FAIRSEA (ID 10046951)

"Fisheries in the AdriatIc Region - a Shared Ecosystem Approach"

D.5.1.2 – Report of the second International Stakeholder Meeting

Work Package:	WP: WP5 "Decision support system for the development of sustainable fisheries" Activity: Act. 5.1 "Planning and organising Adriatic stakeholder events"
Type of Document	Report of the Second Stakeholder Meeting held online, 23 & 24 February 2021 including the outcomes of the participatory process.
Use	Public
Responsible PP	PP11
Authors	Rosa Caggiano (PP11-MEDAC); Giuseppe Lembo (PP5-COISPA); Marzia Piron (PP11-MEDAC); Francesca Perretta (PP4-ASSAM); Simone Libralato (LP-OGS); Danijela Miokovic (PP2-MPS); Andrea Pio di Leo, Cinzia Gozzo, Paolo Valeri (PP9).
Version and date	Version 1, 01/07/2021

Deliverable 5.1.2

Second 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

Contents

Executive summary 4
INTRODUCTION 5
About FAIRSEA Project 5
Project specific objectives 5
Decision support system for the development of sustainable fisheries 6
Planning and organizing Adriatic stakeholder events 7
The second international stakeholder meeting 7
Main objective, specific objectives, concept note 7
Methodology and event information 8
Planning the meeting 8
Implementing the meeting 9
Meeting follow-up 10
Speakers 10
Main outcomes and feed-back from international stakeholder 11
First day (23 February 2021) – Management scenarios 11
Final remarks from First day of the participatory approach 17
Second day (24 February 2021)- Pilot actions. 19
Working group 1: the “Management Area in the North Adriatic Sea and socio-economic effects of different management scenarios for common sole 20
Working group 2: “Decision support tool applied to the management of the Veneto professional and recreational fisheries” 22
Concluding remarks of the second day 23
Conclusions 24
Target group reached 25
Annexes 26

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
GFCM	General Fisheries Commission for the Mediterranean
JS	Joint Secretariat
KoM	Kick-off Meeting
LP	Lead Partner
MA	Managing Authority
MCDA	Multi-Criteria Decision Analisys
MAP	Multi Annual Plan
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
TAC	Total Allowable Catches
TC	Technical Committee
WP	Work packages

Executive summary

The activity 5.1 includes the three international stakeholders' events, at the beginning, in an intermediate phase and at the end of the project. Special attention has been paid to have the highest possible number of participants, careful check on their representativeness for the sector and the communication language. During the meeting the planned objectives were reached including: the dissemination of FAIRSEA outcomes, the data collection on stakeholders' opinion about the current and the forthcoming Multiannual Management Plan (MAP) in the Adriatic Sea, the dissemination of preliminary results carried out by pilot actions (MPS, ASSAM, VeGal, COISPA), and the data collection for MCDA. The presentations at the beginning of the first day provided the information needed to the working groups to debate on the management measures already in place and forthcoming in the Adriatic Sea. While the progresses already reached in the pilot actions were explained at the beginning of the second day in order to provide the basis for further improvement of the activities and models developed so far. So, during the Second Stakeholder meeting the consultation was effective and provided the information needed to include the stakeholder perspective on the possible management options in the activity 4.8 and then considering the effects of the preferences in the integrated platform.

INTRODUCTION

About FAIRSEA Project

The FAIRSEA is a European Territory Cooperation project financed under the priority 1 "Blue innovation", Specific Objective 1.1 "Enhance the framework conditions for innovation in the relevant sectors of the blue economy within the cooperation area" of the INTERREG V-A Italy –Croatia Programme 2014-2020. The project focuses on the fisheries sector, key driver for the blue growth of the Adriatic communities, towards a sustainable co-management of resources and marine ecosystem protection. The transboundary nature of marine resources requires a cross-border cooperation and a shared "Vision" to properly tackle and address the different socio-economic and environmental challenges related to fisheries activities management. In this context, FAIRSEA Project aims at enhancing transnational capacity and cooperation in order to promote the sharing of knowledge and good practices between regional and transnational key actors in the sector of sustainable fisheries management in the Adriatic Sea as well as to implement innovative approaches adopting an ecosystem approach to fisheries (EAF). Coordinated by the OGS of Trieste (IT), the project involves a consortium of 12 strategic and operational partners from Italy and Croatia that will make to best use of their complementary expertise to address and support the application of the EAF ensuring a strong and interactive engagement of institutional, technical and socio-economic stakeholder in project activities.

Project specific objectives

The overall objective of FAIRSEA Project is the development of an integrated platform for a quantitative ecosystem approach to fisheries that goes across territorial boundaries and across several disciplines. The platform integrates biological/ecological processes (i.e. considering water mass circulation, physical-chemical properties, plankton productivity, dynamics of resources including their interactions) and fisheries bio-economic dynamics (including fisheries displacement). This high technological and innovative platform is used as a basis for planning and in order to implement demonstrative testing of applicable fisheries policies both at local (subareas) and Adriatic scales. It provides a scientific basis for formulating and evaluating the shared management advice in the local and international participatory processes, involving management authorities, experts and stakeholders. The Project also provides an answer to the need of reference points, best practices and guidelines

for the optimisation between ecological and socio-economical sustainability of fisheries in the Adriatic Sea.

Decision support system for the development of sustainable fisheries

This WP is dedicated to the full development of a participatory process for the definition of management scenarios that is shaped accounting for the integrated multiple processes embedded in the tool developed in WP4. WP5 aims at enhancing collaborative and participated definition of management pathways/actions through professional facilitation techniques and the involvement of a range of key stakeholders, particularly fishermen and NGOs, organised in a multi-stakeholder platform, and representatives from all partners. Three large multi-stakeholder events were planned at the beginning, in the middle, and at the end of the project. These meetings aim at a) building the decision trees for the preference modelling (MCDA) developed in the Activity 4.8 (see "D.4.8.3 Developed preference modelling approach (MCDA)"); b) outreaching stakeholders to elicit their perspectives in terms of indicators for fishery sustainability; c) collecting and prioritising stakeholders' preferences in terms of alternative management strategies. The attainment of such objectives allow gathering the weighing factors for ranking the scenarios modelled in WP4. Implementation of local management actions in the integrated decision support tool will result in applicative pilot actions demonstrative of operative use and potential insights that can be gained from the shared integrated approach. Local management actions emerged from close interactions among all the project's actors foreseen in WP3 and result in the design of pilot actions of the Activity 5.2 (see "D5.2.1 Report on the resulting scenarios of application of local management measures"). The integrated tool at Adriatic basin level is also used for the design of basin-wide management scenarios (Activity 5.3). The impacts (ecological, economic and social) of the management scenarios modelled using the integrated platform will be evaluated and thoroughly discussed during the third stakeholder event.

Planning and organizing Adriatic stakeholder events

The activity 5.1 includes the three international stakeholders' events, at the beginning, in an intermediate phase and at the end of the project. Special attention has been paid to have the highest possible number of participants, careful check on their representativeness for the sector and the communication language. All the relevant documents have been translated and interpretation has been provided during the meeting to support active participation. The feedback processes has been ensured during the second stakeholder meeting through the explanation of the results obtained during the first one. The event agendas included plenary presentations and focus groups for drafting action plans. The first and second meeting included respectively the specifications for the decision trees and the administration of specific questionnaires to elicit preferences for the MCDA. The final meeting will discuss the application of the integrated tool to a case study of wide interest, as the exploration of management scenarios for selected stocks (e.g. hake/anchovy/sardine), taking into account the spatial and temporal dimensions.

The second international stakeholder meeting

Main objective, specific objectives, concept note

During second stakeholder meeting, preferences for the MCDA implementation have been elicited through questionnaires delivered to a wide range of stakeholders. This meeting provided also inputs for the pilot actions. A report of the meeting has been produced including meeting discussion, description of the database of stakeholders' responses to the questionnaires and specifications on the pilot actions.

The specific objectives of the meeting included:
- Dissemination of FAIRSEA outcomes and objectives
- Data collection on stakeholders' opinion about the current and the forthcoming Multiannual Management Plan (MAP) in the Adriatic Sea
- Dissemination of preliminary results carried out by pilot actions (MPS, ASSAM, VeGal, COISPA)
- Data collection for MCDA

Methodology and event information

Due to pandemic the second international stakeholder meeting was arranged in on-line modality, however it has been planned and implemented so to ensure the stakeholder interactive engagement. In order to fulfil this objective invitations have been sent to a broad group of stakeholders previously identified through the stakeholder mapping (see updates of the " D 2.1.4 Stakeholder mapping"). Non discriminatory and equality principles were carefully considered in the invitation, in particular participation in the event was open on equal terms to all persons, irrespective of their nationality, gender, age, religion, ethnic origin and sexual orientation. Nevertheless, the difficulties for some stakeholders to participate in meetings online resulted in some impacts of the COVID pandemic to the event. In particular the participation of SMEs was impacted, possibly due to the online modality of the event.

- In order to assure a successful participatory approach an external and experienced team of experts was involved. Experts of the team of Prof. Alessio Cavicchi from University of Macerata were involved for the participatory approach.
- In order to facilitate participation and intervention of stakeholders to the discussion, online simultaneous translation was done during the event.
- In order to have maximum flexibility in terms of group work, exchanges of information, control of multiple languages etc, the platform KUDO was used.
-

Planning the meeting

MEDAC, working in close cooperation with project partners, coordinated the planning phase that consisted in the following steps:

- technical contents and meeting concept note delivery
- appointment of a team of experts on facilitation processes and participatory approaches
- definition of most adequate participatory tools and of the meeting structure
- identification and categorization into a list for invitation of key stakeholder at local, national and transnational level
- preparation of the event material: save the date, programme and invitation; questions and presentations
- Dissemination of the event
- Stakeholder recall

The meeting material was translated in English, Italian and Croatian language.

Implementing the meeting

The 2nd international stakeholder meeting was held on 23 and 24 February 2021 using Kudo, a multilingual web conferencing platform. The meeting had, in fact, live interpretation in the 3 languages to allow the widest possible participation, especially of fishers and fishers associations.

Both days of the meeting were structured as follows:

- Plenary session to introduce the meeting key topics
- Parallel Working Groups to engage and accompany stakeholder into discussion
- Plenary session to share Working Groups main findings

Special attention has been paid in providing the relevant information to the stakeholder attending at the meeting **before the debate and the parallel working sessions.** Therefore, the first part of the agenda of the first day was dedicated to an update about the outcomes of FAIRSEA project, including the innovative approach of the platform and the first results of the participatory process to shape objectives and management scenarios. The current and forthcoming management measures on demersal and pelagic species in the Adriatic Sea were explained in order to provide the information needed for the working groups.

Considering that the management measures differ mainly for target stocks, the parallel working sessions "Have your say on Management Measures in the Adriatic Sea" were divided according to the target species of the fishery.
Stakeholder attending the meeting were free to choose their Working Group of interest.
Each Working Group foresaw n.2 external facilitators to moderate and accompany the discussion as well as to ensure a balanced speaking time of each participant.
The Groups set-up worked in parallel. The participants introduced each other and intervened on key topics, presenting and exchanging within the Group then their experience, their needs and ideas individually. Then, the facilitator asked to prioritize the ideas emerged from the discussion and collect the information needed for MCDA based on COISPA questionnaire. The Groups working covered 1 hours and the facilitators of each Group took

notes for the "Instant Report" on a common template. In the plenary sessions, the main outcomes from each Working Group were reported and shared with participants.

