

Report of the 1st Cross-border labs in Italy

Final Version

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BACKGROUND AND GOALS OF THE CROSS-BORDER EXCHANGES AND TRAINING LABS ACTIVITY

The ARGOS project WP5 “Sectorial know-how development and pilot project implementation” aims at improving the sectorial capacities and know-how to change the behaviours of the Italian and Croatian fisheries and aquaculture operators towards shared environmental sustainability and responsible actions. Under this WP, the Act.5.1 “Network for the training and education of operators towards environmental sustainability” is oriented to establish a cross-border network as a framework to test training and education activities oriented to operators towards the adoption of responsible behaviours and to share the common Adriatic good practices. Within this framework, the Act.5.1 foresees:

- (D.5.1.4) [N.2 cross-border training labs](#) aimed at improving the sectorial capacities and know-how to change the behaviours of fisheries and aquaculture operators of the Adriatic area towards shared environmental sustainability along the whole chain of fish products;
- (D.5.1.5) N.2 cross-border exchanges aimed at promoting the exchange of experiences and know-how between the Italian and Croatian fisheries and aquaculture operator as well as at improving competences and knowledge on new practices for a more sustainable approach to their business.

The cross-border training labs for Italian and Croatian fishermen and aquaculture operators have been organized in the framework of the first cross-border exchange that took place in Marche and Molise from 10 to 13 October 2022. The activity was coordinated by the PP3 Marche Region in cooperation with PP12 CNR-IRBIM and PP4 Molise Region and with the contribution and involvement of all the project partners.

The present Report constitutes the D.5.1.4 related to the [cross-border labs](#) arranged in Italy, namely in Marche and Molise Regions, by the ARGOS partners Marche Region, CNR-IRBIM of Ancona, Molise Region from [11 to 13 October 2022](#).



THE CROSS-BORDER TRAINING LABS IN MARCHE REGION

In the framework of the first cross-border exchange in Marche Region, PP3 and PP12 arranged two separate cross-border labs: one for the aquaculture operators and one for the fisheries operators.

The [Cross-border training lab for the aquaculture operators](#) was organized by PP3_Marche Region in close cooperation with the Department of Environmental and Life Sciences of the University of Ancona.



The Department, in fact, provides scientific support to the partner, and which is the PP3 AAC Member. Moreover, DiSVA has launched a Master programme on sustainable aquaculture for the year 2022/2023, financed by the Marche Region European Maritime and Fisheries Fund 2014/2021.

The training lab was held at the University of Ancona on 11 October 2022. Based on the ARGOS project goals, expected results and impact at territorial level, the aim of the lab was to contribute to the improvement of knowledge and competences of the Adriatic aquaculture operators. The lab tackled the issue related to the reduction of pollution and water consumption by means of breeding system, Integrated and Multi-trophic Aquaculture, hydroponic and aquaponics systems. A special focus was dedicated to feedings and to the trade-offs among aquaculture and agriculture. In addition, the ARGOS pilot actions towards diversification, plastic material reduction along the supply were presented. During the cross-border lab was also presented for the first time a short documentary on the ARGOS pilot action for cuttlefish restocking, carried out at regional level by the Department and Marche Region in close cooperation with small-scale fishermen.

The [Cross-border training lab for the fisheries operators](#) was by CNR-IRBIM in Ancona in parallel with the lab for the aquaculture operators.



Fishers who visited the CNR-IRBIM of Ancona were welcomed by Gian Marco Luna, Director of CNR-IRBIM, and Enrico Arneri, national scientific manager for the execution of the work plan for data collection in the fisheries and aquaculture sector. Since next year it will start the new program or EU data collection, a brief description of the possible framework was given. After that, fishers visited the laboratories of microbiology, acoustics, fishing technology, and population dynamic, where the researchers illustrated all the activities aimed at studying and developing sustainable fishing. Particular attention was dedicated to the fishing tools with low environmental impact, namely traps, and to the examination of the mesh sizes allowed in the different countries. Fishers also raised their problem related to the negative interaction with marine mammals, such as dolphins. Alessandro Lucchetti, researcher at the CNR-IRBIM, described the activities conducted in the context of DELFI project aimed at reducing conflicts between these animals and the sea users. Between those, there are experimental LEDs of different colours and Pingers (small acoustic alarms that should disturb dolphins). At the same time, it was shown a turtle excluder device (TED), which is a specialized device that allows a captured sea turtle, as well as big animals like dolphins or sharks, to escape when caught in bottom trawling nets. The TED is a grid that acts as a barrier for keeping from passing through the bars into the back of the net; it is located next to a small opening in the net so that the creatures that are stopped are allowed to escape, relatively unharmed. During the afternoon the activities dealing with data collection in fisheries were introduced to the stakeholders. Fishery-independent data collection for small-pelagic species (MEDIAS project), demersal species (SoleMon project), and mollusks species (DRES project) were explained. Every single survey was described in detail, from the gear or the instruments used to collect samples, to the whole list of activities carried out on board and/or in the laboratories. Some examples of the use of these data were presented to let the stakeholders understand the purposes of the research activities dealing with the fishery

sector. As a final step, the process from the collection of raw data (fishery in- and dependent) to their elaboration in order to be included into the stock assessment framework was presented. In conclusion, a discussion followed on the detailed explanation of the whole process toward the establishment of management measures. Fishers demonstrated deep interest in understanding how the data they are obliged or asked to provide are used in the research field.

THE CROSS-BORDER TRAINING LAB IN MOLISE REGION

The [Cross-border training lab for the operators](#) was conducted by the ISZAM - Marine Ecosystems and Fisheries Research Center in Termoli for the aquaculture and fisheries operators. The operators were welcomed by the Director of Department of Valorization of the Environment and Natural Resources of Molise region Massimo Pillarella.

The project manager Mrs Nadia Barile and her assistant Mr Simone Fazio presented the pilot project "Knowledge transfer on controlled reproduction and breeding of the Flat Oyster (*Ostrea edulis*) and Sea Urchin (*Paracentrotus lividus*) for the productive diversification of shellfish farming through integrated aquaculture techniques implemented by the ISZAM within action WP5 – Act. 5.3.



The pilot action focuses on the development and promotion of innovative aquaculture technologies that facilitate the diversification of production towards species that are still little exploited but of high commercial value. The innovative aspect of the project is the combination of oyster aquaculture with echinoculture to guarantee a reduction in breeding costs for operators in the sector; maximise yields and reduce environmental impact; control fouling on structures thanks to the grazing action operated by sea urchins.

Its overall objective is to promote integrated oyster farming with echinoculture as a viable alternative, both economically and ecologically, to mussel farming. The pilot action consists of 4 steps divided as follows:

1. Adaptation, growth, and maturation of *Ostrea edulis* and *Paracentrotus lividus* organisms under confined conditions.
2. Larval development and metamorphosis from embryos obtained from *O. edulis* and *P. lividus* brood stock matured under controlled conditions.
3. Growth of juveniles of *O. edulis* and *P. lividus* in structures long-line shellfish facilities.
4. Technology transfer to production enterprises.

The lab was a fruitful moment of discussion and exchange of experience among the operators providing them with new techniques and knowledge. Then, the participants had the opportunity to be illustrated the experimental phases of the pilot project implemented by the Research Centre.



ANNEXES

Annex I – ARGOS project: 1st cross-border exchange programme Italy

Annex II – ARGOS project: 1st cross-border training labs Italy

Annex III – ARGOS project: List of Participants to the 1st cross-border exchange - Marche

Annex IV – ARGOS project: List of Participants to the 1st cross-border exchange - Molise