



# SUMMER SCHOOL

**ECOLOGICAL TRANSITION  
IN AQUACULTURE**

[www.epcsrl.eu/gain-summer-school](http://www.epcsrl.eu/gain-summer-school)

**FROM AUGUST 30<sup>TH</sup>  
TO SEPTEMBER 3<sup>RD</sup>**

**2021**



This project receives funding from the **European Union's Horizon 2020** research and innovation programme under grant agreement No **773330** (GAIN)

# GAIN SUMMER SCHOOL

## THE GAIN PROJECT

GAIN – Green Aquaculture Intensification in Europe (May 2018 – October 2021) is an EU Horizon 2020 Project which aims at supporting the ecological intensification of aquaculture in the European Union (EU) and the European Economic Area (EEA).

In our vision, “ecological intensification” means increasing production and competitiveness of the industry, while ensuring sustainability and compliance with EU regulations on food safety and environment. In order to achieve these goals and promote a global approach to the ecological transition, GAIN looks at innovative ways of producing fish and shellfish and seeks

integration with other sectors.

Being a real paradigm shift, eco-intensification of European aquaculture is a transdisciplinary challenge that requires the integration of scientific and technical innovations, new policies and economic instruments, as well as the mitigation of social constraints. Successful eco-intensification of aquaculture **will set the scene for the ecological transition of EU and EEA aquaculture**, increasing the production of higher quality aquatic products, creating more jobs and improving the trade balance by reducing import.

The GAIN Consortium includes a wide range of complementary expertise and a well-blended mix of research institutes and industrial partners, which are cooperating to:

- test novel sustainable feeds, designed to improve productivity without increasing the pressure on land and fish stocks;
- develop new circular processes, which turn both by-products and side-streams into valuable secondary materials, thus increasing profits and minimizing the environmental footprint;
- foster the digitalization of aquafarming, by developing tools for the implementation of Precision Aquaculture in fish and shellfish farms;
- introduce a new approach to the sustainability assessment of aquafarming, based on a comprehensive index, including environmental, socio-economic and welfare indicators;
- identify legal barriers restricting the implementation of circular processes and suggest policy changes for supporting the growth of EU-EEA aquaculture.

More info: [www.unive.it/gainh2020\\_eu](http://www.unive.it/gainh2020_eu)

## GAIN SUMMER SCHOOL - ECOLOGICAL TRANSITION IN AQUACULTURE

The GAIN journey is nearly over: we would like to share results and lessons learnt with motivated young researchers and operators, eager to contribute to the ecological transition of the aquaculture sector.

The GAIN Summer School will provide key concepts and tools concerning: **precision aquaculture, circular economy, sustainability assessment, policies and markets**. Students will get an up-to-date knowledge of key ideas in these areas and then will be led through the GAIN innovations, thus discovering how the main challenges in aquaculture field can be dealt with by adopting the GAIN approach to the ecological intensification of this sector.

Talks delivered by GAIN experts will be complemented by contributions from other EU projects, focused on aquaculture ecological transition, and worldwide recognized authorities.

Students will be engaged in demonstration sessions, using virtual tools, e.g., mentimeter, and encouraged to interact, within focus groups.

