# FAIRSEA (ID 10046951)
## "Fisheries in the AdriatIc Region - a Shared Ecosystem Approach"

# D5.1.3. Final International Stakeholder Meeting

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| **Work Package:** | WP: 5 - Decision support system for the development of sustainable fisheries<br><br>Activity: 5.1.3 -Final international stakeholder meeting |
| **Type of Document** | The deliverable includes the main information on the Third Stakeholder meeting and the FAIRSEA Final Conference: Invitation, Description of the both events, Agenda, Participant list/Signature sheets, Photos and Presentations |
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| **Responsible PP** | RERA, PP7 |
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# D5.1.3. Final International Stakeholder Meeting

**FAIRSEA – Fisheries in the Adriatic Region – a shared Ecosystem Approach**

FAIRSEA is financed by Interreg V-A IT-HR CBC Programme (Priority Axis 1 – Blue innovation)

*Start date: 01 January 2019*

*End date: 31 August 2021*

# Acronyms used

| | |
|---|---|
| **AB** | Advisory Board |
| **CFP** | Common Fisheries Policy |
| **EAF** | Ecosystem Approach to Fisheries |
| **EAFM** | Ecosystem Approach to Fisheries Management |
| **FAIRSEA** | Fisheries in the AdrIatic Region – a Shared Ecosystem Approach |
| **FS** | Factsheet |
| **JS** | Joint Secretariat |
| **KoM** | Kick-off Meeting |
| **LP** | Lead Partner |
| **MA** | Managing Authority |
| **OGS** | Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS |
| **PA** | Partnership Agreement |
| **PC** | Project Coordinator |
| **PM** | Project Manager |
| **PMU** | Project Management Unit |
| **PP** | Project Partner |
| **SC** | Subsidy Contract |
| **SC** | Steering Committee |
| **TC** | Technical Committee |
| **WP** | Work packages |

# Summary

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# About the project FAIRSEA

The FAIRSEA project aims at enhancing transnational capacity and cooperation in the field of an ecosystem approach to fisheries in the Adriatic region by exchanging knowledge and sharing good practices among partners. The complementary expertise of the partners is shared, interlinked and integrated, considering also challenges and opportunities identified by stakeholders. The efforts are embedded in a spatially explicit management platform that will allow to share expertise, create a common pool of knowledge, boost the operational application of the ecosystem approach to fisheries, enhance the competence in complex system dynamics, and foster a consensus on the state of the environment and fisheries in the region. The process developed in FAIRSEA will provide an opportunity to describe best practices and define guidelines for a sustainable fishery management.

# The Third International Stakeholder Meeting

The Third Stakeholder meeting was held on the 06th and the 07th of July 2021 in Split. Back-to-back and the FAIRSEA Final conference was organized on the 8th of July. Due to pandemic restrictions, the meetings were hybrid, with participants both in person and online. During the FAIRSEA Stakeholder meeting the main topic of the discussion was the outcomes of the project in terms of management strategies, obtained from the application of the integrated tools, as well as the ecological, environmental, economic and social components.

Through presentations by numerous speakers, the conference provided an introduction to the Ecosystem approach to fisheries (EAF) as well as the participatory tools used in the FAIRSEA project in terms of assessing management strategies based on the EAF concept. The conference enabled the connection and presentation of the results of other projects such as Adri.SmArtFish Interreg Italy-Croatia Project, SUSHI DROP Project - Interreg Italy Croatia ITACA - EU Project Prizefish.

## Agenda

# FAIRSEA

## Fisheries in the Adriatic Region – a shared Ecosystem Approach

FAIRSEA (ID 10046951) is financed by Interreg V-A IT-HR CBC
Programme (Priority Axis 1 – Blue innovation)

## Final international stakeholder meeting

6-7 July 2021, Split (Croatia)

www.italy-croatia.eu/fairsea

**7th July 2021**

Moderated by Sandra Barčot and Simone Libralato (OGS)

**h. 9:00-12:00 Scenarios of environmental changes and spatial management measures: from results to discussion**

9:00-9:15 Opening the event including the main outcomes of the first day (CNR-IRBIM Giuseppe Scarcella).

