



TRAINING WORKSHOP

IMPLEMENTING THE PRECISION FISH FARMING APPROACH IN LAND-BASED AQUAFARMS

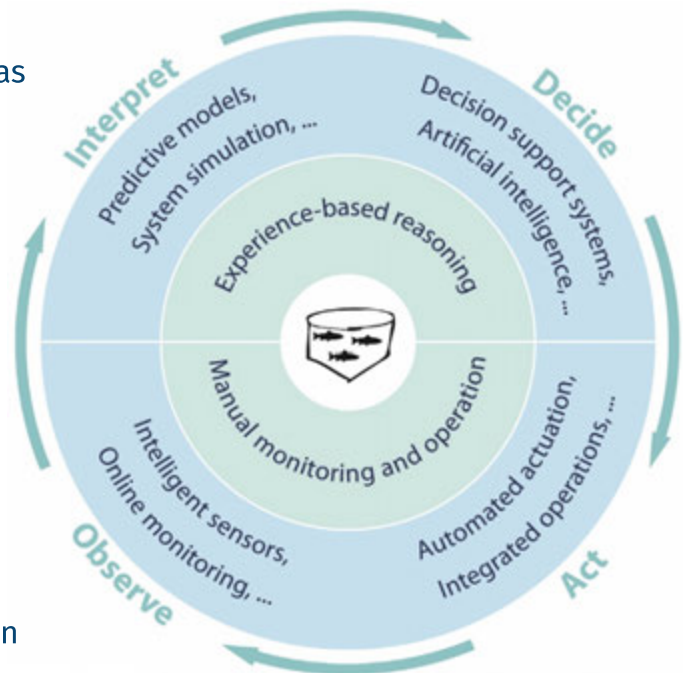
UNIVERSITY OF BOLOGNA, 26-27 October 2023

Objectives

Aquaculture products are among the healthiest and most sustainable types of food (low FCR, low carbon footprint and low consumption of freshwater) depending on how they are produced, as farming takes place in different habitats, different production systems (from extensive to intensive), at different scales (from small-scale farms to multinational companies), and also involves the control of water quality, use of aquafeeds, chemicals and drugs. As the scale of farming production increases, the industry faces new technical, economic, and social challenges to be profitable while maintaining ethically sound, productive, and environmentally friendly criteria. It is therefore important for the aquaculture industry to integrate knowledge-based production management methodologies to better monitor, control, and document biological processes when upscaling fish farming production to ensure its sustainability.

The aim of the training workshop is:

- To provide a general introduction to the Precision Fish Farming (PFF) framework, as a pathway towards the management optimization and the digitalization of land-based aquafarms.
- To show how the four components of a smart management system based on the PFF framework, namely Observe, Interpret, Decide and Act, can be applied to land-based trout, seabass and seabream farms.
- To showcase the applications of PFF implemented in NewTechAqua.
- To introduce participants to the use of an advanced prototype of a web-based platform for the implementation of PFF in land-based fish farms.





Organisation

The workshop is jointly organized by the **International Centre for Advanced Mediterranean Agronomic Studies (CIHEAM)**, through the **Mediterranean Agronomic Institute of Bari (CIHEAM Bari)** and the **University of Bologna**, and the **EU H2020-funded project NewTechAqua** (New Technologies, Tools and Strategies for a Sustainable, Resilient and Innovative European Aquaculture), grant agreement No 862658, whose main goal is to expand and diversify European aquaculture production of finfish, mollusks and microalgae, by developing and validating technologically advanced, resilient and sustainable solutions.

The workshop will take place at the University of Bologna (Italy), from 26 to 27 October 2023.

Admission

The workshop is designed for a maximum of 24 professionals of the aquaculture industry, operators and researchers, aiming to share recent and applied knowledge on the topics covered in the workshop with NewTechAqua partners.

There are no registration fees for this workshop.

A personal laptop is required.

How to apply

- If you would like to participate in this workshop, please send, before 31/08/2023, the following documents to CIHEAM Bari (ntaworkshop@iamb.it):
- A motivation letter explaining your professional relation with the subject of the workshop, your reasons/interest for participating in this activity, and possible participation in NewTechAqua or other European projects.
- An updated curriculum vitae (only in English).

Applications are open from 1 August to 31 August.

Financial Support

A limited number of candidates from the Mediterranean and other European countries may receive financial support covering accommodation and travel. Preference will be given to young researchers and applicants from East Europe and Non-EU Mediterranean countries. If you wish to request financial support, state this in your motivation letter, justifying your need for financial aid.





PROGRAMME

THURSDAY, 26 OCTOBER 2023 - MORNING

9:30 - 10:00 | Course presentation and introduction of participants

10:00 - 10:20 | The four steps of **Precision Fish Farming: OBSERVE; INTERPRET; DECIDE, ACT.** | **Roberto Pastres** (Ca' Foscari University of Venice).

10:20 - 11:00 | **OBSERVE** - Innovative non-invasive tools for real time monitoring of fish behaviour, welfare and size | **Nikos Papandroulakis** (HCMR).

11:00-11:20 | Coffee break

11:20 - 11:50 | **INTERPRET** - The core components of PFF: predictive models. | **Roberto Pastres** (Ca' Foscari University of Venice).

11:50 - 13:00 | **INTERPRET** - Fish diseases impact, management and epidemiological models. NTA models: forecasting and managing pathogen outbreaks in salmon and seabream farming. | **Björgolfur Hávardsson** (Seafood Innovation), **Cinzia Viroli** (University of Bologna), **Enrico Bertuzzo** (Ca' Foscari University of Venice).

13:00 - 14:30 | Lunch

THURSDAY, 26 OCTOBER 2023 - AFTERNOON

14:30 - 15:30 | **DECIDE** - PFF in action: land-based trout and seabass/seabream case studies. | **Roberto Pastres** (Ca' Foscari University of Venice).

16:30-16:00 | Coffee break

16:00-16:30 | **DECIDE** - The AQUARADAR platform for supporting the management of land-based fish farms. | **Roberto Pastres** and **Matteo Bolzonella** (Ca' Foscari University of Venice)

16:30 - 17:15 | **ACT** - Hands on session: weekly management and semestral outlook on production using AQUARADAR. | **All participants**, tutored by **Roberto Pastres** and **Matteo Bolzonella** (Ca' Foscari University of Venice).

FRIDAY, 27 OCTOBER 2023 - MORNING

09:00-10:00 | **ACT** - Teaming up and assignment to each team of a task concerning the planning of production, oxygen and feed supply in a virtual farm. | **All participants**, supervised by **Roberto Pastres** and **Matteo Bolzonella** (Ca' Foscari University of Venice).

10:00 - 11:00 | **ACT** - Each team works on its task and prepare a short presentation to outline the main results. | **All participants**, supervised by **Roberto Pastres** and **Matteo Bolzonella** (Ca' Foscari University of Venice).

11:00-11:30 | Coffee break

11:30 - 12:30 | Presentation of the results | **All participants**.

12:30-13:00 | Discussion & lessons learnt.

13:00-13:15 | Conclusions | **Roberto Pastres**.