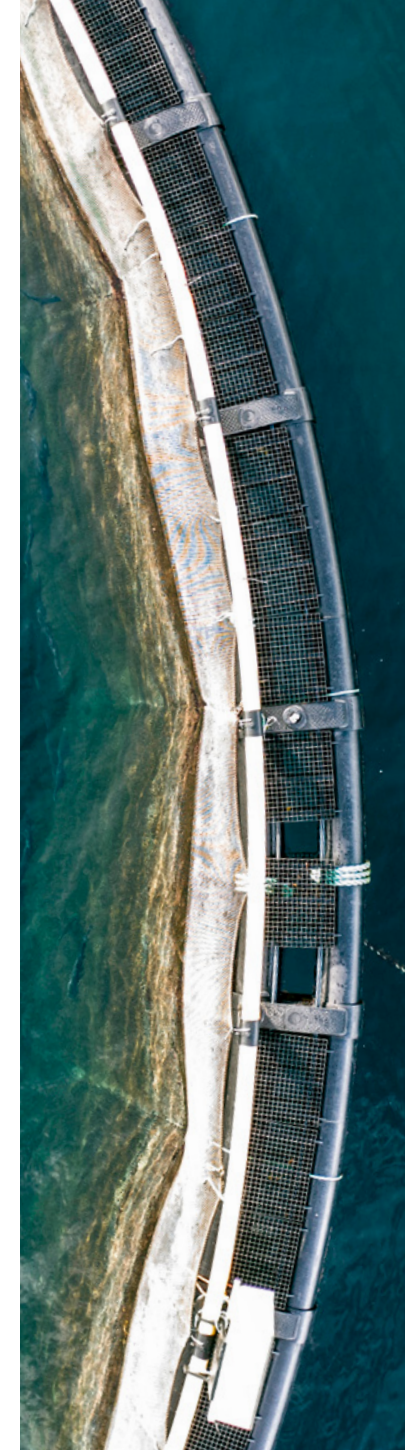
## TARGET AUDIENCE

The course is aimed at master students, young graduates, PhD candidates, Post-doc and operators interested in innovation.

The School will admit up to 40 students.

## OBJECTIVES

At the end of the summer school, students can expect to have acquired a state-of-the-art knowledge of the main challenges facing the aquaculture sectors and solutions offered by the GAIN approach to ecological intensification. They will also get an overview of ideas & tools which are going to play a major role in the ecological transition of this sector.





## COURSE STRUCTURE

The Summer School will be held **Online** from **August 30<sup>th</sup> to September 3<sup>rd</sup>, 2021**.

Five morning sessions, from 9:30 to 13:30 CEST, will be complemented by two afternoon sessions, from 14:30 to 16:30 CEST, for a total of 24 hours of training. Official language of the school is English.

A **Certificate of Attendance will be granted to participants**, upon attendance of at least 80% of the teaching hours.

## COURSE SCHEDULE AND SPEAKERS

### MONDAY AUGUST 30<sup>TH</sup> - DAY 1 H2020 FOR ECOLOGICAL TRANSITION OF AQUACULTURE

9.00 - 9.30	Welcoming and registrations
9.30 - 9.45	Welcome, introduction to the School <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
9.45 - 10.15	Ecological Intensification in China <b>Changbo Zhu</b> • South China Sea Fisheries Research Institute, China
10.15 - 10.20	5' Break
10.20 - 10.50	Intelligent Management Systems for Integrated Multi Trophic Aquaculture ( <i>H2020 IMPAQT</i> ) <b>Frank Kane</b> • Marine Institute, Ireland
10.50 - 11.20	Intelligent fish feeding through integration of enabling technologies and circular principles ( <i>H2020 iFishIENCi</i> ) <b>Tamàs Bardóc</b> • AquaBioTech Group, Malta
11.20 - 11.40	Break
11.40 - 12.10	New technologies tools and strategies for a sustainable, resilient and innovative European Aquaculture ( <i>H2020 New Tech Aqua</i> ) <b>Alessio Bonaldo</b> • University of Bologna, Italy
12.10 - 12.40	Increasing circularity and lowering waste of Integrated Multi Trophic Aquaculture ( <i>H2020 ASTRAL</i> ) <b>Elisa Ravagnan</b> • Norce, Norway
12.40 - 12.45	5' Break
12.45 - 13.15	The Deep Ocean project <b>Jon Grant</b> • Dalhousie University, Canada
13.15 - 13.30	Day 1 closure and take-home messages <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy

### AFTERNOON SESSION

14.30 - 16.30	<b>Working group</b> - participants will be divided into 3 groups, based on their interest in: Precision aquaculture – Circularity – Sustainability assessment <i>Students will present their research/motivation for attending the school</i> <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
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### TUESDAY AUGUST 31<sup>ST</sup> - DAY 2 PRECISION AQUACULTURE AND THE GAIN INFORMATION MANAGEMENT SYSTEM

9.15 - 9.30	Welcoming
9.30 - 9.45	Ecological intensification and Precision Aquaculture <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
9.45 - 10.30	Data driven models for the prediction of external forcings <b>Fearghal O'Donncha</b> • IBM, Ireland
10.30 - 10.35	5' Break
10.35 - 11.20	Process based growth models <b>Joao G. Ferreira</b> • Longline Environment, United Kingdom
11.20 - 11.40	Break
11.40 - 12.25	Data assimilation and its application to the smart management of Oxygen supply <b>Edouard Royer</b> • Ca' Foscari University of Venice, Italy
12.25 - 12.30	5' Break
12.30 - 13.15	The GAIN Information Management System <i>Demonstration of IMS tools on selected data sets collected at pilot sites</i> <b>Fearghal O'Donncha</b> • <b>Joao G. Ferreira</b> • <b>Edouard Royer</b>
13.15 - 13.30	Day 2 closure and take-home messages <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy



WEDNESDAY SEPTEMBER 1 <sup>ST</sup> - DAY 3	
ENHANCING CIRCULARITY IN THE AQUACULTURE SECTORS	
9.15 - 9.30	Welcoming
9.30 - 9.45	Ecological intensification and Precision Aquaculture <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
9.45 - 10.30	Obtaining of valuable products and chemicals from fish farming by-products <b>Xosé Antón Vázquez Álvarez</b> • Consejo Superior de Investigaciones Científicas, Spain
10.30 - 10.35	5' Break
10.35 - 11.20	Valorising shells <b>Leticia Regueiro Abelleira</b> • ANFACO-CECOPECA, Spain
11.20 - 11.40	Break
11.40 - 12.25	Getting the best out of aquaculture wastes <b>Christian Bruckner</b> • SHP, Norway <b>Hallstein Baarset</b> • Waister, Norway
12.25 - 12.30	5' Break
12.30 - 13.15	Aquafeeds revolution <b>Luis Conceição</b> • SPAROS, Portugal
13.15 - 13.30	Day 3 closure and take-home messages <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy



THURSDAY SEPTEMBER 2 <sup>ND</sup> - DAY 4	
SUSTAINABILITY ASSESSMENT	
9.15 - 9.30	Welcoming
9.30 - 9.45	Ecological intensification and sustainability <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
9.45 - 10.30	Assessing economic sustainability of innovations: the "typical farm" approach <b>Cornelia Kreiss</b> • Thünen Institute, Germany
10.30 - 10.35	5' Break
10.35 - 11.20	LCA: a more and more popular tool for assessing sustainability <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
11.20 - 11.40	Break
11.40 - 12.25	Beyond LCA: the EISI index <b>Richard Newton</b> • University of Stirling, United Kingdom
12.25 - 12.30	5' Break
12.30 - 13.15	Social acceptability of eco-intensified aquaculture products <b>Gesche Krause</b> • Alfred Wegener Institute, Germany
13.15 - 13.30	Day 4 closure and take-home messages <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy

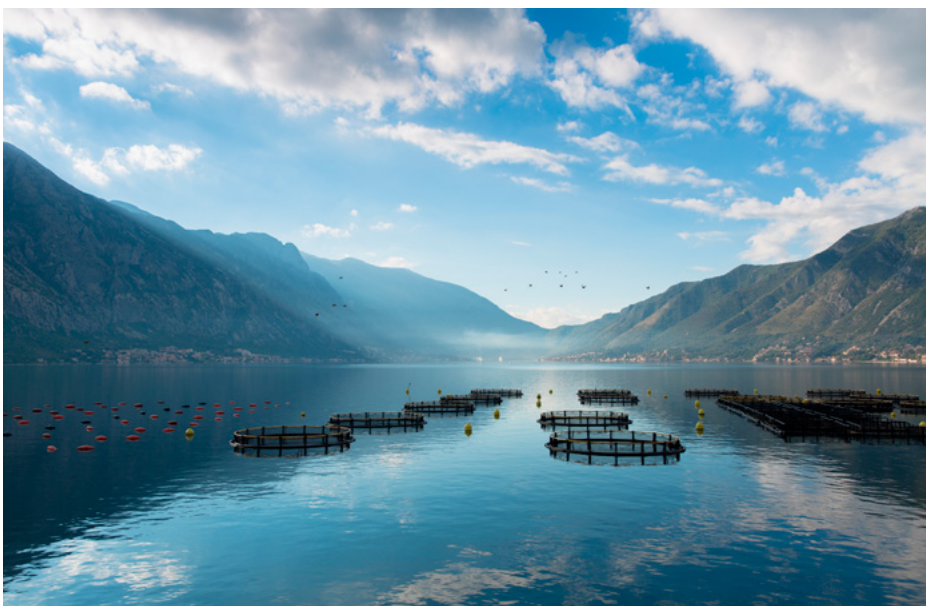
AFTERNOON SESSION	
14.30 - 16.30	LCA Hands-on session • Softwares for LCA: an overview <b>Silvia Maiolo</b> • PERFECT FOOD S.R.L, Italy