9:15-10:45 Brief demonstration of the integrated platform for EAF in the Adriatic and Ionian region (CNR-IRBIM Francesco Masnadi) and

Scenarios of effects of climate change on ecological resources (OGS) and discussion

*10:45-11:00 coffee break*

11:00-12:00 Interactive presentation and discussion on scenarios of spatial management with ecological and fisheries implications (OGS)

**h. 12:00-13:00 Synergy projects PRIZEFISH & FAIRSEA. A working example**

**How to exploit the potential of ecological, economic and social sustainability in Adriatic fisheries? Live Questions & Answers from Luca Mulazzani (UNIBO - fisheries economist) to a PO Representative (OP BIVALVIA - Mauro Vio).**

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## Agenda

**6th July 2021**

Moderated by Sandra Barčot and Giuseppe Scarcella (CNR-IRBIM)

**9:00-10:00 Opening of the event (MEDAC Rosa Caggiano and participating institutions) and introduction to the project (CNR-IRBIM Giuseppe Scarcella)**

**h. 10:00-13:00 Scenarios of management based on temporary fisheries bans and selectivity measures: from results to discussion.**

10:00-10:30 Brief demonstration of the integrated platform for EAF in the Adriatic and Ionian region (CNR-IRBIM - Francesco Masnadi) and
Management scenarios for the demersal resources in the Adriatic Sea: evaluation of the bio-economic impacts (Isabella Bitetto, COISPA)

10:30-11:00 Discussion

*11:00-11:15 coffee break*

11:15-11:30 Pilot actions for the management of the common sole fisheries in the North Adriatic area (Maria Teresa Spedicato, COISPA).

11:30-11:45 Preference Modelling to support participative processes toward the sustainable fishery management in Adriatic Sea (Pino Lembo, COISPA).

11:45-12:15 Discussion

12:15-13:00 Interactive presentation and discussion on scenarios of spatial management with ecological and fisheries implications (Tommaso Russo Univ Tor Vergata/CONISMA)

13:00 closure of the day

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# Participants and target groups

A total of 74 people in presence and online were participating to the final Stakeholder meeting. Participants were belonging to different target groups as in the following.

| Target group | Number achieved |
|---|---|
| Local, regional and national public authorities | 15 |
| Regional and local development agencies, chambers of commerce and other business support organizations | 6 |
| SMEs | 20 |
| Universities, technology transfer institutions, research institutions | 23 |
| NGOs, associations, innovation agencies, business incubators, cluster management bodies and networks | 10 |
| Education and training organisations as well as social partners and labor-market institutions | 0 |

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## Photos from the event

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European Regional Development Fund

# Presentations and main conclusions

(for each presentation the first slide is included and then the reporting is referring to discussion had in the Final Stakeholder meeting)



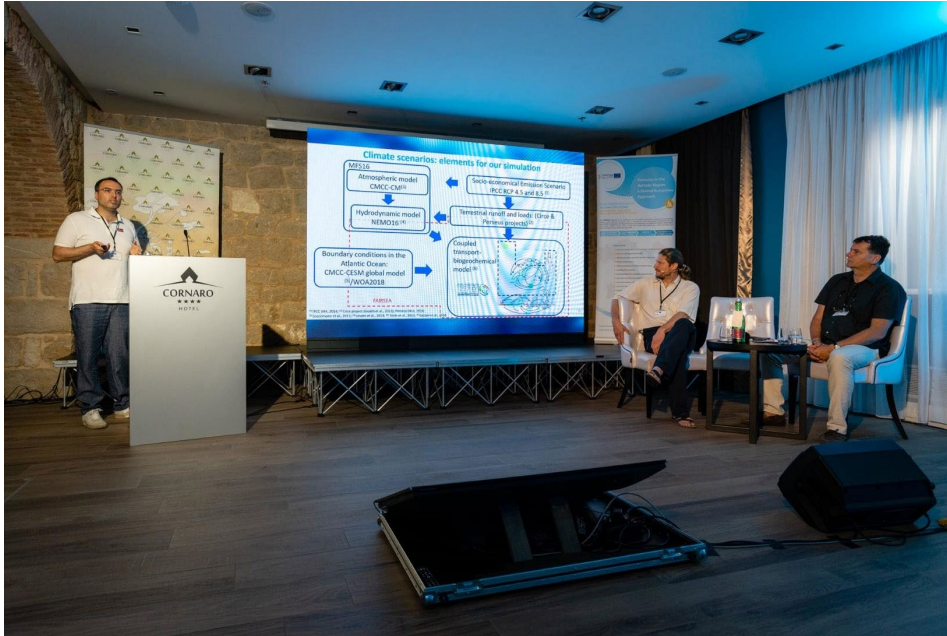The MEDAC welcomed the participants at the 3rd stakeholder meeting with the presentation carried out by Rosa Caggiano, Executive Secretary of the Mediterranean Advisory Council. The importance of a shared ecosystem approach is highlighted among the objectives of the Common Fishery Policy (Reg.EU 1380/2013) especially in case of multi-annul plans. The presentation included the explanation of the current and forthcoming management plans in the Adriatic sea, because they were the basis for the scenarios evaluated in the models. The presentation shown also the methodologies adopted for the stakeholder engagement in the WP5 of the project, providing details on the contents of the previous 2 international stakeholders meetings and the related outcomes relevant for the project and the management scenarios. Concluding the introduction to the final stakeholder meeting Rosa Caggiano explained the agenda of the 2 days.