Meeting follow-up

The meeting material (presentation, questionnaires) has been shared with participants and uploaded in MEDAC web-page. . The meeting findings were collected and merged by MEDAC - in cooperation with involved partners - in the present Report, After the working groups, the presentation of the questionnaires (see annexes) aimed to collect the inputs from stakeholders for comparing management scenarios has been carried out in order to allow participants to fill out the online questionnaire, and the results have been collected by COISPA in order to provide the information needed for the WP4.
More than 80 stakeholders from university and research, public administration and socio-economic sector attended the 2nd international stakeholder meeting.

Speakers

Giampaolo Buonfiglio, Chair of the Mediterranean Advisory Council (MEDAC) and Simone Libralato, OGS Lead partner - The Ecosystem approach and the aim of the Stakeholder meeting
Alessio Cavicchi, University of Macerata as moderator
Francesco Masnadi, CNR - First outcomes from the participatory process to shape objectives and management scenarios
Marzia Piron, MEDAC - Current and forthcoming management measures on demersal and pelagic species in the Adriatic Sea
Danijela Miokovic, MPS, The FAIRSEA Pilot Actions in the Adriatic Sea, management scenarios in North Adriatic Sanctuary: changing selectivity of trammel nets
Paolo Valeri, VeGal - Decision support tool applied to the management of the Veneto professional and recreational fisheries
Uriano Meconi, ASSAM - Socio-economic effects of different management scenarios applied to Rapido trawl fishery targeting common sole in Marche Region
Maria Teresa Spedicato, COISPA, and Simone Libralato, OGS - Preliminary results of Pilot Actions case studies by COISPA and OGS
Giuseppe Lembo, COISPA, Inputs from stakeholders (questionnaire) for comparing management scenarios

Main outcomes and feed-back from international stakeholder

First day (23 February 2021) – Management scenarios

Figure 1 - Agenda of the 2nd international stakeholder meeting: day 1

23rd FEBRUARY 2021

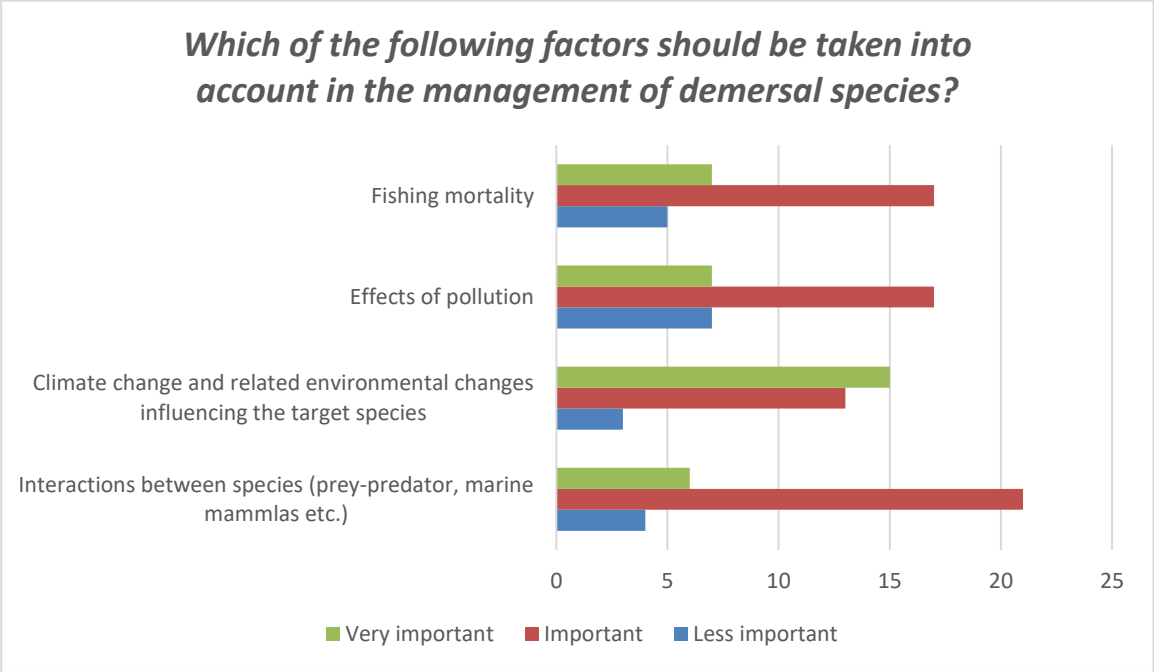
First outcomes of FAIRSEA project and your opinions on management in the Adriatic Sea - *The ecosystem approach applied in the Adriatic Sea would provide a new perspective on the current and forthcoming management measures: have your say during the event*

PLENARY SESSION *Introduction by Giampaolo Buonfiglio (MEDAC) and University of Macerata as moderator*	
9:30 - 10:00	The Ecosystem approach and the aim of the Stakeholder meeting (OGS, MEDAC)
10:00 - 10:20	The innovative approach of the FAIRSEA platform (CNR-IRBIM)
10:20 - 10:40	First outcomes from the participatory process to shape objectives and management scenarios (COISPA)
10:40 - 11:00	Current and forthcoming management measures on demersal and pelagic species in the Adriatic Sea
11:00 - 11:40	**PARALLEL WORKING SESSIONS** - *Facilitated by University of Macerata* **"Have your say on Management Measures in the Adriatic Sea"**
11.40 - 12.00	Break
PLENARY SESSION *Moderated by University of Macerata*	
12:00 - 12:30	Instant Working Groups Report presentation, feed-back from project partners, conclusions and key messages

On the basis of the information needed for the MCDA and the management scenarios to be assessed in the WP4, the following information has been collected during both parallel sessions in the first day (23 February).

In the group of demersal species all the suggested factors were considered as important in the management of these marine resources (graph.1). Only the climate change and related

environmental changes influencing the target species were considered very important in most of the answers.



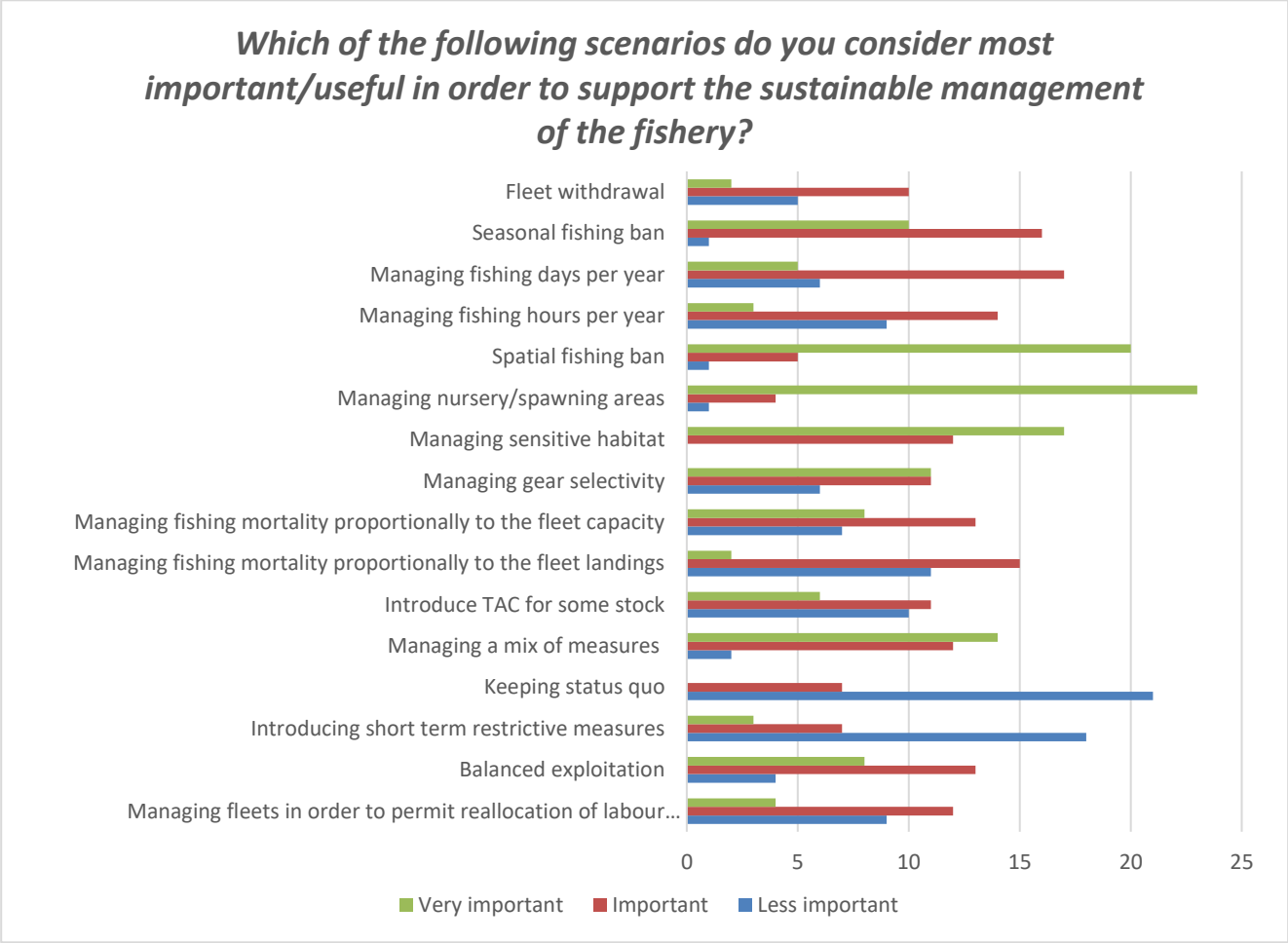
Graph.1 - Which of the following factors should be taken into account in the management of demersal species?

The main points raised up by participants considering the question are:

- By researchers:
  - The impact of pollution was less considered then expected
  - The factors to be taken into consideration in the management should be better explained and stakeholder should pay more attention on this information
  - The fishing mortality and the status of the stocks should be assessed considering the area and the climatic and morphological changes in the areas. *Nephrops norvegicus*, for instance, should be analysed by dividing the GSA 17 and 18
- By fishers:
  - The stock assessment results should take into account the climate change, as factor influencing the trend of species status
- By Public administration:

- The pattern of various species is cyclical due to environmental and climatic fluctuations and it must be taken into account.

The second question debated in the demersal group was related to the choice of the scenarios to be considered most important/useful in order to support the sustainable management of fishery.



Graph 2 - Which of the following scenarios do you consider most important/useful in order to support the sustainable management of the fishery? Demersal fishery

The main points raised up by participants about this topic are the following:

- By researchers:

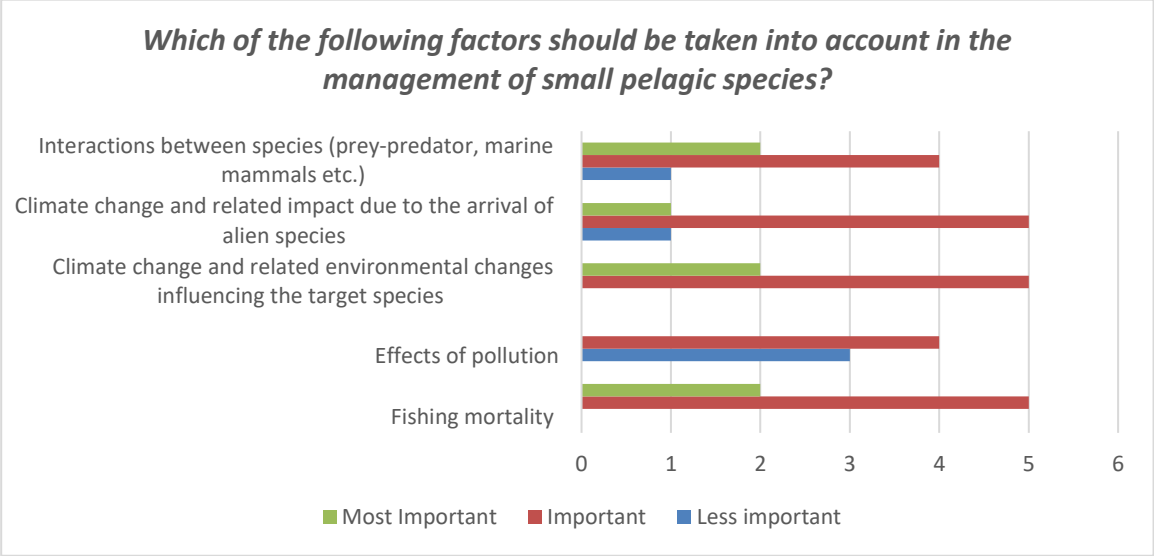
  - The results highlight an evolution of the perception of TAC: it seems that a viable solution could be a mixed management including quotas of effort and quotas of catches
  - The spatial management can be a key mechanism in the fishery regulation
  - The management measures should be tailored to the different geographical areas
  - The status quo is not considered as a viable solution and the agreement on this is the first step toward the sustainable management
  - Consequences of the last effort and catches reduction should be assessed before the implementation of further measures
- By fishers:
  - The current measures on fishing days and fishing hours are difficult to be implemented: the fishing day/week should be planned on the basis of the hours
  - The opinions change also on a geographical basis
  - In some areas the TAC system heavily impacted on the socioeconomic sustainability of fishing activities
  - The spatiotemporal management can be a viable solution
- By Public administration:
  - The "spatial management" seems to be prevalent on the "fishing days"
  - An agreed governance in a shared sea, such as the Adriatic, and the institutional dialogue should be implemented.

