



Universitat d'Alacant
Universidad de Alicante



CIHEAM

International Master in **SUSTAINABLE FISHERIES MANAGEMENT**

(9th edition)

Alicante (Spain), October 2021 – June 2023





I. INTRODUCTION AND OBJECTIVES

Fishery resources are an excellent food source as well as a driver of job creation in the coastal areas. According to the FAO, supply of fish for food from both capture fisheries (marine and inland) and aquaculture currently provides about 17% of the total supply of animal protein. At the same time, international trade of fish and fishery products has expanded significantly in the last decades, with about 36% of the production being exported. These statistics however do not diminish the concern about the current situation of fishery resources. If exploitation of these resources is to be both stable and sustainable in the long term, better management is required.

In order to obtain and interpret management-supporting data, experts with a multidisciplinary background are needed, that will address the issue from diverse perspectives such as biology, economics, sociology or law. In this way, they will be able to evaluate and assess fishery resources and propose management measures through different techniques such as mathematical simulations, statistics, surveys, assessments or negotiations. Therefore, it is of maximum interest to train these experts so they can advise stakeholders in the diverse world of fisheries; different administrations (local, regional, state or supranational), fishermen (artisanal, semi-industrial or industrial), social groups (ship-owners, trade unions, consumers, processors, fish farmers, etc.).

Furthermore, given the international scope of the marine environment, the need arises to establish a common method and language to be used between experts of the different countries sharing fisheries. To train specialists that can contribute to facilitating the search for cooperative measures from their respective countries to benefit all stakeholders is undoubtedly a great challenge that this Master addresses.

The objective of the Master is to provide high level specialisation in issues related to the economics and management of fishing activity through:

- An analysis of the fishing system, exploitation mechanisms, marketing and management, with special emphasis on the perspective of evaluation of resources and on the economic interpretation of fishing issues.
- A multi-disciplinary vision of fisheries management from the perspective of different sciences such as biology, economics, law and sociology.
- Acquisition of experience in the use of new techniques and methods for the development of a more efficient fisheries management, adapted to the conditioning social and environmental factors.
- An initiation in research, including a critical application of the knowledge, skills and competences acquired by tackling real problems related to the management of fishing activity.

2. ORGANISATION

The Master is jointly organised by the **University of Alicante (UA)**, the **International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)** through the **Mediterranean Agronomic Institute of Zaragoza (IAMZ)**, and by the **Spanish Ministry of Agriculture, Fisheries and Food (MAPA)** through the **General Secretariat of Fisheries (SGP)**. The **General Fisheries Commission for the Mediterranean (GFCM)** and the **Fisheries Division of the United Nations Food and Agriculture Organisation (FAO)** will provide technical support within the limits of their respective mandates.



3. ACADEMIC ORGANISATION AND CURRICULUM

The Master is delivered over two complete academic years on a full-time basis [120 credits, following the European Credit Transfer System (ECTS)].

A new edition of the Master starts every two years. The ninth edition will take place from October 2021 to June 2023 and the tenth edition from October 2023 to June 2025.

The first part of the Master (60 ECTS) is professionally oriented and is held in Alicante, at the **Faculty of Science of the UA**, from October 2021 to June 2022 in the case of the ninth edition. The programme is delivered by highly specialised lecturers from the organising institutions and distinguished guest lecturers belonging to international institutions and universities, research centres, administrations and private bodies from various countries. This part is made up of complementary but independent units so that participants may attend, if they wish, only one or several units. This part requires personal work and interaction among participants and with lecturers. Formal lectures are complemented by practicals, supervised work, open seminars and technical visits, which foster the exchange of ideas between lecturers, professionals and participants. The following modules, content and credits make up the first part:

- 1. Introduction to the marine ecosystem, fishery resources and aquaculture (6 ECTS)**
Structure and characteristics of marine ecosystems. Fishery resources. Introduction to aquaculture.
- 2. Statistical analysis and database use (5 ECTS)**
Statistical analysis. Uses of databases in fisheries. Geographical Information Systems.
- 3. Dynamics of exploited fish populations (5 ECTS)**
Population units. Basic concepts of population dynamics. Recruitment, growth and mortality. Selectivity. Catches and fishing effort. Standardisation of fishing effort. Data sources for population dynamics.
- 4. Theory and models for fisheries evaluation (6 ECTS)**
Global or production models. Models structured by age. Direct evaluation methods: fisheries survey by swept area and acoustic prospections. An ecological model: Ecopath ("Ecological Pathways Model"). Reference points obtained from the different models and exploitation regulations.
- 5. Basic economics and production factors in fisheries (4 ECTS)**
Basic economics. Fisheries business activity. The fishing vessel and fishing technology.
- 6. Fish trade and processing (4 ECTS)**
The fish trade worldwide. World trade institutions. Fish trade and marketing. Consumer behaviour and market research. The economic context of fishing.
- 7. Theory and application of bioeconomic models and economic and social indicators (6 ECTS)**
Static and dynamic bioeconomic models. Application of bioeconomic models (MEFISTO). Models structured by age and optimal management. Use of economic and social indicators.
- 8. Institutional framework: cooperation and research (4 ECTS)**
International cooperation. Fisheries research.
- 9. Maritime law and socio-cultural perspective (5 ECTS)**
Worldwide legal and institutional framework for maritime law. EU common fisheries policy. Administrative management of aquaculture. Aquaculture administrative management. The application of fisheries legislation. The historical perspective of fishing communities. The socio-cultural perspective. The socio-political perspective.
- 10. Objectives and instruments for fishing policies (5 ECTS)**
Fisheries management aims. Technical measures and regulation instruments. The environmental impact of fisheries and discards. Marine protected areas of fisheries interest. Artificial reefs. Fishing control. The FAO and Regional Fishery Organisations (RFOs). The Common Fisheries Policy (CFP) of the European Union.

11. Applied fisheries policies (5 ECTS)

The role of Spanish Autonomous Communities in fisheries management. The fishermen's perspective. The role of NGOs. The role of consumers, certification tools (MSC). Fisheries management in different countries: typology and importance.

12. Institutional visits (5 ECTS)

Technical visits and conferences at government institutions, research centres, fishing organisations, processing industries and markets.

During the **second part of the Master**, participants complete 60 ECTS focused on the introduction to research, external practicals and on the completion of a thesis (Final Master Project) based on the results of an original research work. This part is conducted at the University of Alicante or other collaborating institutions and will last for 10 months, starting in September 2022 for the ninth edition. The University of Alicante Master coordinators undertake to give students guidance to find contacts, seek out research topics and host institutions, as well as possible financial aid. The credits for this second academic year are structured as follows:

13. Introduction to research (15 ECTS)

Basic tools to search for information and documentation and learning methods and techniques applicable to fisheries research.

14. Internships (15 ECTS)

Internships will be conducted in research departments, firms and other institutions that collaborate with the Master in order for participants to learn techniques and study methods related to the topic on which their Master thesis will be based. It will also be possible to conduct extracurricular traineeships, for example, participation in fisheries assessment campaigns on board oceanographic research vessels.

15. Final Master Project (Master thesis) (30 ECTS)

The Final Master Project (*Trabajo de Fin de Máster* or TFM) will be related to any of the topics addressed in the programme from the perspective of fisheries management or research and may be conducted within international institutions, universities, research centres, services of the public administration and private companies. The work leading to the completion of the TFM will be supervised and directed by a tutor who must be a doctor of renowned experience.

4. LECTURERS AND COLLABORATING INSTITUTIONS

The programme of the first part of the Master is delivered by over 60 lecturers from international institutions, universities, research centres, administration services and private firms including the following:

- University of Alicante
- University of Barcelona
- University of Girona
- University of Vigo
- University of A Coruña
- University of Santiago de Compostela
- University of Murcia
- Polytechnic University of Catalonia
- University of Ege at Izmir (Turkey)
- NAFO
- WWF
- The General Secretariat for Fisheries of the Spanish Ministry of Agriculture and Fisheries, Food and Environment (SGP-MAPA)
- MSC
- Fisheries Service of the Government of the Balearic Islands
- Regional Government of Valencia
- Social Marine Institute
- Spanish Institute of Oceanography
- National Research Council
- Technological Institute for Environmental Control of Galicia
- National Fisheries Research Institute of Morocco
- Peru's Institute of the Sea
- European Commission
- International Commission for the Conservation of Atlantic Tuna
- Food and Agriculture Organization of the United Nations, General Fisheries
- Commission for the Mediterranean
- Sea Around Us
- CEPESCA
- Spanish Association for the Fish and Seafood Canning Industry
- MERCASA
- Fishermen's guilds
- Ship-owners Cooperative of Vigo
- OPAGAC
- Balfegó Group
- Probitec
- SIMRAD
- AZTI

Subject to availability, the General Fisheries Commission for the Mediterranean (GFCM) and the the FAO Fisheries and Aquaculture Department will provide some technical support within the limits of their respective mandates.