The presentation opening the 3rd stakeholder meeting provided an overview of the project and the partners. The background included a description of the state of Adriatic fisheries:

- Stock assessments (STECF and SAC-GFCM) indicates critical status for assessed pelagic and demersal resources
- Landings variability due to several factors (environmental factors, long term changes, exploitation effects, regulations, etc)
- Establishment of large Fisheries regulated area (Pomo pit)
- Multi-target multi-gear fisheries.

Moreover, the ecosystem approach to fisheries has been explained and attention has been paid to the FAIRSEA rationale focusing on the:

- Aim: increase fisheries productions within a sustainable framework or at least identifying ways that assure a more economically efficient and sustainable harvesting of marine resources
- Method: Transboundary and transdisciplinary development of a conceptual and applied approach that facilitate an harmonised and optimised management.
- How: developing collectively an integrated platform for sharing efforts, sharing data, sharing methods and test solutions. A tool contributing to developing fisheries management plans .

On of the main outputs of the project is the platform, as integrated decision support tool, with the following features:

•Integration of environmental variability. Application of a transboundary and transdisciplinary approach that integrates physical, biochemical and biological processes
•Multispecies, multigear approach. Harmonised management can be achieved by going beyond single species and single gear approaches, and at the same time moving beyond boundaries.
•Fisheries displacements and fisheries socioeconomic drivers need to be included in the approach
•Moving toward an operational application of the ecosystem approach to fisheries useful for providing advice for management plans development.

The main result of FAIRSEA consists of an Integrated Platform for a quantitative ecosystem approach to fisheries that goes across territorial boundaries and involves several disciplines.

In the project, the development of the platform has been based also on the stakeholder involvement to:  Share objectives to reduce the risk to make something useless, Identify the perceived important factors to be embedded, Decide together scenarios to test and evaluate results. Furthermore, additional activities were explained as an essential part of the project: events to increase public awareness, tools development for discussion, schools aimed to increase capacities on ecosystem approach to fisheries and events aimed to improve the participatory approach.



The WP4 was dedicated to the development of the integrated platform (IP) for the quantitative ecosystem approach to fisheries. The presentation was explained by Francesco Masnadi (CNR).

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The platform integrated datasets from physics to bioeconomy of fisheries as a state of the art and decision support tool. FAIRSEA IP is a web-GIS application based on open source software, all services are deployed by Docker containers, main services are:

- Backend: REST API developed in Python with Django, Django Rest Framework and GeoDjango ;
- Frontend: a Single Page Application based on AngularJS with Angular Material framework;
- Database: PostgreSQL with PostGIS ;
- Gis software: Geoserver ;
- Charts and dashboards: Plotly and Grafana ;
- Other used libraries and services: GDAL, scipy, Shapely, netCDF4, Pandas, MapProxy, Pillow.
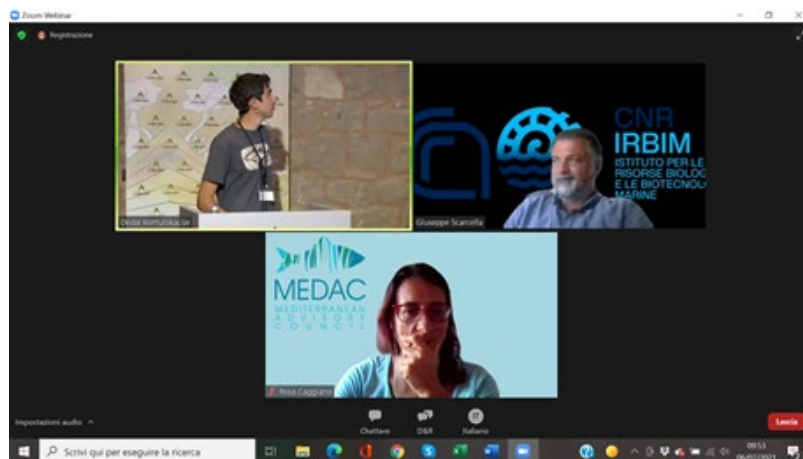


