



Advanced Course for

Scientific Fisheries Observers

Intermares Vessel / Tenerife (Spain) • 14-18 September 2026



Objective

Sustainable fisheries management must be based on a sound understanding of the state of fish stocks and on compliance with management strategies, regulations and fisheries policies. To this end, it is essential to collect data on fishing activity, with fisheries-dependent data playing a key role. This data is collected by trained and specialised scientific personnel on board fishing vessels. Working as a scientific observer on fishing vessels provides an understanding of the mechanics of fishing operations, the functioning of fishing gear, and a comprehensive overview of the composition of catches in the fishery, including commercial catches and unwanted catches (discards and incidental catches of protected species).

Scientific fisheries monitoring involves a wide range of activities, such as sorting and identifying caught species; conducting size and biological surveys; collecting biological samples for studies on growth, reproduction, diet and genetics; and tagging marine species for studies on migration and survival. In addition, observers monitor bycatches of species that are protected or vulnerable to fishing (marine mammals, turtles and sharks). Currently, the development of new technologies applied to fisheries observation, such as electronic monitoring, has presented new challenges for fisheries monitoring, in which human observers continue to play a very prominent role.

The data collected is used by fisheries assessment groups to produce technical reports on the portion of the stock exploited by fishing. Furthermore, the data and reports are used in forums, committees and working groups for decision-making regarding the management of renewable marine resources and therefore have a significant socio-economic impact on the fishing industry.

The course provides participants with training on scientific fishing observation programmes, international protocols, and new technologies applied to fisheries monitoring. It covers current methodologies for sampling, analysis, and data integration through practical case studies. It also examines the specific characteristics of sampling in different types of fisheries. It analyses differences arising from fishing gear and the biological characteristics of the target species. It includes the study of small-scale fisheries, purse seine fisheries, tuna and related fisheries, and trawl fisheries. Taken together, it provides a comprehensive overview that strengthens the operational skills of scientific observers.

By the end of the course the participants will:

- have a comprehensive understanding of the methodologies used to sample catch composition in different types of fisheries, the mechanics of fishing operations and how fishing gears work;
- acquire the necessary knowledge to carry out a range of tasks, such as sorting and identifying caught species, size and biological sampling, and tagging marine species;
- gain experience in on-board observation through practical case studies led by experts in the field;
- be equipped with criteria for selecting the most appropriate sampling methods, according to the fisheries and the requirements of different scientific monitoring programmes;
- understand the applications of new technologies for the scientific monitoring of fisheries and fisheries surveillance;
- appreciate the importance of data integration and analysis in fisheries monitoring;
- be familiar with the procedures, protocols and guidelines of various Regional Fisheries Organisations and Scientific Councils for monitoring fishing activities through on-board observer programmes worldwide.

Organisation

The course is organised jointly by the Ministry of Agriculture, Fisheries and Food (MAPA), through the General Secretariat for Fisheries (SGP), the International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM), through the Mediterranean Agronomic Institute of Zaragoza (CIHEAM Zaragoza), the Masar al'an programme of the Spanish Agency for International Development Cooperation (AECID), and the Spanish Institute of Oceanography (IEO-CSIC, in collaboration with the General Fisheries Commission for the Mediterranean (GFCM) of the Food and Agriculture Organization of the United Nations (FAO).

The course runs for one week, with morning and afternoon sessions, and takes place on the Intermares Fisheries Cooperation Training Vessel, moored in the Port of Tenerife. The vessel is equipped with classrooms and laboratories for practical sessions.

The course requires independent study and active participation. Classes will be complemented by practical sessions on the identification of fish species, data collection, and analysis of biological samples, as well as the analysis and reporting of the collected data, which will take place in the classrooms and laboratories on board Intermares.