Therefore, in addition to the results showed in the graph 2, the following considerations raised up from the debate between participants:

- The importance of nursery and spawning areas for the appearance and re-appearance of some species
- Influence of climatic factors and breakwaters barriers for the appearance and re-appearance of some species
- Importance of the spatial management instead the temporal one
- Negative impact of TAC on demersal fishery
- Need of assessment of management measures already in place and better dissemination of the results
- Need of governance in a shared sea and better institutional dialogue

- Importance of cooperation between fishing operators.

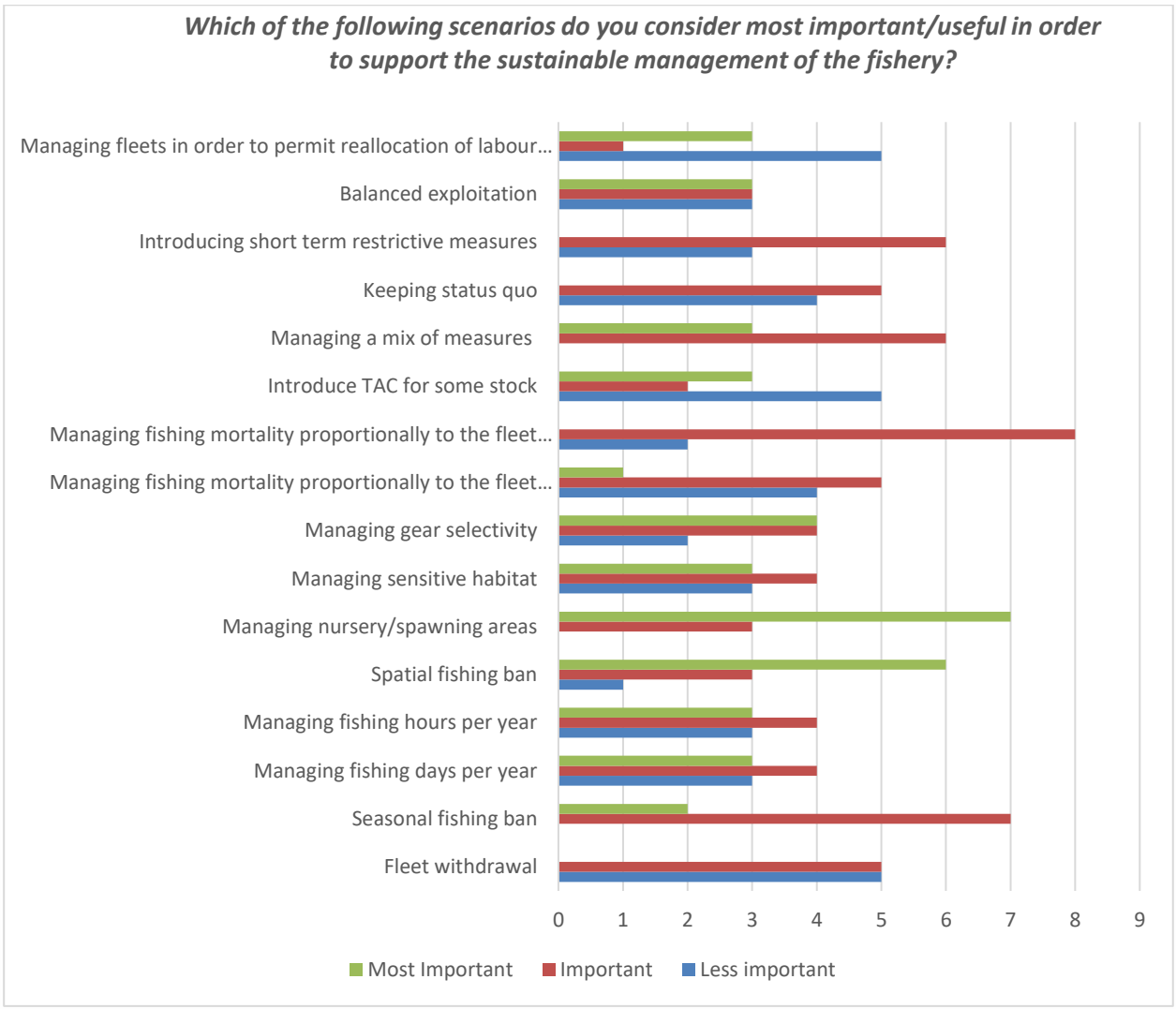
Concerning the results related to the questions submitted during the working group on small pelagics, all the factors listed as possible answers were considered important. The highest values were reached by "interactions between species", "climate change and related impact due to the arrival of alien species" and "fishing mortality". Nobody evaluated the last one as "less important". Therefore, it means that it is a shared thought that fishing mortality cannot be considered as a "less important" factor in the management of small pelagic species.



Graph 3 - Which of the following factors should be taken into account in the management of small pelagic species?

Regarding the scenarios considered most important/useful in order to support the sustainable management of the fishery, the options reaching the vote "most important" more than the others one were "managing nursery/spawning areas" and "spatial fishing ban." However, the answers "introducing short term restrictive measures", managing a mix of measures", "managing fishing mortality proportionally to the fleet capacity" and the "seasonal fishing ban" were considered as important in most cases. The scenarios with the highest number of "less important" answers are: "managing fleets in order to permit reallocation of labour between fleets", "introduce TAC for some stocks" and "fleet withdrawal".

Some Croatian fishers attending at the working group on small pelagics highlighted the importance of the difference between “fishing hours” and “fishing days”, because they are strictly linked to the fishing gear considered. Moreover, the same professionals explained that the “status quo” doesn’t exist because in the last years the management measures were changed every year. Therefore, in their view more information should be provided in the description of the scenario.



Graph 4 - Which of the following scenarios do you consider most important/useful in order to support the sustainable management of the fishery? Small pelagic fisheries

The fishers attending the working group on small pelagics highlighted that the nursery areas and the seasonal fishing ban are already implemented in the countries involved in the project.

The main points raised up by participants considering the question are:

- The TAC/quotas system is unsuitable in the management of small pelagics in the Adriatic Sea
- The spatio-temporal management is important because the habitat, nursery and environment can be taken into account
- The fish monitoring (echosurvey) and the models of stock assessment should be improved in order to support the fishing activities
- Research activities should deepen the protection and improvement of fishing activities (not only considering the stock status)
- More attention should be dedicated to the social aspects of fishery sustainability (considering also the traditional aspects and the livelihood of the coastal communities in the islands).

Final remarks from First day of the participatory approach

In the final plenary session of the day, fishers highlighted their disagreement with the quota system: the risk is that the quotas will be granted to few privileged people. A researcher attending at the meeting replied that most often the quota system is not applied for political reasons. The scientific research in the Mediterranean is not well funded as well as in the North Sea, therefore the outcomes are limited to stock assessment. The Croatian fishers commented that although the difficulties of researchers are understandable, the assessment methodology causes consequences on the livelihood and the work of fishers. They highlighted that the researcher's activity should be supported enough to allow the best reliability of the results. The objective should be the survivability of the fishery sector and it must be balanced to the stock protection.

During the debate, relevant information has been provided in relation to some issues raised up:

- The status quo means that the last management measures adopted will be not implemented in the future

- The representativeness of the scenarios cannot include all the aspects of the fishery sector in the first stage: the method “step by step” allows to address progressively the complexity of the factors to be included in the description of the sector in order to improve the reliability as much as possible. On the other side, the scenarios selected by the stakeholders could not be the best options in terms of effect according to the area or the interested stakeholders: the project will provide the broader possible evaluation of these aspects, including the ecological ones.
- Some researchers confirmed that the TAC system is more effective when fishery is more selective.
- The traditional aspects of the fishing activities and their linkages with the local communities should be enhanced.

Second day (24 February 2021)- Pilot actions.

Figure 2 - Agenda of the 2nd international stakeholder meeting: day 2

24th FEBRUARY 2021

The FAIRSEA pilot actions - North Adriatic Sanctuary, Veneto & FVG, and Marche Region: what about the next steps? - *Management measures have been envisaged with stakeholders at local level and the effects have been preliminary assessed: have your say on the next steps.*

PLENARY SESSION *Moderated by University of Macerata*	
9:30 - 10:00	The FAIRSEA Pilot Actions in the Adriatic Sea, management scenarios in: - North Adriatic Sanctuary: changing selectivity of trammel nets (MPS) - Decision support tool applied to the management of the Veneto professional and recreational fisheries (VeGal) - Socio-economic effects of different management scenarios applied to Rapido trawl fishery targeting common sole in Marche Region (ASSAM)
10:00 - 10:30	Preliminary results of Pilot Actions case studies by COISPA and OGS
10:30 - 11:30	**PARALLEL WORKING SESSIONS** - *Facilitated by University of Macerata* "**Have your say**: **debate and inputs from stakeholders on the next steps of pilot actions"** Inputs from stakeholders (questionnaire) for comparing management scenarios (COISPA) WORKING GROUP 1: "North Adriatic Sanctuary and socio-economic effects of different management scenarios for common sole" WORKING GROUP 2 "Decision support tool applied to the management of the Veneto professional and recreational fisheries"
11.30 - 11.45	Break
PLENARY SESSION *Moderated by University of Macerata*	
11:45 - 12:00	Instant Working Groups Report presentation, feed-back from project partners, conclusions and key messages
12:00 - 12:30	**FINAL CONCLUSIONS AND KEY MESSAGES FROM THE 2nd STAKEHOLDER MEETING**

On 24 February the meeting was opened with the presentations of the pilot actions (see the attached agenda) and the related management scenarios:

- North Adriatic Sanctuary: changing selectivity of trammel nets
- Decision support tool applied to the management of the Veneto professional and recreational fisheries
- Socio-economic effects of different management scenarios applied to Rapido trawl fishery targeting common sole in Marche Region

Then, the participatory process was facilitated by the team of the University of Macerata and the plenary was divided in two parallel working session: the "Management Area in the North Adriatic Sea and socio-economic effects of different management scenarios for common sole", and "Decision support tool applied to the management of the Veneto professional and recreational fisheries".
Before entering details of the questions, a public authority participating at the meeting highlighted the main issues related to the return of enterprises, governance and communication:

- The impact of administrative and bureaucratic costs of enterprises profitability
- The need of a shared governance based on dialogue and participation in the Adriatic basin
- The need of a monitoring activity of the current actions taken and an effective dissemination.