Within the platform the outputs can be easily mapped through different layers that can be activated or not thanks to an interactive legend. Through a drop-down menu you can choose to view different vertical and temporal levels. Each variable, excluding those of bottom, is presented as annually (mean) and seasonally (mean_JFM, mean_AMJ, mean_JAS and mean_OND) averages between vertical averaged levels: 0-50 m, 50-100 m, 100-200 m, 200-500 m and 500-800 m.
The presentation provided a short overview of the main features of each modules included in the platform:

- HYDRO – Hydrodynamic circulation and connectivity
- BGC – Biogeochemical processes and dynamics

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- BSTAT – Spatial distribution of marine resources
- FSTAT – Catches and fishing capacity by fleet segment
- EFFORT – Effort distribution and fleet displacement
- BIOECO – A multi-fleet and multi-stock platform for mixed fisheries
- FWM – Food web modelling

Finally, the summary module is an Iinteractive workspace between different modules. Possibility of simple calculations on the layers on a regional/county basis (mean, sum, min and max value). The presentation was concluded providing the link and credential to have the access to the platform.



The main objectives of the module BIOECO (A multi-fleet and multi-stock platform for mixed fisheries) were explained by Isabella Bitetto (COISPA), consisting on the investigation of the consequences of alternative scenarios, using BEMTOOL bio-economic model, to evaluate how changes/shifts in fishery-driven impacts (e.g. fishing mortality, fleet selectivity) and management or fishing strategies (e.g. closed season/areas, changes in fishing opportunity), affect stock and fisheries dynamics in terms of SSB, landings, discards and economic performance.

The simulation and forecast of management scenarios in BEMTOOL considered, after the transition phase:

- S0: status quo (no variations compared to 2021);

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- S1: linear reduction of 40% in FD until 2026 for trawlers and rapido toward the FMSY,combined (0.35 value), we used a combined RP considering the target species of the GFCM Recommendation instead of European hake FMSY (0.18)
- S2 (combination of measures): fleet selectivity improvements + spatial closure areas (within 6 nautical miles, until December) taking into account the presence of nurseries of the main target species in the same areas + 2 months of fishing bans for other gears (PGP 17-18 and DFN Croatia fishing ban in Feb and May; HOK GSA 18 March and May) + linear reduction of 25% in FD for trawlers and rapido fleets;
- MEY (Maximum Economic Yield); MEY considers the «optimum» taking into account the whole fishing effort deployed and takes as reference 3 economic indicators.

The conclusion of the simulation and forecast of management scenarios in BEMTOOL was explained showing the traffic lights for total revenues by fleet and mainly the scenario 2 performed better than scenario1 for all the fleets in terms of total revenues.



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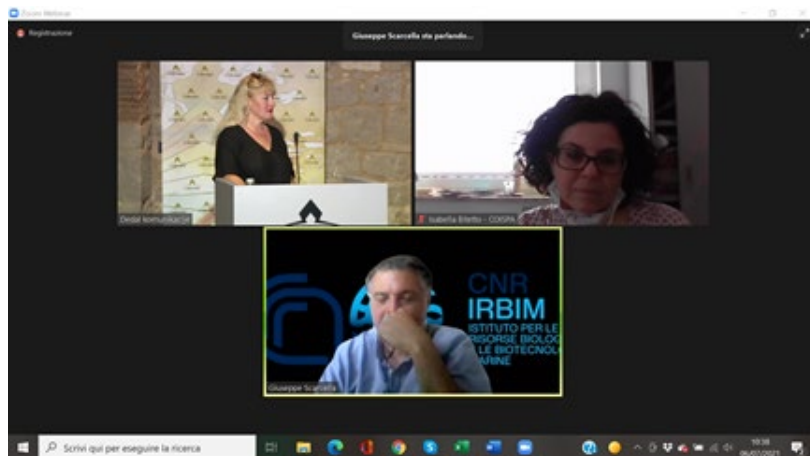
Pilot actions for the management of the common sole fisheries in the North Adriatic area

