

AdriAquaNet

Enhancing Innovation and Sustainability in Adriatic Aquaculture

WP 3.3 Trainings of staff in SMEs and R&D Centers

WP3– Training nr. 6, report, 06052022



Introduction

The **sixth training course** entitled **“THE CONTRIBUTIONS OF THE ADRIAQUANET PROJECT TO THE IMPROVEMENT OF SUSTAINABILITY IN MARICULTURE”** was held in presence on May 6, 2022, 2021 at the conference room of HOTEL SARAGO, Corso Mazzini, 233 in Ostuni (BR), Italy) and simultaneously in remote on the platform ZOOM through the link <https://us02web.zoom.us/j/83097986553?pwd=K2NMZFRFSWNnSDZjeWt5RkZCZWJNIZz09>

It was organized by LP in collaboration with PP9 and external service LETTERAB. It was o free and aimed at university researchers and students, breeders, operators, veterinarians, technicians in the aquaculture and fish farming sector, but it is also open to all interested parties. 50 participants were present in Ostuni and 29 followed the training online. The training was held in Italian and English.

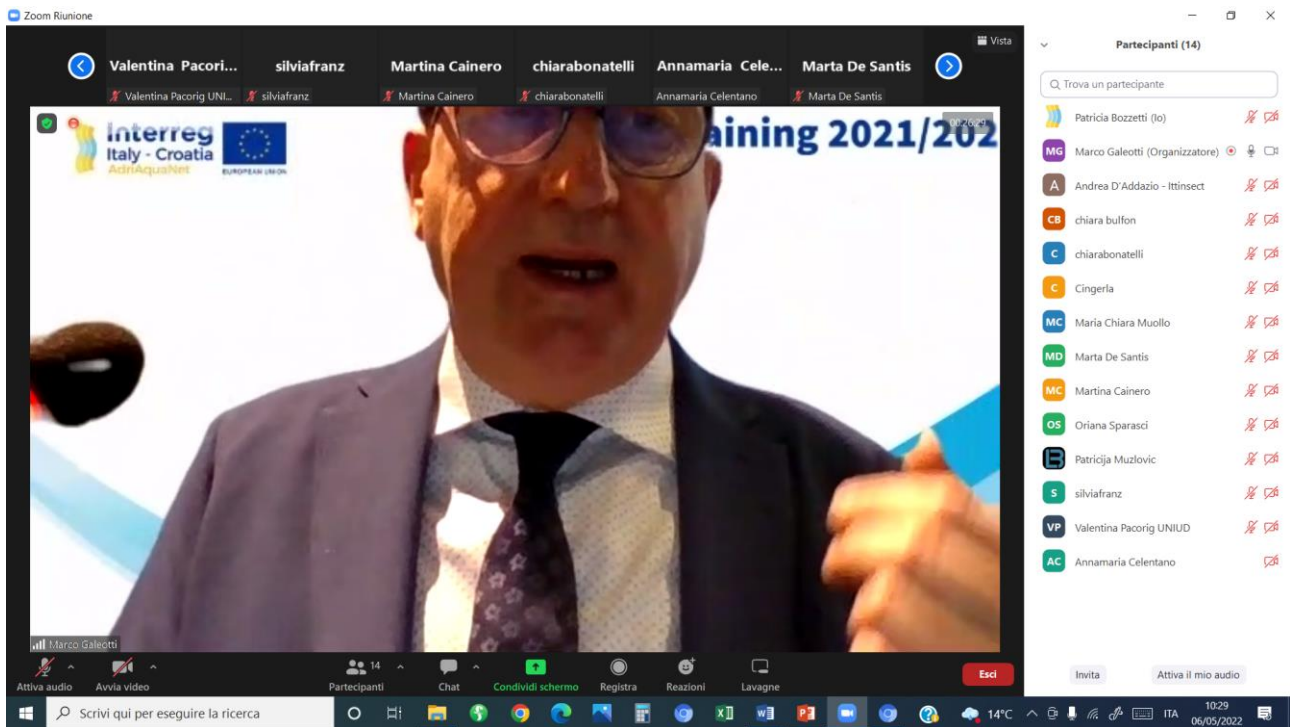
All three training cycles (WP3, WP4 and WP5) were gathered in one-day training course in order to facilitate the organization and the knowledge transfer to the attendees that were interested in different topics.

The event was accredited and included a certificate of participation of the Italian Fish Farmers Association - API which concluded the day with a presentation of the new routes for sustainable aquaculture. During the morning the experts talked about the management of the facilities and fish products, the development of a practical method of assessing the welfare of farmed fish and the identification of natural substances such as immunostimulants and antimicrobials for the control of bacterial and parasitic diseases. They focused on the marketing of farmed fish, in particular sea bass and sea bream, and derivative products and the testimonies of Italian and Croatian companies, that were involved in all phases of the design experimentation, were presented. In the afternoon, the researchers presented the results of the three-year efficacy trials of new feeds in mariculture and their influence on fish quality. In addition, the experts illustrated a new integrated modelling approach to monitor and manage farming practices, the use of technologies to reduce pollution of fish farms by using wastewater to produce biomethane and the use of photovoltaic and heat pump devices in marine aquaculture with direct evidence of the commercial hatchery where these innovations have been applied.