After this speech, the working group addressing the topic of common sole (*Solea solea*) opened the debate asking to the participants the opinion on the status of the stock and about effectiveness of the fishery ban in the 6 nm after the seasonal fishing ban.

Working group 1: the "Management Area in the North Adriatic Sea and socio-economic effects of different management scenarios for common sole

This WG was populated by 42 participants (17 croatian and 25 italian), divided into public administration (8), researchers (14), fisheries cooperatives (5), fishermen (3), NGOs (3), others (8).

In relation to the introduction of management actions foreseen in the scenarios, a Croatian small-scale fisherman expressed his support to the improvement of selectivity of the mesh sizes and to the establishment of no take zones. However, the management measures should be implemented both in the Istrian and in the Italian coast (from Veneto to Marche region) and to all the fleet segments. Small scale fishery is damaged by the fishing activities of industrial vessels operating on the Italian and Croatian coasts.

A representative of an association of the fishery sector highlighted the usefulness of the FAIRSEA Platform as a tool to support decisions and evaluations. In this context, scientific research and producers should share information, especially when the reduction of fishing activity, and then of work, is required to fishers.

Another representative of the fishing sector expresses his concern about the forthcoming management measures (i.e. fishing days reduction) before the evaluation of the effects carried out by the previous ones. A different approach in the sectors of research and communication is needed, as well as the quantification of the effects of the management measures applied to common sole. He highlighted also that the common sole is not between the suffering species in the Adriatic sea: the catches and the potential expressed by the stock increased. Therefore, considering the proposed management measures, the status quo is the best solution.

A fisherman shared its opinion about the spatiotemporal conflicts between fisheries and fleets: the natural differences and specificities between coasts and fisheries cannot become reasons for conflicts. He is convinced that the millimetres of the mesh size or the dimension of the codend of beam trawl don't influence the catches size. The data are showing an increase of common sole catches. Finally, he underlines that an increase of the distance from 6 to 9 nm from the coast would involve a significant reduction of distances between the Italian and Croatian fleets. From a commercial perspective, the challenge is the direct selling to the final consumer to reduce the costs.

A researcher repealed the role of the scientific activity in the implementation of management measures: researchers can provide an overview of the scientific evidence, while the decisions about it are up to the institutions.

Another scientific expert considers the evidence of the difference between the beam trawls and the fishing vessels on the Croatian coast. In this context, an interesting scenario would be a spatiotemporal closure, where neither Croatian nor Italian fleets can fish.

The situation of the common sole stock is not discouraging in a scientific perspective. In the last years a reduction in the fishing mortality is improving the situation of the stock, however

some of the management measures should be continued in order to allow the increase of the stock biomass. It would be interesting the test of scenarios based on prices trend, through quotas never allowing the exceed of a fixed price level.
Finally, a fisher confirms the relevant difference between coasts and highlights the problem of interaction between bottom trawls and setnets: this issue should be managed because the fishers using setnet are often economically damaged in the conflict for maritime space. The main points raised up during the debate are the following:

- Need of a shared governance in the Adriatic Sea based on dialogue and active involvement of all the stakeholders of the fishery sector
- Need of monitoring of actions in place and of an effective communication
- Importance of information exchange between scientific research and producers
- Need of adoption of the same measures between the Istrian and the Italian coast and to all the fleet segments
- Establishment of no take zones
- Implementation of temporal closures applied at the same time in the Italian and in the Croatian side
- Common sole is not a species assessed as suffering in the Adriatic
- For common sole the best management solution is the status quo.

Working group 2: "Decision support tool applied to the management of the Veneto professional and recreational fisheries"

This WG was participated by only 9 people (2 croatian and 7 italian), divided into public administration (2), researchers (2), fisheries cooperatives (1), NGOs (1), others (3).

The attention was focused on the tool presented by VeGal, OGS and Alberto Caccin during the plenary session. Special attention has been paid to the impact of recreational fishery on the professional one.
Therefore, the debate considered the management activities to be implemented. A researcher of VeGal highlighted that the estimates of the impact of recreational fishery on fishing mortality has been one of the most interesting outputs and it should be deepened also through other approaches and methodologies. The recreational fishery has a very varied social component and follows trends different from the professional one: the target species

can be chosen on the basis of the most appreciated species in the period, with the consequent effects on the fishing mortality. Therefore, the trends of recreational fishery should be studied. Another researcher asked whether the limitation of fishing activities on certain species can be a viable solution and what species may be. The viability of this proposal has been supported also by the researcher of VeGal, that has suggested to limit the catches of the species more valuable for the professional fishery, both in economic terms and in protecting the professional sector. For example, the limitation of fishing activities of *sepia officinalis* to recreational fishery can have an important effect in a social perspective although the species has not a high economic value. On the other side, the environmental aspect must be considered, such as: limitation and regulation of bivalve's collection by hands, or with spatial restrictions, by implementing some special closures in very sensitive or interesting areas in a touristic or naturalistic perspective. This can have an effect both in terms of environmental protection and in the improvement of management of the impact on professional fishery (the area at sea to be closed to the activity would be considered biological protected zone).
During the debate, the artisanal fishers raised up many times that recreational fishers seems to be direct competitors because some of them sell the fish to the restaurants. Therefore, management measures aimed at reducing this competition should be implemented. For example, in Croatia the catches of recreational fishers have the catted caudal fin, so they cannot be sold at the market. Another researcher working at the tool developed in the project highlighted that currently the tool cannot take into consideration such kind of measures, because the starting point of the tool is that recreational fisher's behaviour is correct.
A Croatian fisher and a researcher highlighted the importance to evaluate the recreational fishery impact in the whole Adriatic Sea.

Concluding remarks of the second day

Main points raised up in the debate:

- The impact of recreational fishers should be deepened, considering also the other relevant factors such as the trends of recreational fishery
- The phenomenon of recreational fishery should be evaluated in the whole Adriatic Sea
- Recreational fishery should be limited to some species and/or with some spatial restrictions

- The competition due to the catches of recreational fishery sold at the market should be limited by appropriate measures.

The meeting was concluded in both days by the presentation of instant working reports including the key messages reported after each debate.

Conclusions

The working groups and the facilitators involvement allowed a more effective exchange of information and the collection of the different views about the management options in the area. In the first day both working groups, on demersal and pelagic species, considered the climate change and related environmental changes influencing the target species as a very important factor to be considered. Special attention should be paid to the fact that this answer found the agreement of researchers, fishers and public administration. In the working group on the small pelagic management the interactions between species and fishing mortality were considered important too.

The management scenarios considered most important/useful found an agreement about the great importance of the spatial fishing ban and the management of nursery/spawning areas/sensitive areas. Many doubts were raised up in both groups about the option of management by quota/TAC: in the working group on demersal species this option was debated, while in the working group of small pelagics it was considered not a viable solution. The main obstacles in its adoption are mainly based on the uncertainties and delay of stock assessments and the difficulties related to a fair management of quota in the sector. Finally, in the first day, special attention has been paid to the need of enhancement of traditional aspects of the fishing activities and their linkages with the local communities in taking decisions about management measures.

In the second day, the main conclusions reached by the working group on management Area in the North Adriatic Sea and socio-economic effects of different management scenarios for common sole were the following:

- Need of a shared governance in the Adriatic Sea based on dialogue and active involvement of all the stakeholders of the fishery sector
- Need of monitoring of actions in place and of an effective communication
- Importance of information exchange between scientific research and producers

- Need of adoption of the same measures between the Istrian and the Italian coast and to all the fleet segments
- Establishment of no take zones
- Implementation of temporal closures applied at the same time in the Italian and in the Croatian side
- Common sole is not a species assessed as suffering in the Adriatic
- For common sole the best management solution is the status quo.

The working group on "Decision support tool applied to the management of the Veneto professional and recreational fisheries" paid special attention to the impact of recreational fishery on the professional one. Therefore, the debate considered the management activities to be implemented and the following points raised up:

- The impact of recreational fishers should be deepened, considering also the other relevant factors such as the trends of recreational fishery
- The phenomenon of recreational fishery should be evaluated in the whole Adriatic Sea
- Recreational fishery should be limited to some species and/or with some spatial restrictions
- The competition due to the catches of recreational fishery sold at the market should be limited by appropriate measures.

Considering the current situation of management decisions to be taken in the Adriatic both for demersal and small pelagics, the results of the stakeholder meetings would be presented at the GFCM Sub Regional Committee on Adriatic Sea, as the place were scientific results have been taken into account for management decisions.

Target group reached

2) Local, regional and national public authorities: 5
3) Regional and local development agencies, chambers of commerce and other business support organizations: 11
4) SMEs: 8
5) Universities, technology transfer institutions, research institutions: 9
6) NGOs, associations, innovation agencies, business incubators, cluster management bodies and networks: 5
7) Education and training organisations as well as social partners and labor-market institutions: 1

Annexes

Annex 1 - Agenda in Italian, Croatian and English


1_IT_Agenda_FAIRS
EA_2_Stakeholder_M


1_HR_Agenda_FAIR
SEA_2_Stakeholder_


1_EN_Agenda_FAIR
SEA_2_Stakeholder_

Annexes 2 - Presentations


2_23_Feb_Intro_FAI
RSEA_Project_OGS.p


2_23_Feb_Integrate
dPlatform_CNR-IRBI


2_23_Feb_Outcome
s_COISPA.pdf


2_24_Feb_Pilot_Acti
on_ASSAM.pdf


2_24_Feb_Pilot_Acti
on_VeGAL.pdf


2_24_Feb_Pilot_Acti
on_MPS.pdf


2_24_Feb_Pilot_Acti
ons_Results_Spedic

Annexes 3 - Questionnaires


3_23_Feb_Question
naire_Pelagics.pdf


3_23_Feb_Question
naire_Demersals.pdf


3_24_Feb_WG_2_Ve
gal_Pilot Action.pdf


3_24_Feb_WG_1_As
sam_Pilot Action.pdf

Annexes 4- MCDA on questionnaires


4_24_Feb_MCDA_q
uestionnaire_secon


4_24_Feb_MCDA_q
uestionnaire_secon


4_24_Feb_MCDA_q
uestionnaire_secon


2_23_Feb_CurrentM
anagementMeasure

Annexes 5- Photos


5_Photos_2nd_Stak
eholder_Meeting.pc

February 23-24, 2021

FAIRSEA PROJECT
SECOND INTERNATIONAL STAKEHOLDER MEETING

23rd FEBRUARY 2021

First outcomes of FAIRSEA project and your opinions on management in the Adriatic Sea - *The ecosystem approach applied in the Adriatic Sea would provide a new perspective on the current and forthcoming management measures: have your say during the event*

PLENARY SESSION *Introduction by Giampaolo Buonfiglio (MEDAC) and University of Macerata as moderator*	
9:30 - 10:00	The Ecosystem approach and the aim of the Stakeholder meeting (OGS, MEDAC)
10:00 - 10:20	The innovative approach of the FAIRSEA platform (CNR-IRBIM)
10:20 - 10:40	First outcomes from the participatory process to shape objectives and management scenarios (COISPA)
10:40 - 11:00	Current and forthcoming management measures on demersal and pelagic species in the Adriatic Sea
11:00 - 11:40	**PARALLEL WORKING SESSIONS** - *Facilitated by University of Macerata* **"Have your say on Management Measures in the Adriatic Sea"**
11.40 - 12.00	Break
PLENARY SESSION *Moderated by University of Macerata*	
12:00 - 12:30	Instant Working Groups Report presentation, feed-back from project partners, conclusions and key messages

24th FEBRUARY 2021

The FAIRSEA pilot actions - North Adriatic Sanctuary, Veneto & FVG, and Marche Region: what about the next steps? *- Management measures have been envisaged with stakeholders at local level and the effects have been preliminary assessed: have your say on the next steps.*

PLENARY SESSION *Moderated by University of Macerata*	
9:30 - 10:00	The FAIRSEA Pilot Actions in the Adriatic Sea, management scenarios in: - North Adriatic Sanctuary: changing selectivity of trammel nets (MPS) - Decision support tool applied to the management of the Veneto professional and recreational fisheries (VeGal) - Socio-economic effects of different management scenarios applied to Rapido trawl fishery targeting common sole in Marche Region (ASSAM)
10:00 - 10:30	Preliminary results of Pilot Actions case studies by COISPA and OGS
10:30 - 11:30	**PARALLEL WORKING SESSIONS** - *Facilitated by University of Macerata* "**Have your say**: **debate and inputs from stakeholders on the next steps of pilot actions"** Inputs from stakeholders (questionnaire) for comparing management scenarios (COISPA) WORKING GROUP 1: "North Adriatic Sanctuary and socio-economic effects of different management scenarios for common sole" WORKING GROUP 2 "Decision support tool applied to the management of the Veneto professional and recreational fisheries"
11.30 - 11.45	Break
PLENARY SESSION *Moderated by University of Macerata*	
11:45 - 12:00	Instant Working Groups Report presentation, feed-back from project partners, conclusions and key messages
12:00 - 12:30	**FINAL CONCLUSIONS AND KEY MESSAGES FROM THE 2nd STAKEHOLDER MEETING**

23. – 24. veljače 2021.