FAIRSEA| COISPA | Maria Teresa Spedicato, Isabella Bitetto and Giuseppe Lembo

3rd INTERNATIONAL STAKEHOLDER MEETING
July 6-7 2021, Split Croatia

European Regional Development Fund

The presentation on Pilot actions for the management of the commonsole fisheries in the North Adriatic Sea was explained by Maria Teresa Spedicato (COISPA). Inputs were coming from MPS (Ministarstvo Poljoprivrede) and IOF (institute of Oceanography and fisheries - Split) in the croatian side, and from Assam (Agenzia Servizi Settore Agroalimentare delle Marche) and IRBIM (Istituto per le Risorse Biologiche e le Biotecnologie Marine) in the italian side. The target species was Common sole (*Solea solea*)  caught by trammel nets in Istria country and by beam trawlers in the Marche region, focusing on GSA17. Scenarios tested were the following:

| Scenarios | Fishery/Fleet | Measure |
|---|---|---|
| Scenario 1-Istria | Croatia DNF Nord | increase length at first capture (2cm) |
| Scenario 2-Istria | whole Croatia DNF | increase length at first capture (2cm) |
| Scenario 1-Marche | TBB Marche | improve fleet selectivity, extending the fishing prohibition within 6 nautical miles to December |
| Scenario 2 Marche | TBB Marche | improve fleet selectivity implementing the fishing prohibition within 9 nautical miles in October, extended to December |
| Scenario 3 | GSA17 | Combine scenario 1-Istria, scenario 1-Marche, extending the scenario 1 Marche to the other Italian Regions and to DTS, includes a fishing ban of 1 month (November) for Italian SSF |
| Status Quo | All | No changes from the current situation |

The lessons learnt from the new scenarios implemented were:
    a. Extending best practices of Istria small scale improvement on selectivity to the western Adriatic fleets adopting a fishing ban of 1 month in winter time would not negatively affect the fleet performance and will improve the exploitation pattern;

b. Extending to the other beam trawlers and trawlers the measure implemented for Marche beam trawlers, as regards the extension of the fishing prohibition within 6 nautical miles to December, appears more equitable for the whole fleet.
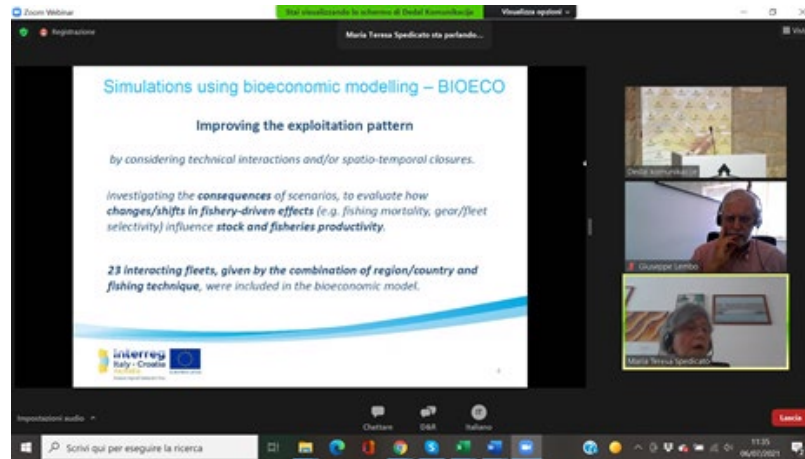


The following presentation was shown by Giuseppe Lembo (COISPA) on the Preference Modelling to support participative processes toward sustainable fishery management in the Adriatic Sea. The first slide explained the approach adopted for participatory management. During the events of the project, priorities and sensitive issues raised by stakeholders have been discussed and a questionnaire has been fulfilled in order to collect their perspectives about the fishery sustainability:



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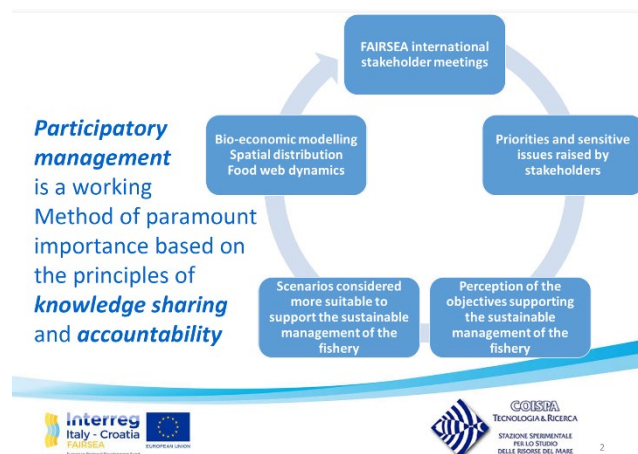
- the perception of the science objectives in supporting the sustainable management of the fishery,
- the perception of the indicators applied in stock assessments to achieve the previous objectives,
- the scenarios considered most important/useful in order to support the sustainable management of the fishery.

The final remarks included:
➢ Preserve safe level of reproductive potential is considered the most relevant objective of the fishery sustainability.
➢ Scenarios based on the improving of the exploitation pattern based on spatial and temporal closure are considered the most relevant.
➢ The Analytic Hierarchy Process (AHP) converts stakeholder's judgement into numerical values, allowing to compare different and often conflicting opinions and find optimal solutions in a rationale way.
➢ A further benefit of AHP is the stakeholder engagement in a fair decisionmaking process, which minimises the risk that the participatory process is mainly driven by bold positions/judgements. It is also worth mentioning that AHP allows to identify and manage those responses which are incoherent and then can bias the results.
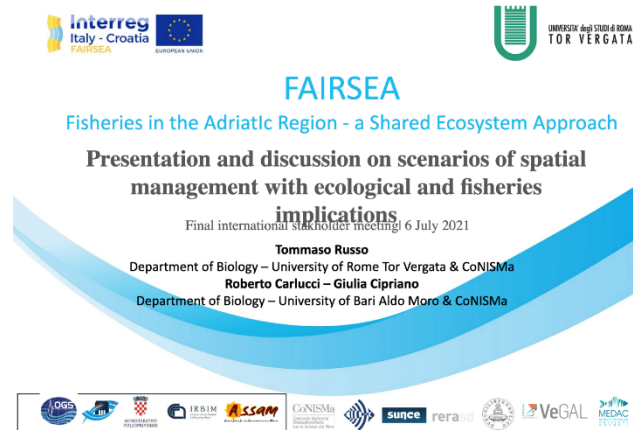
The presentation of scenarios of spatial management with ecological and fisheries implications was carried out by Tommaso Russo (CoNISMa). The main aspects of SMART are the following:

- individual-based
- Bio-economic evaluations
- Interspecies relation-ship
- Combination of different management approaches
- Spatially-explicit (Displacement)

The scenarios considered the current and forthcoming management measures in the area:

- Scenario #1: Status quo (including the Pomo FRA) and the MAP
- Scenario #2: Scenario #1 + closure of the 6 nautical miles zone
- Scenario #3: Scenario #1 + effort reduction up to 30% in 3 years
- Scenario #4: Scenario #1 + Extended late summer ban (total stop in Sept/Oct, - 40% in Nov)

The main discussion points raised up in this module are the following:

•The decrease in fishing effort is challenging for the industry;

•The outputs of modelling approaches (BEMTOOL - SMART) were discussed;

•Impact of recreational/artisanal on the resources;

•Importance of data collection and implementation of a tool as the integrated platform;

•Implementation of pilot actions as common sole can help the management and decision making process;

•Crucial importance of a participatory approach as applied in FAIRSEA.

After the questions and the debate of the participants, the chair of the meeting summarised the main points and conclusions raised during the meeting.