Programme

1. Welcome, opening address and presentation
2. Tour of the Intermares training vessel (1 hour)
3. Scientific fisheries observation (skills, training, challenges) (1 hour)
4. Scientific fisheries sampling (2 hours)
 - 4.1. Bases of scientific fisheries sampling (1 hour)
 - 4.1.1. Importance of catch data in fisheries management
 - 4.1.2. Types of fisheries data
 - 4.1.3. Bases for decision-making in fisheries management (RFMOs, working groups and scientific committees)
 - 4.2. Obtaining fisheries data (1 hour)
 - 4.2.1. Fishery-dependent data
 - 4.2.2. Data sources: censuses and samplings
 - 4.2.3. Factors influencing fisheries observation programmes
5. Fisheries observation methodology (11 hours)
 - 5.1. Fishing data logging (2 hours)
 - 5.1.1. Observer material
 - 5.1.2. Fishing trips and fishing operations data
 - 5.1.3. Sampling of retained catches: biomasses and abundances
 - 5.1.4. Discard sampling
 - 5.1.5. Incidental capture recording
 - 5.2. Scientific identification of fishing species (1 hour)
 - 5.2.1. Species groups
 - 5.2.2. External morphology
 - 5.2.3. Identification keys
 - 5.2.4. Photography and conservation techniques for taxonomic identification
 - 5.2.5. Identification practices
 - 5.3. Practical Work I: Scientific identification of fishing species (3 hours)
 - 5.4. Biological sampling of the catch (2 hours)
 - 5.4.1. Obtaining fish and invertebrate size distributions
 - 5.4.2. Estimation of length-to-weight ratio
 - 5.4.3. Sampling for growth studies: extraction of otoliths, radii and vertebrae
 - 5.4.4. Sampling for reproduction studies (sex ratio, maturity and fecundity): extraction, analysis and conservation of gonads
 - 5.4.5. Sampling for feeding studies: stomach contents
 - 5.4.6. Biological sampling of parasites
 - 5.4.7. Other biological samples: molecular analyses, hormones, collections
 - 5.5. Practical Work II: Biological sampling practices on board fishing vessels (3 hours)
6. Fishing observation in different types of fleets (data types, reports and RFOs) (5 hours)
 - 6.1. Fishing observation in the artisanal fleet (1 hour)
 - 6.2. Fishing observation of small pelagics in the purse seine fleet (1 hour)
 - 6.3. Fishing observation in the hake and cephalopod trawler fleet (1 hour)
 - 6.4. Fishing observation in the tuna boat fleet (1 hour)
 - 6.5. Fishing observation in the shellfish fleet (1 hour)
7. Analysis of information from observer programmes (5 hours)
 - 7.1. Databases and technical reports, data validation and integration (7.1. to 7.7: 2 hours)
 - 7.2. Databases and reports
 - 7.3. Data validation
 - 7.4. Data integration
 - 7.5. RFMO structure and objectives
 - 7.6. Working groups, workshops and committees
 - 7.7. Scientific advice: reports, evaluation and management
 - 7.8. Practical Work III: Case study of scientific data analysis (3 hours)
8. Scientific monitoring of the impact of fishing: Vulnerable marine ecosystems (2 hours)
 - 8.1. Vulnerable marine ecosystems
 - 8.2. Impacts of fishing
 - 8.3. Bycatch species
 - 8.4. Impacts of fishing on protected, threatened and endangered species
 - 8.5. Dedicated monitoring programmes with observers
 - 8.6. Case studies
9. Electronic observation systems on board fishing vessels (2 hours)
 - 9.1. Fisheries control: remote monitoring of fisheries
 - 9.2. Artificial intelligence applied to fisheries observation
10. Round table: situation, perspectives and challenges (1.5 hours)
11. Conclusions and close (0.5 hours)

In collaboration with:



Food and Agriculture
Organization of the
United Nations



General Fisheries
Commission for
the Mediterranean



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Lecturers

Canal, Gema - Oceanographic Centre of the Canary Islands, IEO-CSIC (Spain)

López, Esther - Oceanographic Centre of the Canary Islands, IEO-CSIC (Spain)

Massuti, Enric - Oceanographic Centre of Balearic Islands (Spain)

Rey, Javier - Oceanographic Centre of Cadiz, IEO-CSIC (Spain)

Rojo, Vanessa - Oceanographic Centre of the Canary Islands, IEO-CSIC (Spain)

Romero, Zeneida - Oceanographic Centre of Cadiz, IEO-CSIC (Spain)

Sotillo, Begoña - Oceanographic Centre of the Canary Islands, IEO-CSIC (Spain)

Taboada, Luis - Institute of Marine Research CSIC, Vigo (Spain)

Admission

The course is open to a maximum of 25 participants holding a university degree in biology, marine sciences, fisheries engineering or related disciplines, from research or fisheries training institutions in CIHEAM member countries (Albania, Algeria, Egypt, France, Greece, Italy, Lebanon, Malta, Morocco, Portugal, Spain, Tunisia and Türkiye) and from Arab countries participating in the Masar al'an programme (Algeria, Egypt, Jordan, Morocco, Mauritania, Palestine, Syria and Tunisia), who wish to train as scientific fisheries observers.

English will be the working language of the course.

Registration

Applications for admission can be submitted online at the following address: <http://www.admission.iamz.ciheam.org/es/>, together with CV and copies of the supporting documents relevant to the course subject.

The deadline for applications is 22 May 2026. The deadline may be extended if places are available.

There is no registration fee for this course.

Scholarships

The organisation is offering a limited number of travel grants to participants from CIHEAM member countries and Arab countries participating in the Masar al'an programme. The organisation will cover the costs of accommodation and meals on the Intermares vessel on a full-board basis, in shared cabins, for participants who require it. Priority will be given to candidates from low and middle-income countries. Applicants requiring financial support should clearly state and justify their request in their letter of motivation.

Insurance

It is compulsory for participants to provide proof of insurance cover valid for Spain at the beginning of the course. The Organisation offers the possibility of subscribing to a group policy, upon payment of the stipulated amount.

Contact:

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