2. MEĐUNARODNI SASTANAK DIONIKA – FAIRSEA PROJEKT

23. VELJAČE 2021.

Prvi rezultati FAIRSEA projekta i Vaša mišljenja o upravljanju u Jadranskome moru

Cilj ekosustavnog pristupa u Jadranskome moru jest dati novi uvid u sadašnje i nadolazeće mjere upravljanja: recite svoje mišljenje tijekom sastanka

PLENARNA SJEDNICA *Uvodna riječ: Giampaolo Buonfiglio (MEDAC), moderator: Università di Macerata (Sveučilište Macerata)*	
9:30 - 10:00	Ekosustavni pristup i cilj sastanka dionika (OGS, MEDAC)
10:00 - 10:20	Inovativni pristup FAIRSEA platforme (CNR-IRBIM)
10:20 - 10:40	Prvi rezultati participativnog procesa radi izrade ciljeva i scenarija upravljanja (COISPA)
10:40 - 11:00	Sadašnje i buduće mjere upravljanja pridnenim i pelagijskim vrstama u Jadranskome moru
11:00 - 11:40	**PARALELNE RADIONICE** - *Voditelj: Università di Macerata* **"Vaše mišljenje o mjerama upravljanja u Jadranskome moru"**
11.40 - 12.00	Stanka za kavu
PLENARNA SJEDNICA *Moderator: Università di Macerata*	
12:00 - 12:30	Predstavljanje izvješća radnih skupina s radionica, povratne informacije projektnih partnera, zaključci i ključne poruke

24. VELJAČE 2021.

FAIRSEA pilot aktivnosti – Utočište u sjevernom Jadranu, Veneto, Furlanija – Julijska krajina i Regija Marche: Vaše mišljenje o sljedećim koracima - *Procijenjeni su potencijalni učinci mjera upravljanja koje su osmišljene zajedno s dionicima na lokalnoj razini: Vaše mišljenje o sljedećim koracima.*

PLENARNA SJEDNICA *Moderator: Università di Macerata*	
9:30 - 10:00	FAIRSEA pilot aktivnosti u Jadranskome moru, scenariji upravljanja u: - Sjevernojadranskom utočištu: promjena selektivnosti trostrukih mreža stajaćica (MPS) - Alat za podršku procesu odlučivanja koji se odnosi na upravljanje profesionalnim i rekreacijskim ribolovom u Regiji Veneto (VeGal) - Socioekonomski učinci različitih scenarija upravljanja, primijenjenih na ribolov lista pridnenim povlačnim mrežama „rapido“ u Regiji Marche (ASSAM)
10:00 - 10:30	Preliminarni rezultati pilot aktivnosti u navedenim studijama (COISPA i OGS)
10:30 - 11:30	**PARALELNE RADIONICE** - *Voditelj: Università di Macerata* **“Vaše mišljenje: rasprava i prijedlozi dionika o sljedećim koracima u okviru pilot aktivnosti”** Prijedlozi dionika (anketni upitnik) za usporedbu scenarija upravljanja (COISPA) RADNA SKUPINA 1: “Sjevernojadransko utočište i socioekonomski učinci različitih scenarija upravljanja listom (*Solea solea*)” RADNA SKUPINA 2: “ Alat za podršku procesu odlučivanja, koji se odnosi na upravljanje profesionalnim i rekreacijskim ribolovom u Regiji Veneto”
11.30 - 11.45	Stanka za kavu
PLENARNA SJEDNICA *Moderator: Università di Macerata*	
11:45 - 12:00	Predstavljanje izvješća radnih skupina s radionica, povratne informacije projektnih partnera, zaključci i ključne poruke
12:00 - 12:30	**KONAČNI ZAKLJUČCI I KLJUČNE PORUKE S DRUGOG SASTANKA DIONIKA**

23-24 Febbraio 2021

PROGETTO FAIRSEA, SECONDA RIUNIONE INTERNAZIONALE DEGLI STAKEHOLDER

23 FEBBRAIO 2021

I primi risultati del Progetto FAIRSEA e le vostre opinioni sulla gestione in Mare Adriatico -

L'approccio ecosistemico applicato in Mare Adriatico è mirato a fornire una nuova prospettiva sulle misure di gestione in vigore e imminenti: la vostra opinione durante l'evento

Sessione plenaria	
Introduzione di Giampaolo Buonfiglio (MEDAC), modera l'Università di Macerata	
9:30 - 10:00	L'approccio ecosistemico e l'obiettivo del Secondo incontro degli Stakeholder (OGS, MEDAC)
10:00 - 10:20	L'innovazione della piattaforma FAIRSEA (CNR-IRBIM)
10:20 - 10:40	Primi risultati del processo partecipativo per delineare gli obiettivi e gli scenari di gestione (COISPA)
10:40 - 11:00	Misure di gestione vigenti e imminenti per specie demersali e pelagiche nel Mar Adriatico
11:00 - 11:40	**GRUPPI DI LAVORO SIMULTANEI** - *Facilitati dall'Università di Macerata* **"La vostra opinione sulle Misure di Gestione in Mare Adriatico"**
11.40 - 12.00	Pausa
Sessione plenaria	
Moderata dall'Università di Macerata	
12:00 - 12:30	Presentazione dei report Istantanei dei Gruppi di Lavoro, feed-back dai partner di Progetto, conclusioni e messaggi chiave

24 FEBBRAIO 2021

Le azioni pilota di FAIRSEA – Il Santuario in Nord Adriatico, Veneto e FVG, e Regione Marche: la vostra opinione sui prossimi passi - Gli stakeholder coinvolti hanno ipotizzato misure di gestione da applicare a livello locale di cui preliminarmente ne sono stati valutati gli effetti potenziali: la vostra opinione sui prossimi passi

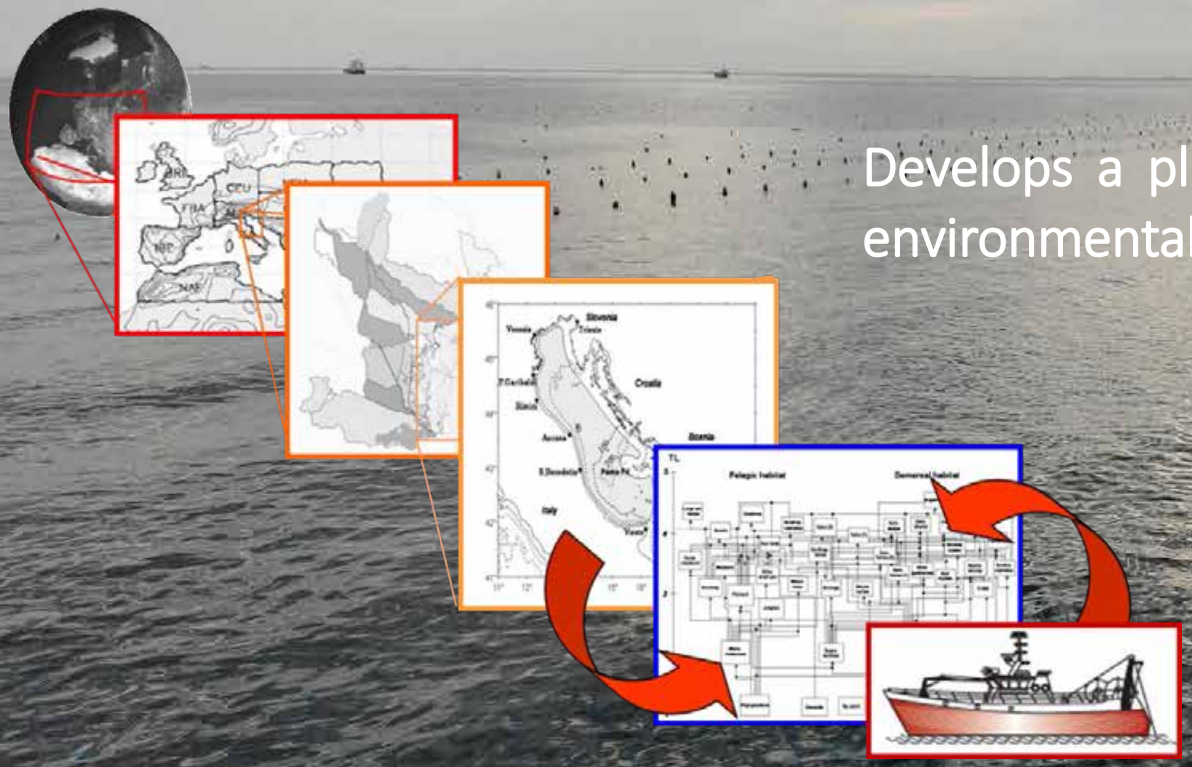
Sessione plenaria *Moderata dall'Università di Macerata*	
9:30 - 10:00	Le azioni pilota di FAIRSEA nel Mar Adriatico, scenari di gestione in: - Santuario del Nord Adriatico: cambiamento della selettività nei tramagli (MPS) - Uno strumento a supporto decisionale applicato alla gestione della pesca professionale e ricreativa in Veneto (VeGal) - Effetti socioeconomici dei diversi scenari di gestione applicati all'attività di pesca con il rapido per la sogliola nella Regione Marche (ASSAM)
10:00 - 10:30	Risultati preliminari delle Azioni Pilota nei casi studio (COISPA e OGS)
10:30 - 11:30	**GRUPPI DI LAVORO SIMULTANEI** - *Facilitati dall'Università di Macerata* **"La vostra opinione: dibattito e proposte degli stakeholder sui prossimi passi delle azioni pilota"** Proposte degli stakeholder (questionario) per confrontare scenari di gestione (COISPA) GRUPPO DI LAVORO 1: "Santuario del Nord Adriatico ed effetti socioeconomici di diversi scenari gestionali per la sogliola comune" GRUPPO DI LAVORO 2 "Uno strumento a supporto decisionale applicato alla gestione della pesca professionale e ricreativa in Veneto"
11.30 - 11.45	Pausa
Sessione plenaria *Moderata dall'Università di Macerata*	
11:45 - 12:00	Presentazione dei report Istantanei dei Gruppi di Lavoro, feed-back dai partner di Progetto, conclusioni e messaggi chiave
12:00 - 12:30	**CONCLUSIONI FINALI E MESSAGGI CHIAVE DELLA SECONDA RIUNIONE DEGLI STAKEHOLDER**