The course had two sessions: The morning **»SESSION 1: Improvement of the Management of fish facilities and Fish products: The AdriAquaNet project's contributions** united 5 presentations of which 1 general project presentation, 2 related to the work and topics of WP4 and 2 to the work and topics of WP5.

The afternoon **»SESSION2: Improvement of the Sustainability of fish facilities and Fish products: The AdriAquaNet Project's Contributions** « was all referred to the topics of WP3 with 5 presentations and concluded with an overview of the new routes of Sustainable aquaculture presented by A. Fabris (API-Associazione Piscicoltori Italiani – external collaborator PP2) that moderated the second session with M. Galeotti (LP) who introduced and moderated the morning session.

2





3

LP members (E. Tibaldi, F. DaBorso) were actively involved as speakers and participants in the activity 3.3. E. Tibaldi presented a lesson entitled **»New Feed Formulations in Mariculture and their Influence on the Quality of Farmed Fish«**, whereas F. Da Borso presented a lesson entitled **»Energy production from Fish Farm Waste «**.

A PP4 external collaborator Marco Bullo and his assistant Matteo Lazzarin (University of Padua), involved in the WP 3.2 activities, presented a lesson entitled **» Photovoltaics (PV) and Heat Pump in Marine Aquaculture: High Efficiency and Low CO₂ Emissions Processes for Water Heating «**, while Roberto Pastres (Bluefarm), a LP external collaborator, presented a lesson: **»From Husbandry Practices to Carrying Capacity: An Integrated Modelling Approach «**. The WP3.3. training group concluded with the presentation of PP9 coordinators Arianna Bagnardi and Leonardo Bagnardi, Ittica Caldoli Ltd. with a presentation entitled **»The applications of the AdriAquaNet Project in a Commercial Hatchery»** and their direct testimonial of the project innovative pilot plant realised at their hatchery thanks to the AAN funds.

A light lunch was organised between session for the relators and participants.



The following deliverables were produced and put in SIU:

1. Program and Agenda in EN and IT
2. Press release in EN and IT
3. Poster in A4 and A3 format
4. Attendance lists of participants in presence and on zoom
5. Minutes of discussion with attendees
6. Certificates of attendance
7. Presentation of lessons and training materials

5

Topics

The following presentations regarding WP3 were discussed among the participants and all relators present debated about:

1. New Feed Formulations in Mariculture and their Influence on the Quality of Farmed Fish:
 - a. Changes in the feed composition used for fish nutrition significantly that has an effect on: Fatty acids profile.
 - b. Sea bream fed with insects had statistically significantly higher values of EPA and DHA content.
 - c. Minimum presence of fish proteins and balanced intake of processed vegetable and animal proteins (PAT). appears more likely in configuring the protein origin of the new generation feed formulations for carnivorous fish in the medium term.
2. Energy production from Fish Farm Waste:
 - a. Anaerobic digestion of fish farm waste leads to the production of biogas, that is composed by Methane (about 50-70%), Carbon dioxide (30-50%), some ppm of hydrogen sulphide, and other gases in traces
3. Photovoltaics (PV) and Heat Pump in Marine Aquaculture: High Efficiency and Low CO2 Emissions Processes for Water Heating:

- a. The coefficient of performance (COP) of a heat pump is dependent on outside temperature: 3 is the average COP above 10 °C
4. From Husbandry Practices to Carrying Capacity: An Integrated Modelling Approach
 - a. The definition of the production carrying capacity, in relation to cage fish farming: the maximum biomass that can be farmed, without exceeding the maximum acceptable impacts to the farmed stock and the surrounding environment.
 5. An innovative pilot plant towards a better sustainability, energy saving and process control

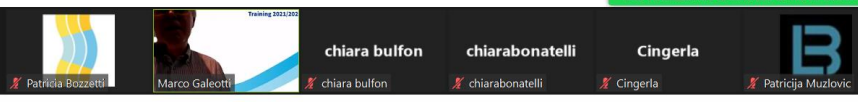
6

Conclusions and Next Steps

The following training cycle will be organized the next day, on May 7, 2022 in Ostuni.



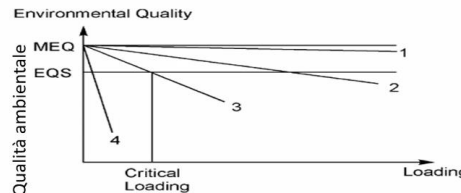
Zoom Riunione Stai visualizzando lo schermo di Marco Galeotti Opzioni della vista



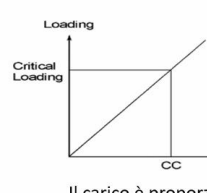
CC – Come è possibile rendere operativa questa definizione astratta?

CC – piscicoltura in gabbie (cage culture)

CC – dipende dal **carico** e dall'intensità dei processi di dispersione
 CC at **local scale** depends on load and dispersion processes.