## FRIDAY SEPTEMBER 3<sup>RD</sup> - DAY 5

### POLICIES AND MARKETS - A GLOBAL PERSPECTIVE

9.15 - 9.30	Welcoming
9.30 - 9.45	Ecological intensification and policies <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy
9.45 - 10.30	Tools: VCA and its application to the carp supply chain <b>Remigiusz Panicz</b> • West Pomeranian University of Technology, Poland <b>Wesley Malcorps</b> • University of Stirling, United Kingdom <b>Piotr Eljasik</b> • ZUT in Szczecin
10.30 - 10.35	5' Break
10.35 - 11.20	Low Trophic Aquaculture ecosystem services <b>Joao G. Ferreira</b> • Longline Environment, United Kingdom
11.20 - 11.40	Break
11.40 - 12.25	Innovation incubators, new digital tools and new feeds/ingredients <b>Anton Immink</b> • ThinkAqua, United Kingdom
12.25 - 12.30	5' Break
12.30 - 13.15	Ecological approaches in Asian aquaculture <b>Patrick Sorgeloos</b> • Ghent University, Belgium
13.15 - 13.30	School closure and take-home messages <b>Roberto Pastres</b> • Ca' Foscari University of Venice, Italy



## COURSE FEE

The participation is free, as the Summer School is supported by the European Commission within the project GAIN - Green Aquaculture Intensification in Europe, which receives funding from Horizon 2020 research and innovation programme under grant agreement No 773330.

## APPLICATION PROCEDURE

The admission is based on a CV and a motivation letter, to be submitted in English.

### DEADLINE FOR APPLICATION:

**AUGUST 6<sup>TH</sup>**. Accepted participants will be notified by August 16<sup>th</sup>.

Links and instructions for application:

[www.epcsrl.eu/gain-summer-school](http://www.epcsrl.eu/gain-summer-school)

## SCHOOL ORGANIZERS

### Roberto Pastres

(Ca' Foscari University), program director

### Edouard Royer

(Ca' Foscari University), program assistant

School Secretariat:

[h2020gain.school@gmail.com](mailto:h2020gain.school@gmail.com)

## GAIN PROJECT CONTACTS

[www.unive.it/gainh2020.eu](http://www.unive.it/gainh2020.eu)

Department of Environmental Sciences,  
Informatics and Statistics (DAIS)

### Scientific Campus,

via Torino 155, 30170 Venezia Mestre, Italy

Roberto Pastres, scientific coordinator

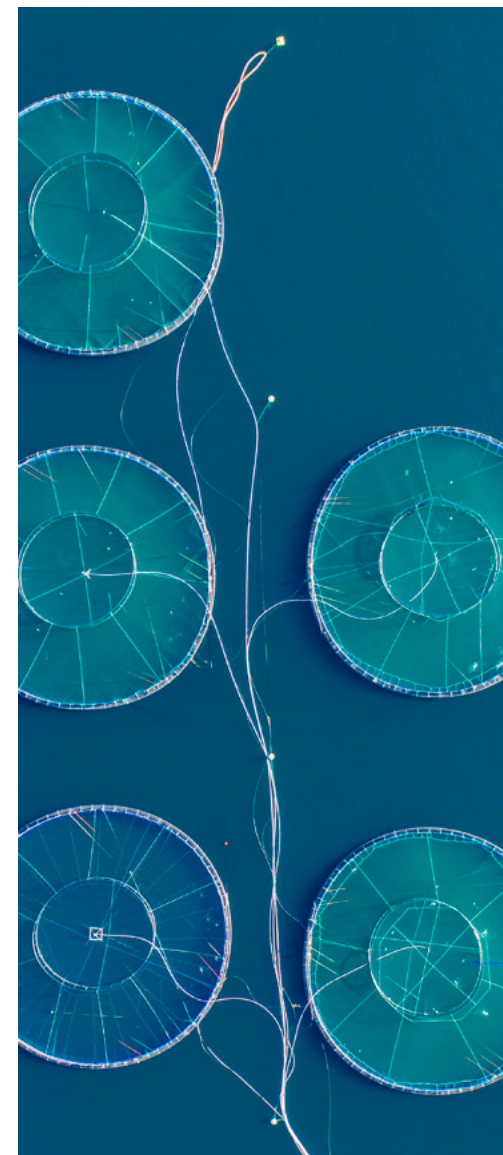
Chiara Licata, project manager

Phone +39 041 234 8674

[gain2020@unive.it](mailto:gain2020@unive.it)

[h2020gain.school@gmail.com](mailto:h2020gain.school@gmail.com)

[GAIN blog](#)





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**Start date: 01/05/2018 End date: 31/10/2021**