Interreg Italy - Croatia FAIRSEA
European Regional Development Fund

EUROPEAN UNION

FAIRSEA

Fisheries in the AdriatIc Region - a Shared Ecosystem Approach



Develops a platform integrating economic, social and environmental aspects related to Adriatic fisheries

A science-based tool for supporting sustainable management of marine resources and

for improving communication, participation, capacities useful to fisheries management

Photo: Jacopo Pasotti

FAIRSEA

Fisheries in the AdriatIc Region - a Shared Ecosystem Approach

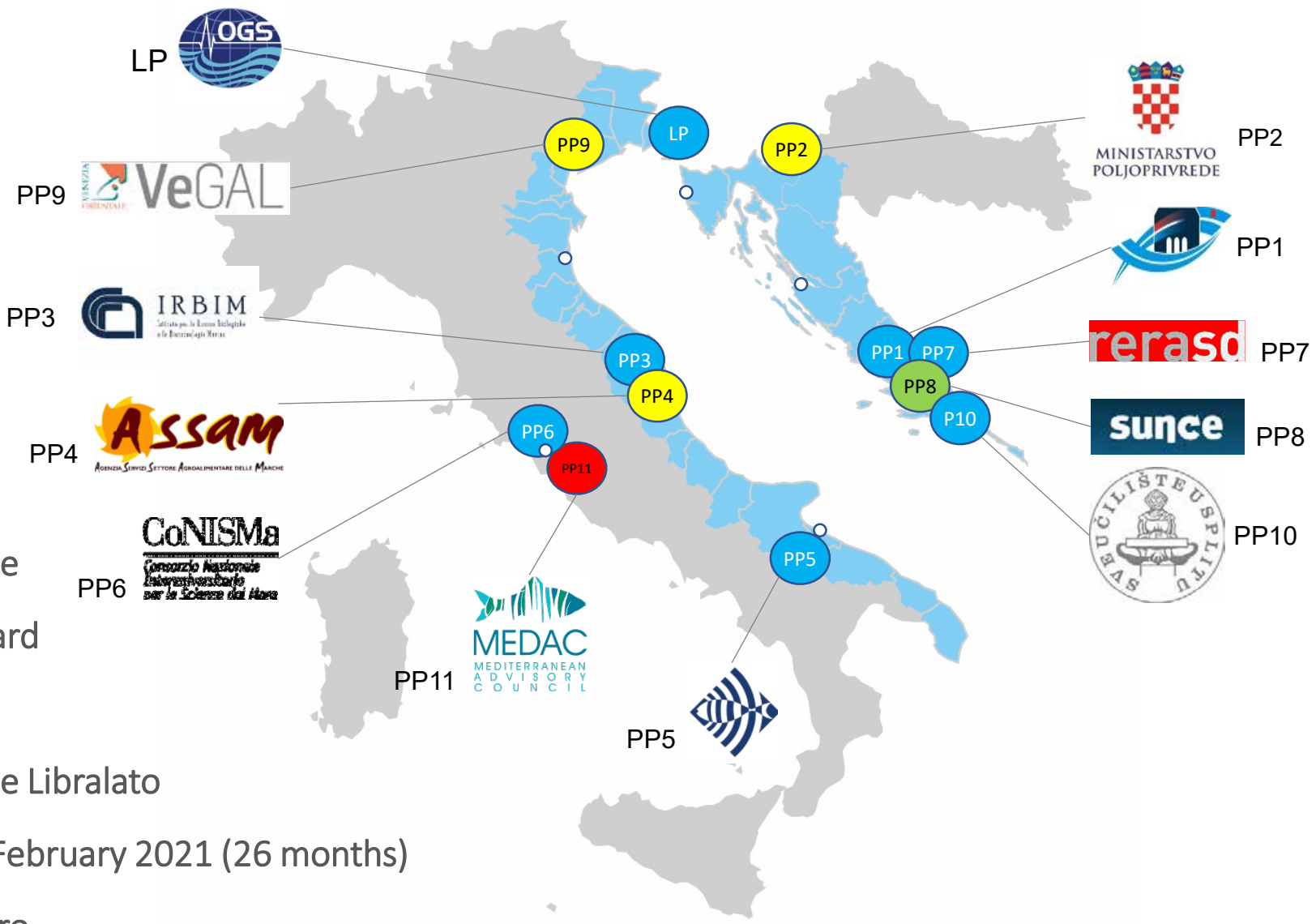
Simone Libralato|OGS

Second International Stakeholder Meeting

23th February 2020

FAIRSEA

Fisheries in the Adriatlc Region - a Shared Ecosystem Approach



2014 - 2020 Interreg V-A

Italy - Croatia CBC Programme

Call for proposal 2017 Standard

Leading partner: OGS

Scientific Responsible: Simone Libralato

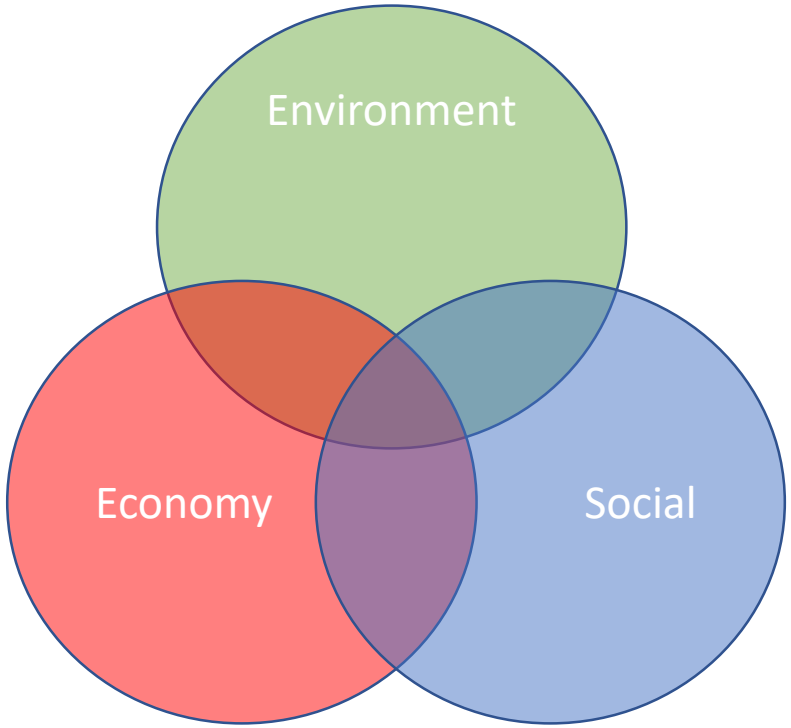
Duration: January 2019 end February 2021 (26 months)

Total budget: 2.060.00,00 Euro

BACKGROUND

ECOSYSTEM APPROACH TO FISHERIES

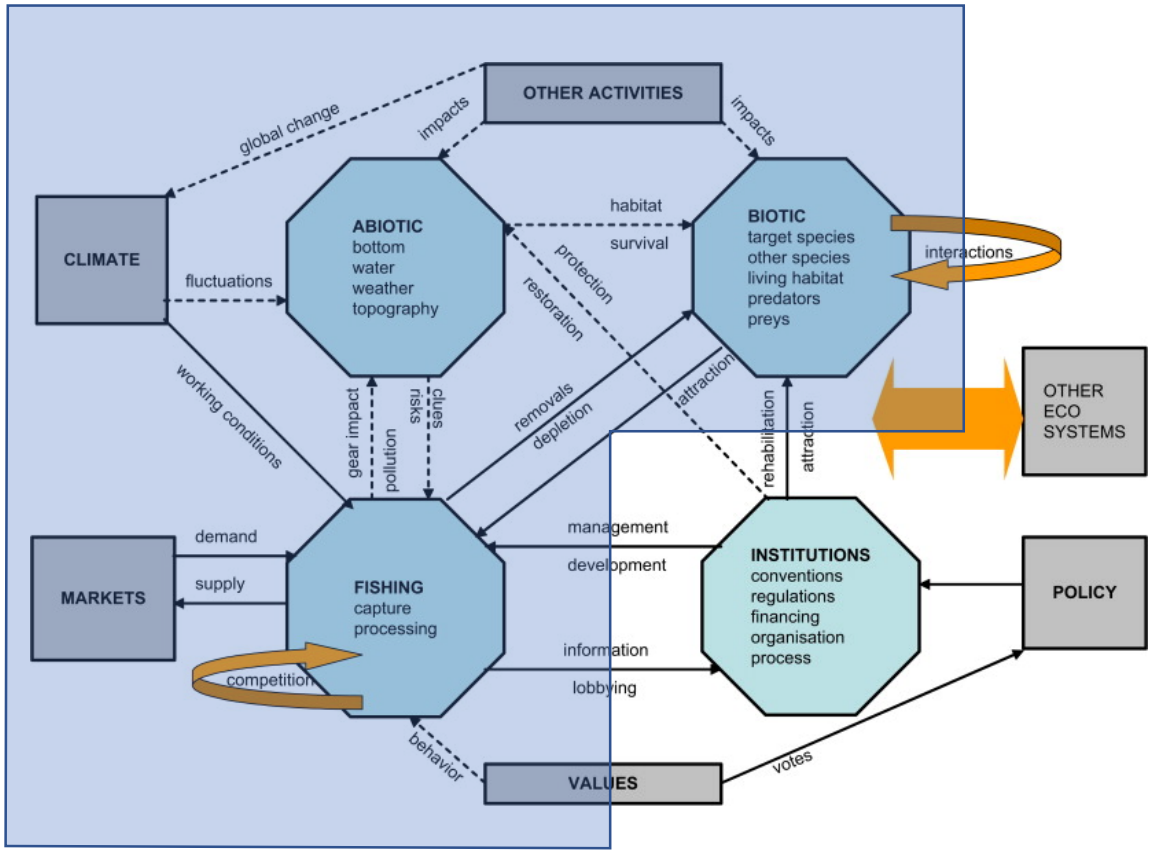
translate the economic, social and ecological policy goals and aspirations of sustainable development of EAF into operational objectives, indicators and performance measures (FAO guidelines)



"Clearly, economic and social objectives [of fisheries] will not be met while a stock is in such a depleted state that the long-term sustainability of the fishery is threatened, but equally, biological objectives are unlikely to be met without consideration being given to economic and social objectives." Beddington et al., 2007, Science

FAIRSEA RATIONALE

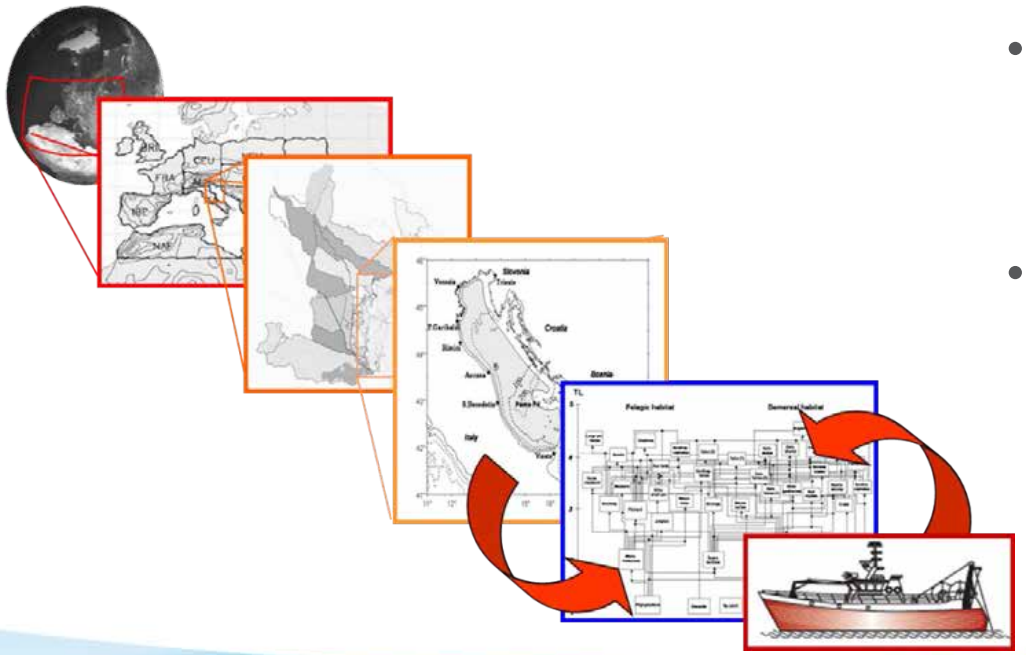
A SHARED ECOSYSTEM APPROACH



- **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 harmonized and optimized 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**

