor John Perfect  
Type of Organization University Institute  
Responsible Authority University of Greenwich

Number of Staff: Scientists: 8 (specialising in fisheries and aquatic resources) plus food safety specialists, marketing economists, social scientists and support staff

Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Chilling; Icing; Ice box production and design Depuration.;  
Processing: Drying; Salting/Drying; Fermentation; Smoking; Freezing.  
Development: Traditional and New Fish Products; Traditional and New Processes; Traditional and New Equipment. Market development; factory design; small and medium enterprise development and training  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance. Import/Export requirements; HACCP; ISO 9000.  
Others: Post-Harvest Strategic Research; Biochemistry; Statistics; Economics; Consultation; Training; Extension; Management Information. Participatory development of Coastal Communities. Participatory Rural Appraisal; Coastal Area Management; Coastal Resources; Fishery Resources; Fishery Biology; Integrated development of coastal areas; watershed management;

Present Programmes: Wide Range of DFID, Multilateral Work and contract work. Support unit for International Fisheries and Aquatic Research, Post Harvest Fish loss assessment methodologies, Fish licensing agreements, TRAINFISH Network Institution.

#### Working Facilities:

Laboratories: Chemistry; Microbiology; Quality Control  
Others: Fish Handling room; Library; Small Scale Ice making and Smokers; limited pilot scale facilities; training and lecture rooms

Training Programmes tailored to particular needs - for example:

Title	Frequency	Duration	Language	
Handling and Quality of Fish in the Tropics	on demand	up to 3 months	English	
Food Safety and HACCP		on demand	variable	English

## UNITED KINGDOM

### Sea Fish Industry Authority, Seafish Technology

Address: Seafish House, St. Andrew's Quay, Hull, N. Humberside HU3 4QE  
Tel.: (44)-1482-327.837  
Fax: (44)-1482-223.310  
E-mail: J-Dorset@Seafish.demon.co.UK  
Telex: 597 261

Head of Organization: Technical Director, Mr. John Edward Tumilty  
Type of Organization: Public Research Institute  
Responsible Authority: Seafish Board and MAFF

Number of Staff: Scientists: 30                      Others: 14  
Working Languages: English

#### Major Fields of Interest:

Handling: Onboard; Onshore; Depuration; Transportation; Purification; Bulk Handling and Storage; Live Fish Transport/Storage/Holding.  
Processing: Smoking; Freezing; Minced Products; Fishmeal; Chilling.  
Species: Finfish (Demersal and Pelagic); Crustaceans; Molluscs; Cephalopods.  
Development: New Fish Products; Traditional and New Processes; Traditional and New Packaging; Traditional and New Equipment; Fish Waste Utilization; Shelf life.  
Quality: Fish Inspection; Quality Control; Fish Quality Control/Assurance.  
Others: Nutrition; Statistics; Economics; Consultation; Training; Fishery Resources; Management Information; Fishing Technology; Fish Culture; Marine Pollution; Fishing Gear and Methods: Selectivity, Conservation, Impact of Towed and Static Gear.

#### Working Facilities:

Laboratories: Processing; Engineering; Quality Control.  
Others: Ice Making Plant; Cold Storage; Test Kitchen; Taste Panel Room; Library; Machine Shop; Flume Tank

Serial Publications: Seafish Technical Reports; Trade Press

**UNITED KINGDOM**

**Sea Fish Industry Authority, Seafish Training and Standards**

Address: Seafish House, St Andrew's Dock, Hull, East Yorkshire HU3 4QE

Head of Organization Training Director, Mr Kenneth D. Waind

Type of Organization National and Standard Training Organization

Responsible Authority Seafish Board, MAFF and Department for Education and Employment

Number of Staff: Scientists: 15 Others: 4

Working Languages: English

Major Fields of Interest:

Handling: Safety Training; Catching Techniques; Fish Handling.

Processing: Hygiene Training; Processing Skills; Quality.

Development: Occupational Standards and Vocational Qualifications, Training Programmes and Materials, Open Learning and Careers Literature for Fish Catching, Processing, Retailing and Frying; Training Programmes and Training Materials for Fish Catching, Processing, Retailing and Frying; Small Boat Safety and Fishing Gear Technology.

Others: Hygiene Training, Customer Care and Fish Preparation; Training in Industry through a National Network of Group Training Associations.