1 Highly dispersive site
4 Confined site



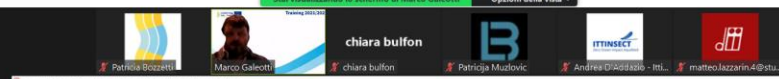
Il carico è proporzionale alla biomassa

1 – sito ad elevata dispersione
 4 – sito confinato piscicoltura in gabbie – cage culture



3

7


Zoom Riunione Stai visualizzando lo schermo di Marco Galeotti Opzioni della vista

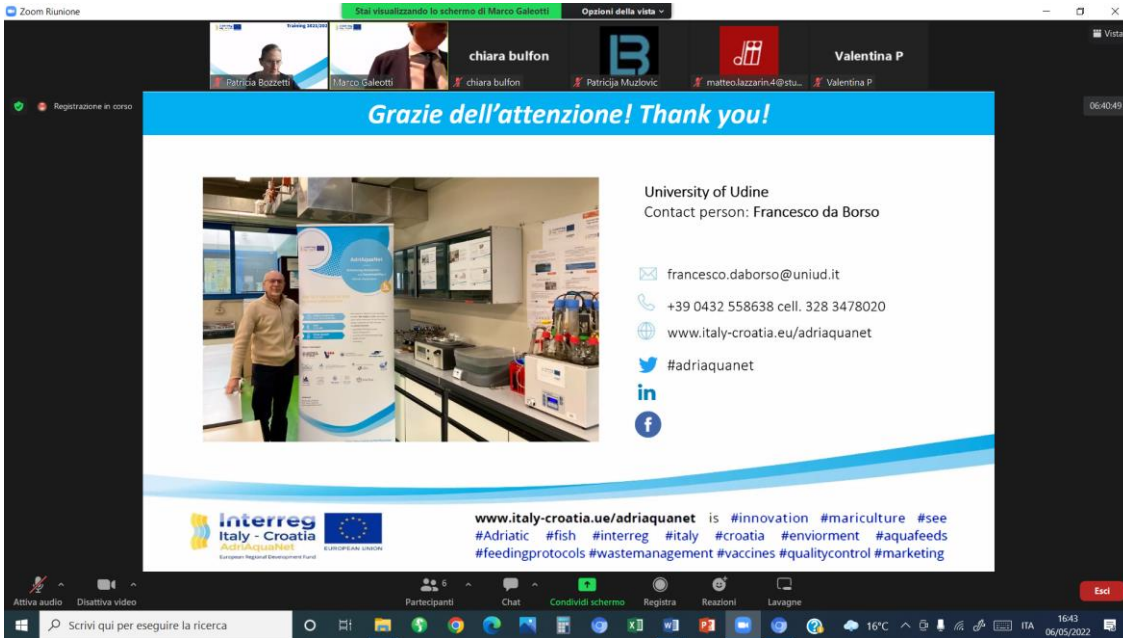


Upcoming challenges for aquaculture



ACQUACOLTURA.ORG


15:44
06/05/2022



Zoom Riunione

Stai visualizzando lo schermo di Marco Galeotti

chiara bulfon

Valentina P

Patricia Bozzetti

Marco Galeotti

chiara bulfon


Patricija Muzlovic

matteo.lazzarin.4@studenti...

Valentina P

Registrazione in corso

Grazie dell'attenzione! Thank you!



University of Udine
Contact person: Francesco da Borso

✉ francesco.daborso@uniud.it

☎ +39 0432 558638 cell. 328 3478020

🌐 www.italy-croatia.eu/adriaquanet

🐦 #adriaquanet

📺

📘

www.italy-croatia.eu/adriaquanet is #innovation #mariculture #see #Adriatic #fish #interreg #italy #croatia #enviornment #aquafeeds #feedingprotocols #wastemanagement #vaccines #qualitycontrol #marketing

Interreg Italy - Croatia

Partecipanti Chat Condividi schermo Registra Reazioni Lavagne

Attiva audio Disattiva video

Scrive qui per eseguire la ricerca

16°C

ITA

16:43

06/05/2022

8



Zoom Riunione

Stai visualizzando lo schermo di matteo.lazzarin.4@studenti.un...

Valentina P

Patricia Bozzetti

Marco Galeotti

matteo.lazzarin.4@studenti...

Patricija Muzlovic

Valentina P

Registrazione in corso

IMPIANTO DIMOSTRATIVO: PROVE SPERIMENTALI

Sono state condotte alcune prove sperimentali con l'obiettivo di valutare le performance di una pompa di calore a confronto con un elemento resistivo per il riscaldamento dell'acqua.

La temperatura dell'acqua in diverse posizioni e il consumo di potenza elettrica sono stati monitorati in modo continuo per alcune ore.



DEPARTMENT OF INDUSTRIAL ENGINEERING

800

UNIVERSITÀ DEGLI STUDI DI PAVIA

11

Partecipanti Chat Condividi schermo Registra Reazioni Lavagne

Attiva audio Avvia Video

Scrive qui per eseguire la ricerca

16°C

ITA

17:00

06/05/2022