THE PLATFORM

INTEGRATED DECISION SUPPORT TOOL

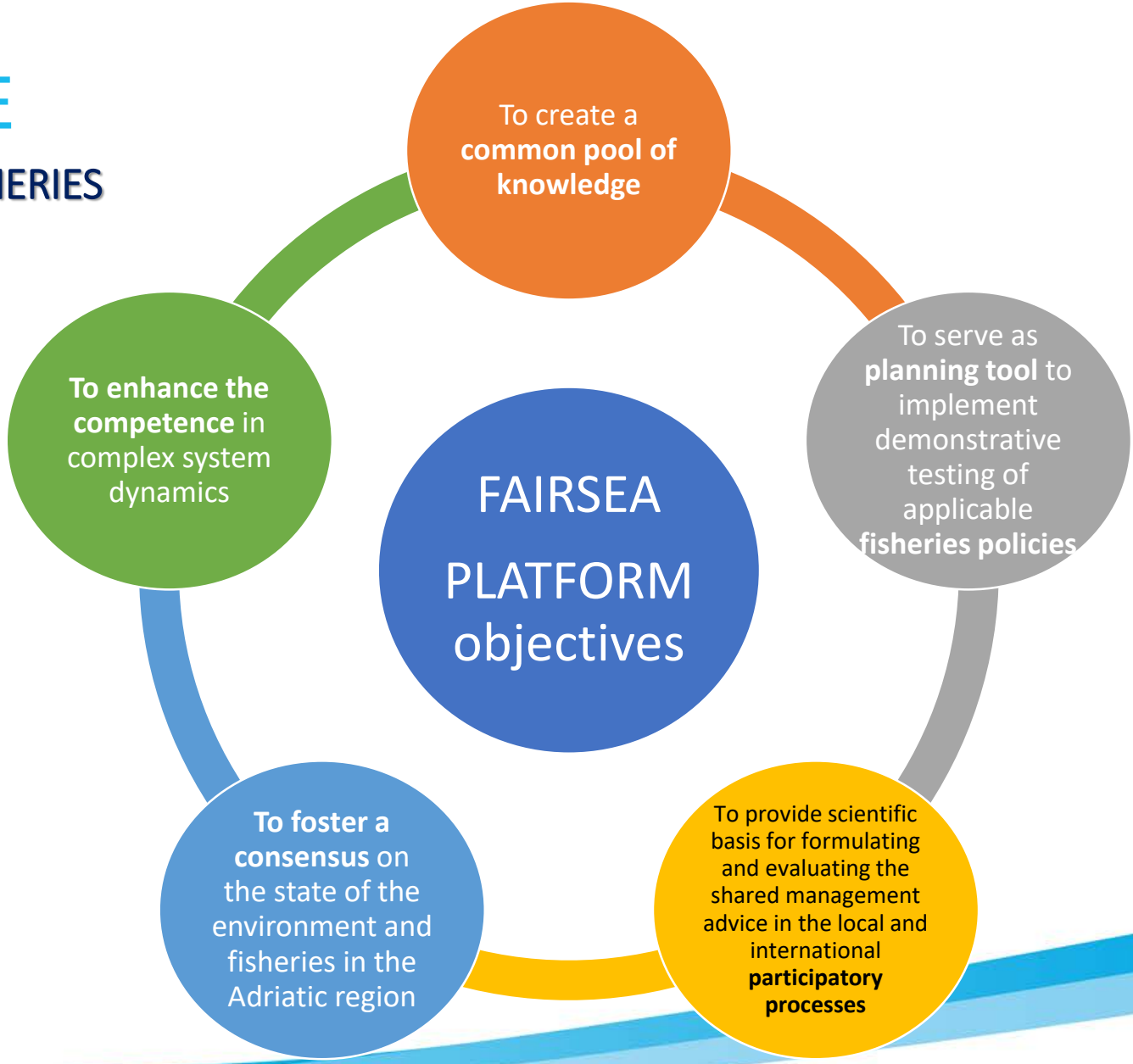


- **Integration of environmental variability.** Application of a transboundary and transdisciplinary approach that integrates physical, biochemical and biological processes
- **Multispecies, multigear approach**. Harmonized management can be achieved by going beyond single species and single gear approaches, 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**

A QUANTITATIVE

ECOSYSTEM APPROACH TO FISHERIES

The main result of FAIRSEA will be the development of an INTEGRATED PLATFORM FOR A QUANTITATIVE ECOSYSTEM APPROACH TO FISHERIES that goes across territorial boundaries and involves several disciplines.

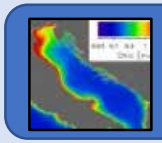


THE PLATFORM

The platform is a spatially explicit dynamic tool integrating cornerstone elements for an ecosystem approach to fisheries

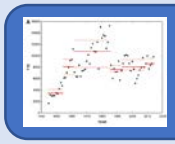
INTEGRATING PROCESSES (NOT only LAYERS)

HYDRO
water circulation & connectivity

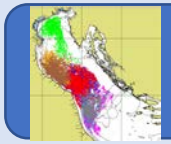


BGC
biogeochemical & plankton processes

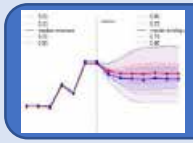
BSTAT
Distribution of resources



FSTAT
Catches and fleets statistics



EFFORT
Spatial distribution and dynamics



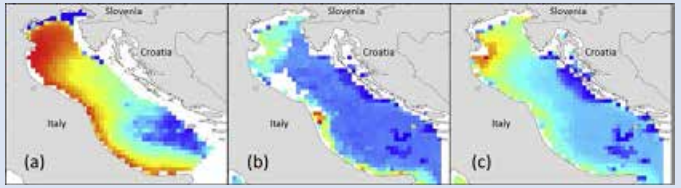
BIOECO
Bio-economic responses

FWM
Food web dynamics

IRBIM
Istituto per le Risorse Biologiche e le Biotecnologie Marine

WP4

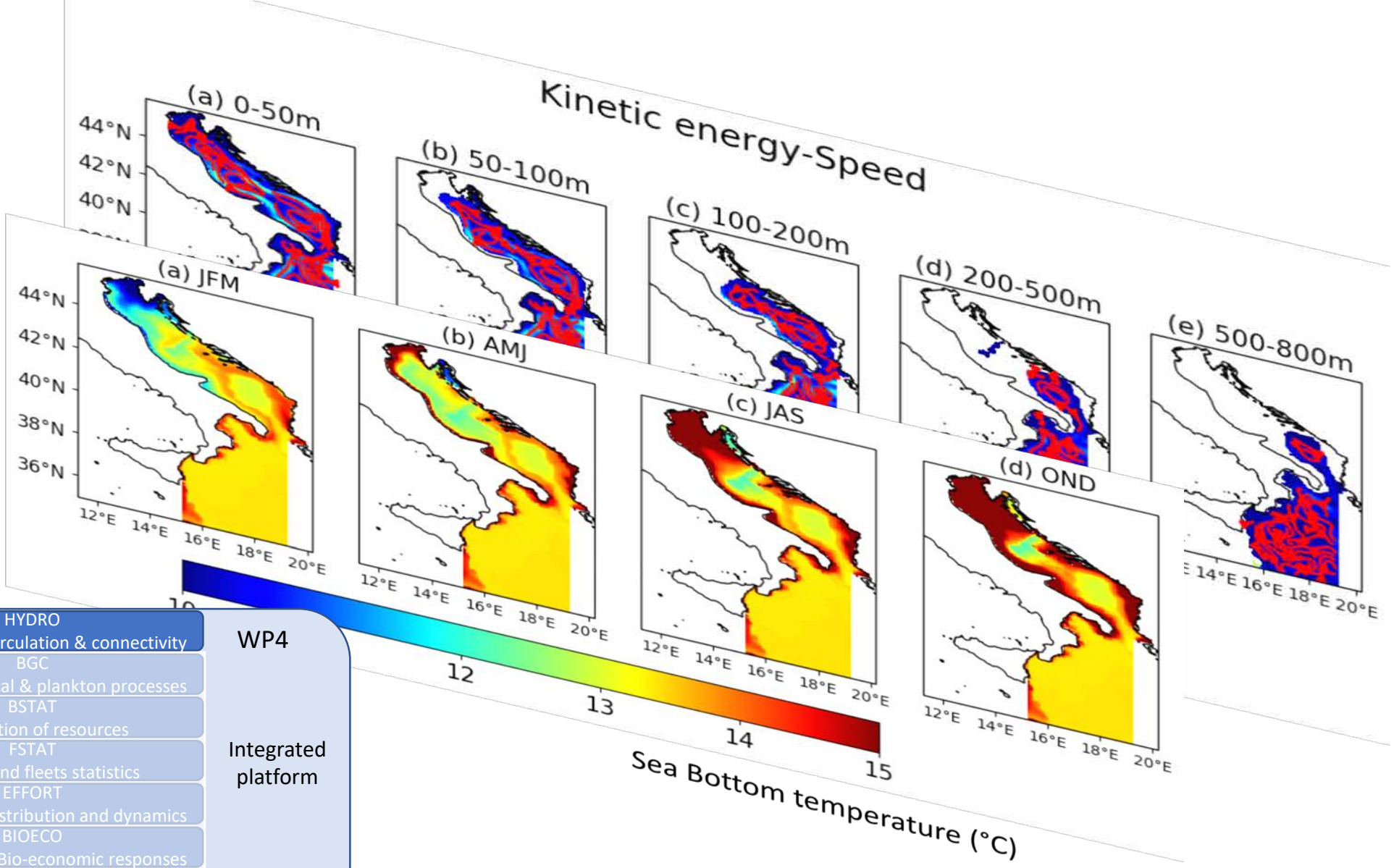
Integrated platform



Spatio-temporal integration using modelling tool(s)

Alternative management scenarios
Supporting management plans develpment

Interreg Italy - Croatia FAIRSEA
European Regional Development Fund
EUROPEAN UNION