Working Facilities: Fisheries Training Centre; Multimedia Computing; Desk Top Publishing.

Serial Publications: Open Learning Modules; Training Manuals; Training Videos

## UNITED KINGDOM

### The University of Hull Institute of Food Health Quality

Address: Cottingham Road, Hull HU6 7RX  
Tel/Fax: 44-1482-466.421  
E-mail: M.Flint@biosci.hull.ac.uk

Head of Organization Institute Director, Dr D.A. Palfreman  
Type of Organization Research Institute; University Department; Consultancy  
Responsible Authority The University of Hull

Number of Staff: Scientists: 3 Others: 2  
Working Languages: English; French

#### Major Fields of Interest:

Processing: Drying; Curing; Smoking; salting; canning; freezing; fermentation.  
Packaging: MAP and irradiation.  
Quality and  
Safety Assurance: indicators of spoilage; TMA/TMAO; HACCP implementation; traceability; hygienic design of premises and equipment; sensory analysis evaluation.  
Others: Project management, economics, nutrition and food science, Biochemistry; sensory analysis and training.

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Full Time MSc/Postgraduate Diploma in Food Standards Science	yearly	12 months	English
Part time MSc/Post Graduate Diploma	anytime	max. 5 yrs	English
Short Course Project Planning and Management including HACCP	yearly May	5 weeks	English

**UNITED STATES OF AMERICA**

**Northeast Fisheries Science Center**

Address: 166 Water Street, Woods Hole, Massachusetts 02543-1097  
Tel.: 1-508-495-2000  
Fax: 1-508-495-2258

Head of Organization Dr Michael P. Sissenwine  
Type of Organization Research Institute; Government Dept.  
Responsible Authority National Marine Fisheries Service (NMFS), Northeast Region,  
National Oceanic and Atmospheric Administration (NOAA), U.S. Department of  
Commerce.

Number of Staff: Scientists: 200 Others: 60  
Working Languages: English

Major Fields of Interest:

Species: Commercially and/or ecologically important marine fish and shellfish;  
phytoplankton and ichthyoplankton; whales, cetaceans and some pinnipeds.  
Other: Definition and study of large marine ecosystems; marine fishery monitoring and  
analysis; marine ecosystem processes, monitoring and analysis; evaluation and  
assessment of living marine resources; marine aquaculture; biotechnology;  
systematics and taxonomy of marine fishes, cephalopods, molluscs and  
crustaceans.

Present Programmes: Behavioural ecology, oceanography, coastal ecology, marine chemistry, marine  
fisheries sampling, marine ecosystems surveys, marine population biology and stock  
dynamics, marine protected species, social sciences, marine culture systems,  
marine habitat evaluation, biotechnology, systematics, taxonomy.

Working Facilities: Woods Hole, MA (research vessel staging port, research aquarium, data  
management, age and growth lab); Narragansett, RI (ecosystems monitoring,  
remote sensing, apex predator tagging); Milford, CT (research aquaria; fish,  
shellfish and algal culture facilities); Sandy Hook, NJ (seawater system serving 12  
labs for analytical chemistry and microbiology, controlled environment wet labs  
with 24-hour monitoring capability for experiments including a two-story 32,000  
gal. research aquarium); National Systematics Lab, Washington DC (located in the  
Natural History Museum of the Smithsonian Institution).

## UNITED STATES OF AMERICA

### Aquatic Food Products Laboratory

Address: Aquatic Food Products Lab at University of Florida  
P.O. Box 110375, Gainesville, FL 32611-0375  
Tel.: 1-352-392-4222  
Fax: 1-352-392-8594  
E-mail: otwell@gnv.ifas.ufl.edu

Head of Organization Dr. Douglas Archer, Dept. Chairman Food Science and Human Nutrition  
Type of Organization Academic/Research  
Responsible Authority Dr. Steve Otwell  
Number of Staff: Scientists:6 Others: 10  
Working Languages: English/Spanish

#### Major Fields of Interest:

Processing: All aspects related to seafood processing: freezing, thawing, peeling, cooking, smoking, packaging, canning, etc.  
Species: All seafood  
Development: Limited product R&D; Value added processing  
Quality: Shrimp School: a yearly program to educate about all aspects related to shrimp quality Processing aids such as phosphates, sulphites, everfresh, etc. Rapid methods to determine presence of these additives in shrimp. Chemical and microbiological rapid methods; i.e. histamine, sulphites, salmonella  
Others: Seafood Safety: National Coordinator for training HACCP and Sanitation Control Procedures Seafood nutritional labelling