5. DIPLOMAS

The UA awards the **official Spanish University Master Degree** to those participants that have obtained 120 ECTS. CIHEAM awards the **Postgraduate Specialisation Diploma** to those participants that have obtained 60 ECTS taking the full first part of the Master. Moreover, CIHEAM awards the **Master of Science Degree** to those participants that have obtained 120 ECTS.

6. ADMISSION CRITERIA

The first part of the Master is designed for participants that fulfil the following conditions:

- a) *University degree* related to the topic of the Master; preference will be given to graduates in Biology, Marine Science, Economics, Administration and Business Management, Law, Agronomy and Fisheries engineering.
- b) *Knowledge of Spanish*, which will be the normal working language of the course. For those who are interested but do not have enough Spanish knowledge, both CIHEAM and the Superior Centre for Languages of the University of Alicante offer intensive Spanish courses that will help them reach the required level.
- c) *Understanding of English*, given that some lectures and part of the teaching material will be in English.

The candidate's academic record (75%) and professional experience (25%) in the area of specialisation will be valued.

7. PRE-REGISTRATION AND ENROLMENT FEE

The pre-registration and enrolment deadlines and the documentation to be submitted can be found in <https://web.ua.es/en/continua/applications.html>. Pre-admitted candidates must enrol before a deadline established by the University of Alicante in accordance with the official calendar.

Registration fees for each academic year of the Master amount to approximately 2400* euros. This sum covers the documentation for the course, theoretical and practical classes, seminars and the cost of the technical trip and visits. In no case will travel, board and lodging expenses be included. For candidates wishing to attend part of the course, the fees will be proportional to the credits they register for.

It is compulsory for participants to have medical insurance valid for Spain. Proof of health insurance cover must be given at the beginning of the Master. For participants under 28 years of age, academic insurance is included in the registration fees.

**This price is indicative and may vary as the rates for Master postgraduate programme credits are determined annually by the Valencian Regional Government.*

8. SCHOLARSHIPS

Several private and public bodies may award scholarships to take part in this programme. These scholarships provide the student with a total or partial aid to pay for the registration fees. **Several aid schemes for postgraduate studies can be found on the Master's website, in Scholarships and specific aid section.**



Candidates from CIHEAM member countries (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Turkey) may apply for scholarships covering all or part of the registration fees, and for scholarships covering the cost of accommodation. Scholarships will be awarded according to academic merit and candidates from developing countries will be prioritised. The application for these scholarships must be completed before 4 May 2021 on the following link: <http://www.admission.iamz.ciheam.org/en/>. Only those students who achieve an average of seven out of ten or higher on the first part of the Master will be entitled to apply for the scholarships awarded by CIHEAM.

The Association of Large Tuna Freezers (AGAC) offers two scholarships for candidates from Comoros covering the Spanish language course, registration fees for the Master and travel and living expenses. Scholarships may be requested before 4 May 2021 at the following address: <http://www.admission.iamz.ciheam.org/es/>.

Candidates from other countries who require financial support should apply directly to other national or international institutions, such as the European Commission or the World Bank etc.

For the second part of the Master, those students doing a curricular external internship or the FMP at national or international companies and institutions are entitled to apply for the mobility grant offered by the University of Alicante's Faculty of Science.

Also for the second part of the Master, and pending confirmation, the General Fisheries Commission for the Mediterranean (GFCM) and the FAO Fisheries Division will offer financial support (Internship Programme) for students wishing to prepare their Master's Thesis in a topic of specific interest.

9. INFORMATION AND CONTACT



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Website: <https://ciencias.ua.es/en/estudios/master-s-degrees/master-s-degree-in-sustainable-fisheries-management.html>



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Food and Agriculture
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General Fisheries Commission
for the Mediterranean
Comisión General de Pesca
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