FAIRSEA
The food web models developed over the past 20 years of data
Activity 4.7.
FAIRSEA| OGS | Igor Celić, Pasquale Ricci, Natalia Serpetti, Roberto Carlucci, Giulia Cipriano, *et al.*, Simone Libralato
| Split, Croatia | 7 July 2021

European Regional Development Fund

In the second day of the meeting (7 July) the objective of the agenda was to pass from the results of the scenarios of environmental changes and spatial management measures to the debate and possible solutions. After a summary of the main points raised on the first day of the final international stakeholder meeting, a presentation on the food web models developed over the past 20 years of data was explained by Igor Celić (OGS). The presentation explained how the food web model takes into consideration the biological and interspecific dynamic and the model structure. The spatial domain, the species considered and the fisheries considered in the model were schematically resumed. Various datasets have been analysed to have enough data for the model, considering catch, landing and discard data for the Adriatic countries.

After the description of the application of the ECOSPACE model in the Adriatic Sea, a demonstration of the integrated platform for EAF in the Adriatic and Ionian region (CNR-IRBIM Francesco Masnadi) was carried out.



FAIRSEA
Fisheries in the Adriatic Region - a Shared Ecosystem Approach

**Scenarios of spatial management with ecological and fisheries implications**

3rd international stakeholder meeting| 7 July 2021 | Split

Natalia Serpetti, Igor Celic, Pasquale Ricci, Davide Agnetta, Diego Panzeri, Roberto Carlucci, **Simone Libralato**

# Final discussion

The final part of the Final Stakeholder meeting was conceived as a live discussion based on a synergic interaction by two Interreg projects.

**Synergy projects PRIZEFISH & FAIRSEA. A working example**
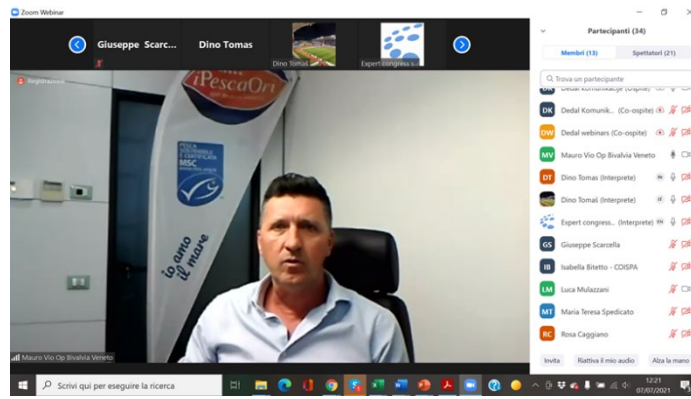


How to exploit the potential of ecological, economic and social sustainability in Adriatic fisheries? Live Questions & Answers from Luca Mulazzani (UNIBO - fisheries economist) to a PO Representative (OP BIVALVIA - Mauro Vio).

1)    Clam management is characterised by the existence of COGEMO or COGEVO consortia. Many of the people who listen to us may think that this is a very special fishery, whose successes can hardly be generalized to other types where consortia do not exist. I ask you: what kind of relations (formal and informal) exist between OP Bivalvia and the COGEVO of Veneto? In what way are COGEVO important for the efficient operation of the OP? And so, if absurdly no longer existed the COGEVO, what should be the functions that the OP should incorporate? Do you think it would be feasible?

2)    How are the daily quantities that each vessel of the PO fishes decided on? Is it based only on biological parameters (ie how much resource is at sea) or depends on the orders

received from your customers? And the price that will be paid to individual fishermen is already known when he goes to sea or will only be after landing the clams?

3) Could you describe what kind of bargaining takes place on a daily basis between the PO and the different customers? Does the PO have any way of affecting the price, for example by limiting the quantities fished, or is the price decided exclusively by the buyers?

4) We know that OP Bivalvia is a cooperative, so members during the assembly have to take important decisions on how to divide the company's profits between rebates and investments. Without going into too much detail, could you tell us what kind of choices the cooperative takes on average in terms of investment?

5) Veneto clams are the first product in the whole Mediterranean to have obtained the MSC certification. What would you balance the costs and benefits of this operation? Do your customers value this certification or has the price of your clams remained almost unchanged?

6) You have invested a lot to add value to your product. You have freezing implants, and now you're thinking about new forms of transformation. What are the advantages of being able to sell processed products as well as fresh products?

7) You have recently started selling products through social networks and distributing them door-to-door. For a big company like yours, it looks like a marginal business. What do you think of the prospects for this form of sales and distribution?