Present Programmes: Seafood and aquaculture products safety: Maintain the National Training Program for industry and inspectors for HACCP and related Sanitation Control Procedures. Biotechnology to assure seafood safety: Develop rapid detection methods for microbial pathogens, marine toxins, and toxic algae based on specific probes. Oysters: Developing alternative freezing methods to eliminate bacteria while maintaining expected quality. Equipment designs and cleaning methods for shucking, introducing alternative market forms for cooked products. Fish, multi-species: Use of modified atmosphere packaging for freshness. Use of carbon monoxide to retain muscle colour. Controls to prevent histamine poisoning from tuna and mackerels. Shrimp: Introduction of electronic noses camera imaging and convenient field tests to judge and grade products. Developed proper use of antimicrobial agents and treatments to retain favourable moisture. Developed safe controls for use of sulfiting agents. Aquaculture: Demonstrating the quality attributes for freshwater, intensive cultured shrimp produced in Florida. Investigate tests to distinguish cultured vs. wild sturgeon. Designing processing options and time-temperature management for tilapia and catfish farms. Spiny lobsters, stone crabs and blue crabs: Set cooking protocols to suit food safety regulations. Introduced "sanitation index" to control potential pathogenic bacteria in processing.

#### Working Facilities

Laboratories: Chemistry, microbiology, engineering, toxicology  
Others: Nutrition Training Programmes:

Title	Duration	Language
Shrimp School	(every year) 2 1/2 days	English

HACCP Training (upon request)  
Blue Crab School

2 1/2 days English  
1 day English

**UNITED STATES OF AMERICA**

**NOAA National Marine Fisheries Service**

**Southeast Fisheries Center**

Address: NOAA, NMFS, 4700 Avenue U, Galveston TX 77551-5997  
Tel.: 1-409-766.3500  
Fax: 1-409-766.3508  
E-mail: Rhonda.Elizondo@noaa.gov

Head of Organization Laboratory Director, Dr Roger Zimmerman  
Type of Organization Federal Government Department  
Responsible Authority National Marine Fisheries Service, Southeast Fisheries, Science Centre and  
Regional Office

Number of Staff: Scientists: 25 Others: 40  
Working Languages: English

Major Fields of Interest:

Handling: Onboard; Onshore; Research on Landings.  
Species: Fish; Crustaceans; Molluscs; Sea Turtles.  
Development: New Equipment; Research.  
Others: Statistics; Fishery Resources; Stock Assessment; Fishery Biology; Management Information; Fishing Technology; Fish Culture; Marine Pollution.

Present Programmes: Research on Shrimp and Bottomfish Fisheries; Research Fishery Interaction with Protected Sea Turtles and Marine Mammals.

Working Facilities:

Laboratories: Biology; Aquaculture.  
Others: Library; Research Vessel; Flow through Sea Water System for Research.

Regular Training Programmes:

Title	Frequency	Duration	Language
College Studies	Continuously	Semester	English

Serial Publications: Peer Review Journal Articles; Technical Memorandum; Technical Reports



## URUGUAY

### Institute of Fisheries Research – State University

Address: 1160 Tomás Basañez, Montevideo 11300  
Tel.: 598-2-622 14 96  
Fax: 598-2-628 01 21  
E-mail: postmaster@pes.fvet.edu.uy  
Website: <http://www.pes.fvet.edu.uy>

Head of organization Dr. Enrique Bertullo, Full Professor  
Type of Organization Teaching and Research Institute  
Responsible Authority Veterinary Faculty, Estate University of Uruguay

Number of Staff: Scientists: 15 Others: 6 Assistant students: 6  
Working Languages: Spanish, English

Major Fields of Interest: Fisheries Management Commercial, Artisanal.

Handling: On board, on shore, in Plant  
Processing: Freezing, fermentation, minced products.  
Species: Cephalopods, frogs, white fish, tuna, crab.  
Development: Traditional and new fish products, traditional packaging, traditional processes, traditional equipment.  
Quality: Fish inspection, quality control, Fish quality assurance: HACCP, SSOP application and audit  
Others: Biochemistry, consultation, training, extension, fishery biology, fish culture, pilot plant product development and small-scale production.

Present Programmes: Frozen minced products and frozen analogues (Japan Government agreement), frozen breaded portions, salted fish, topshell cannery.

#### Working Facilities:

Laboratories: Chemistry, biology, processing, microbiology, quality control.  
Pilot Plant: Ice making plant, cold storage, test kitchen, fish culture ponds. Library

#### Regular Training Programmes:

Title	Frequency	Duration	Language
Fish Technology (Undergraduate)	twice yearly	4 months	Spanish
Fish Inspection (Postgraduate)	1-2 times/year	1 month	Spanish
HACCP application	1 time/year	1 month	Spanish
Others:			
Title		Duration	Language
Fish Quality Control/Assurance		1 month	Spanish

Serial Publications: Institute of Fisheries Research Bulletin

## **VANUATU**

### **Vanuatu Maritime College**

Address: P.O. Box 201, Luganville, Santo  
Tel.: (678) 36547  
Fax: (678) 36154  
E-mail: artrain@vanuatu.com.vu  
Mail to: P.O. Box 201, Luganville, Santo

Head of Institution: Captain K.J. Barnett, Chief Executive Officer  
Type of organization: Maritime Training Institute  
Responsible Authority: Board of Directors  
Number of Staff: 12

Working Languages: English and Bislama

Major Fields of Interest: The Vanuatu Maritime College was established at the beginning of 1999 to provide competency-based maritime training and assessment programmes in the following areas:

Maritime: Near-coastal waters: Seafarers at all levels from pre-sea ratings to Master 500GT and Engineer 75Kw Certificates  
Fishing: Rural fishing skills; Pre-sea ratings to Qualified Fishing Deckhand aboard foreign fishing vessels; Specialist fishing and seafood handling programmes  
International Shipping: Pre-sea programmes for deck, engine, general-purpose and catering  
Ratings: Petty Officer training and Officer Cadet programmes are planned

All training meets standards laid down in relevant international conventions and the requirements of state legislation and industry.

#### Training Programmes:

Training programmes for seafarers of all levels aboard vessels operating in near-coastal vessels are currently offered on a regular basis.

Programmes for the fishing sector and vessels operating internationally will commence in 2000.

Further information is available from the College. Enquiries from students outside Vanuatu are welcome. Residential accommodation may be available subject to demand.

## VIETNAM

### Research Institute of Marine Products

Address: 170 Lelai Street, Hai Phong 3500

Tel.: 84-31-836.656/836.664

Fax: 84-31-836.812

Head of Organization Director, Prof. Dr Bui Dinh Chung

Type of Organization Research Institute; Univ. Dept./Higher Educ.; National Authority

Responsible Authority Ministry of Fisheries

Number of Staff: Scientists: 97 Others: 63

Working Languages: Vietnamese; English; Russian; German

#### Major Fields of Interest:

Handling: Onboard; Onshore.

Processing: Drying; Salting/Drying; Fermentation; Smoking; Fishmeal.

Species: Crustaceans; Molluscs; Cephalopods; Algae.

Development: Traditional and New Fish Products; Traditional and New Processes.

Quality: Quality Control.

Others: Biochemistry; Consultation; Training; Extension; Fishery Resources; Stock Assessment; Oceanography; Fishery Biology; Fishing Technology; Fish Culture; Marine Pollution; Marine Biodiversity; Marine Park; Marine Sanctuaries; Technology Transfer.

Present Programmes: Methods and Measures for Prevention of Post-harvest Losses; Production of New Value-added Products; Extraction of Agar, Exploitation of offshore fisheries resources; Assessment of the living Marine Resources in Viet Nam; Marine Finfish Seed Production.

#### Working Facilities:

Laboratories: Chemistry; Biology; Processing; Biochemistry; Microbiology.

Others: Pilot Plant; Ice Making Plant; Cold Storage; Test Kitchen; Library; Research Vessel; Fish Culture Ponds; Training and Technology Transfer Center; Research Station of Quy Kim Brackishwater Aquaculture; Research Station of Cat Ba Marine Culture.

The *International directory of fish technology institutes* lists 121 institutes in 57 countries. All of the institutes listed have continuing research or development programmes on the technology of fish as food, and some are more involved with training at the secondary or tertiary levels. The basic information provided in the one-page entry for each institute includes the name of the director, the address, the fields of interest, working facilities, staff and programmes, as well as the training activities and serial publications.