HYDRO
water circulation & connectivity

BGC
geochemical & plankton processes

BSTAT
Distribution of resources

FSTAT
Catches and fleets statistics

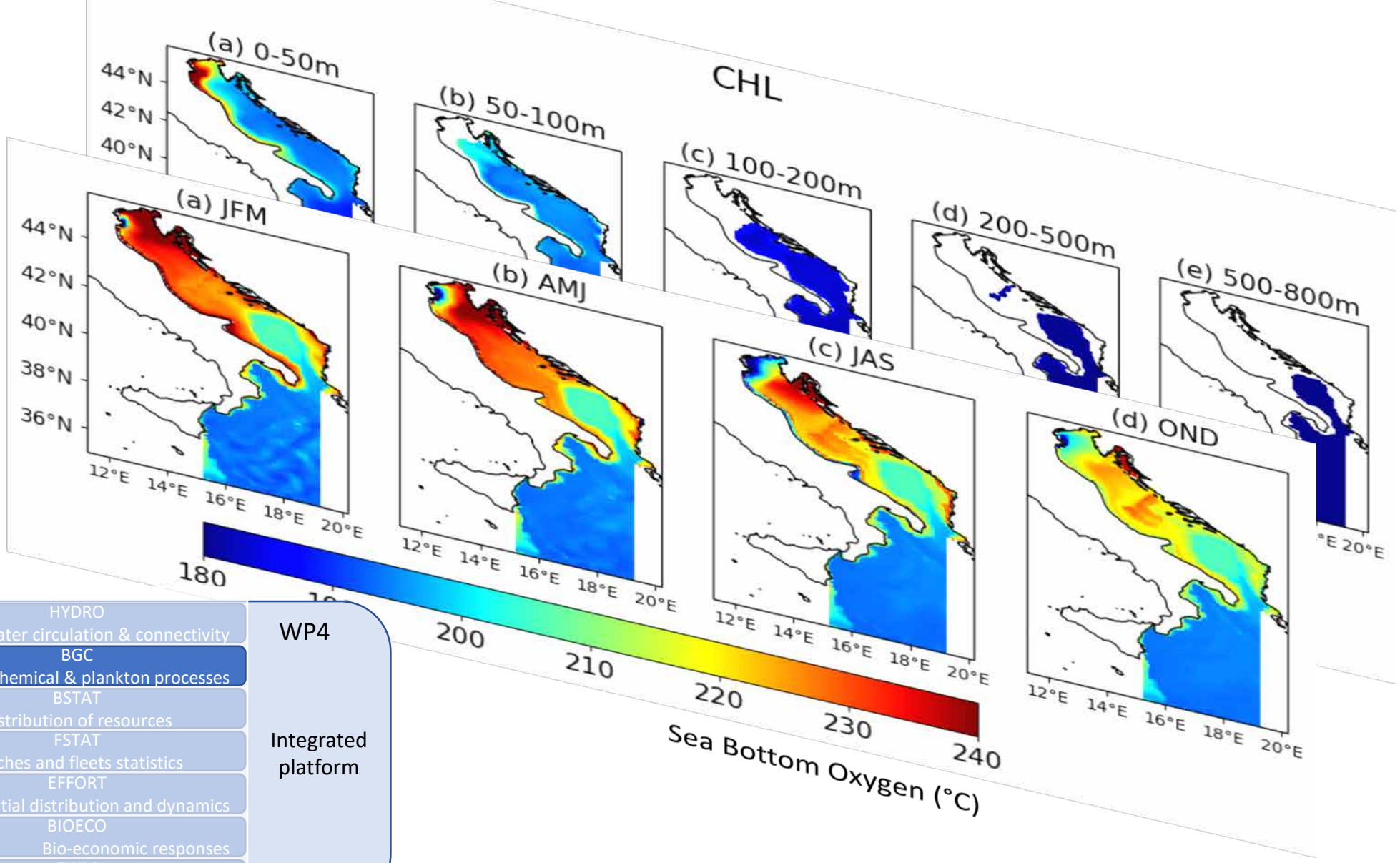
EFFORT
Spatial distribution and dynamics

BIOECO
Bio-economic responses

FWM
Food web dynamics

WP4

Integrated platform



HYDRO
water circulation & connectivity

BGC
geochemical & plankton processes

BSTAT
Distribution of resources

FSTAT
Catches and fleets statistics

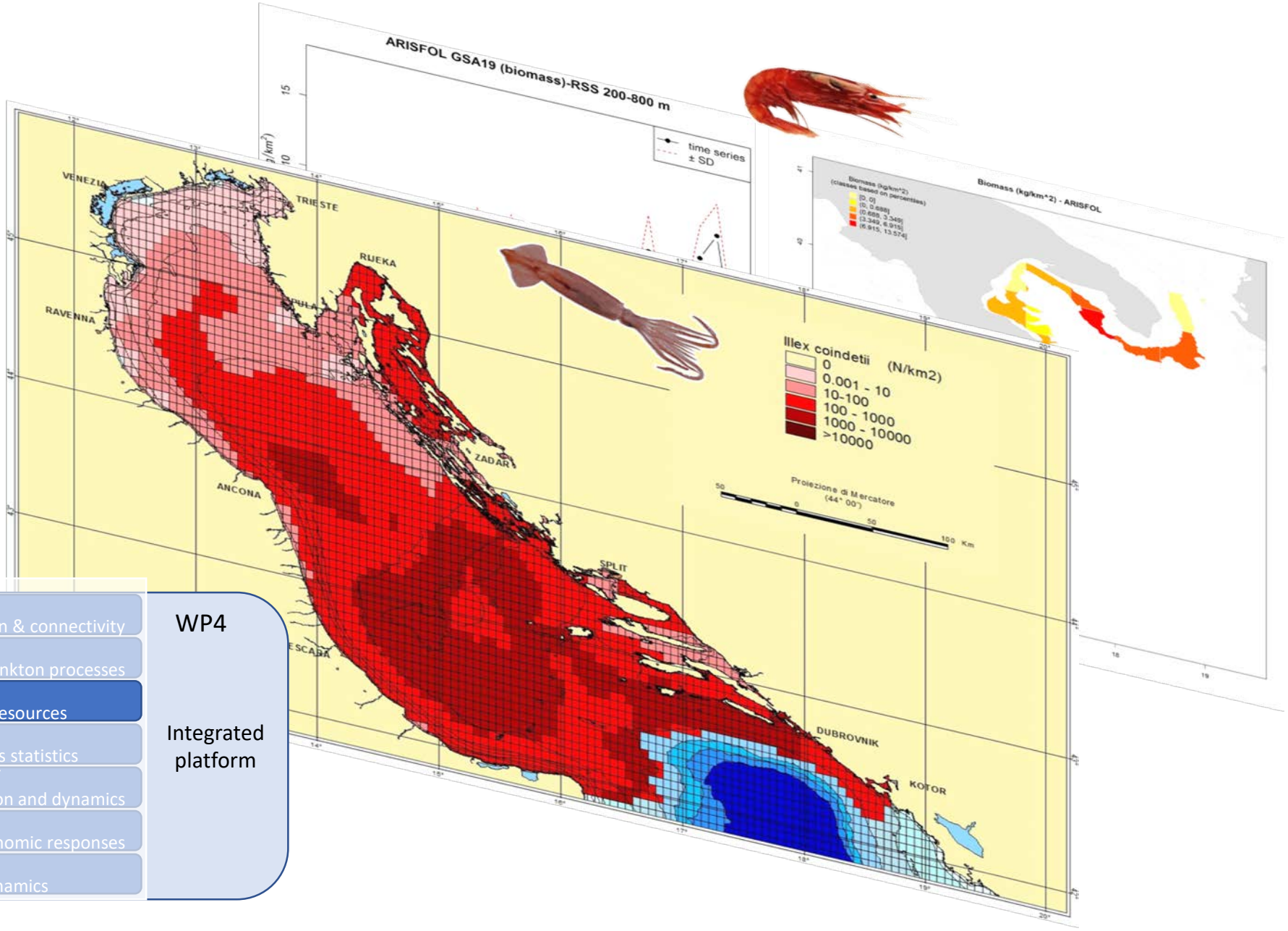
EFFORT
Spatial distribution and dynamics

BIOECO
Bio-economic responses

FWM
Food web dynamics

WP4

Integrated platform



HYDRO
water circulation & connectivity

BGC
geochemical & plankton processes

BSTAT
Distribution of resources

FSTAT
Catches and fleets statistics

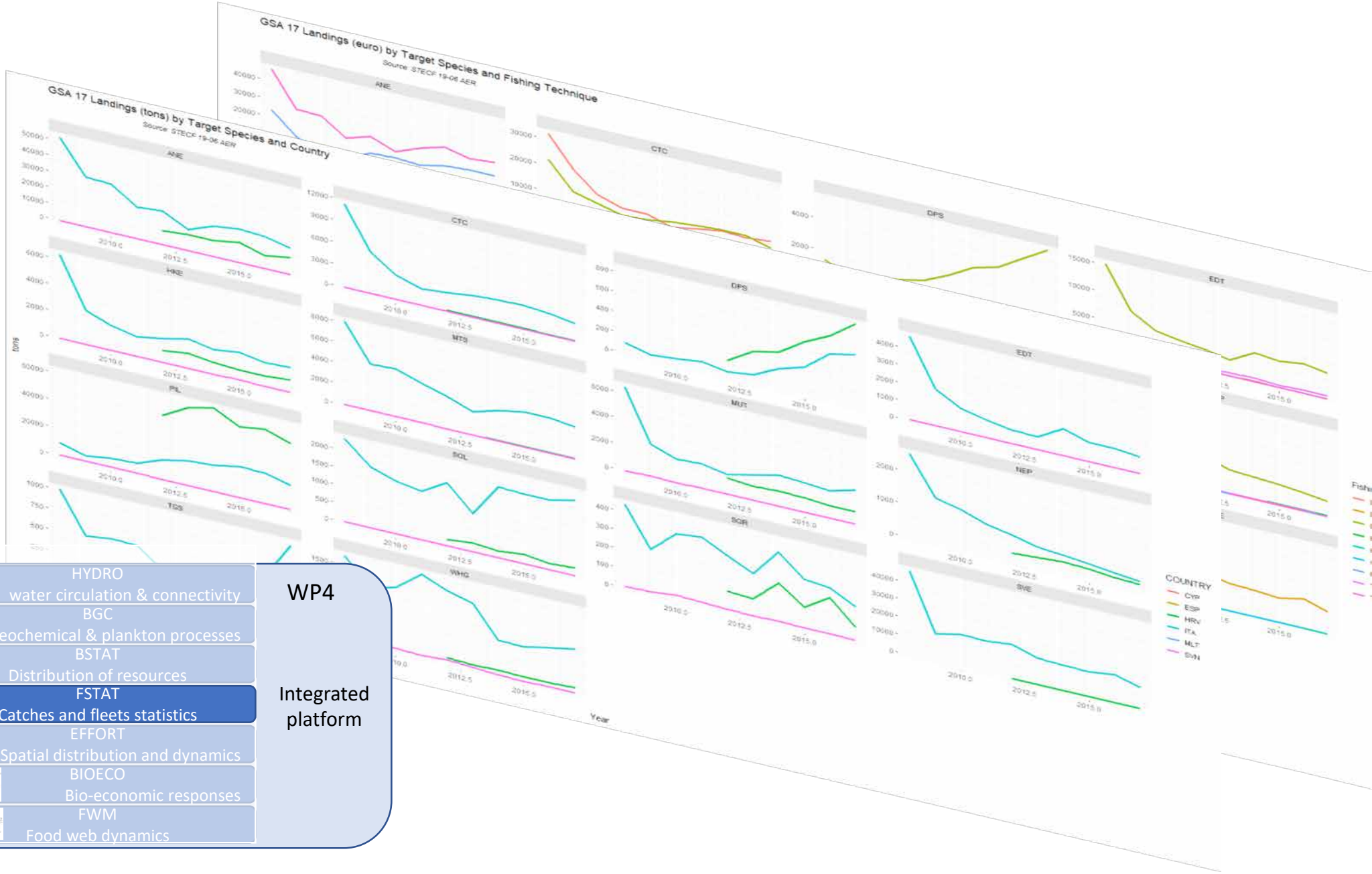
EFFORT
Spatial distribution and dynamics

BIOECO
Bio-economic responses

FWM
Food web dynamics

WP4

Integrated platform



HYDRO
water circulation & connectivity

BGC
geochemical & plankton processes

BSTAT
Distribution of resources

FSTAT
Catches and fleets statistics

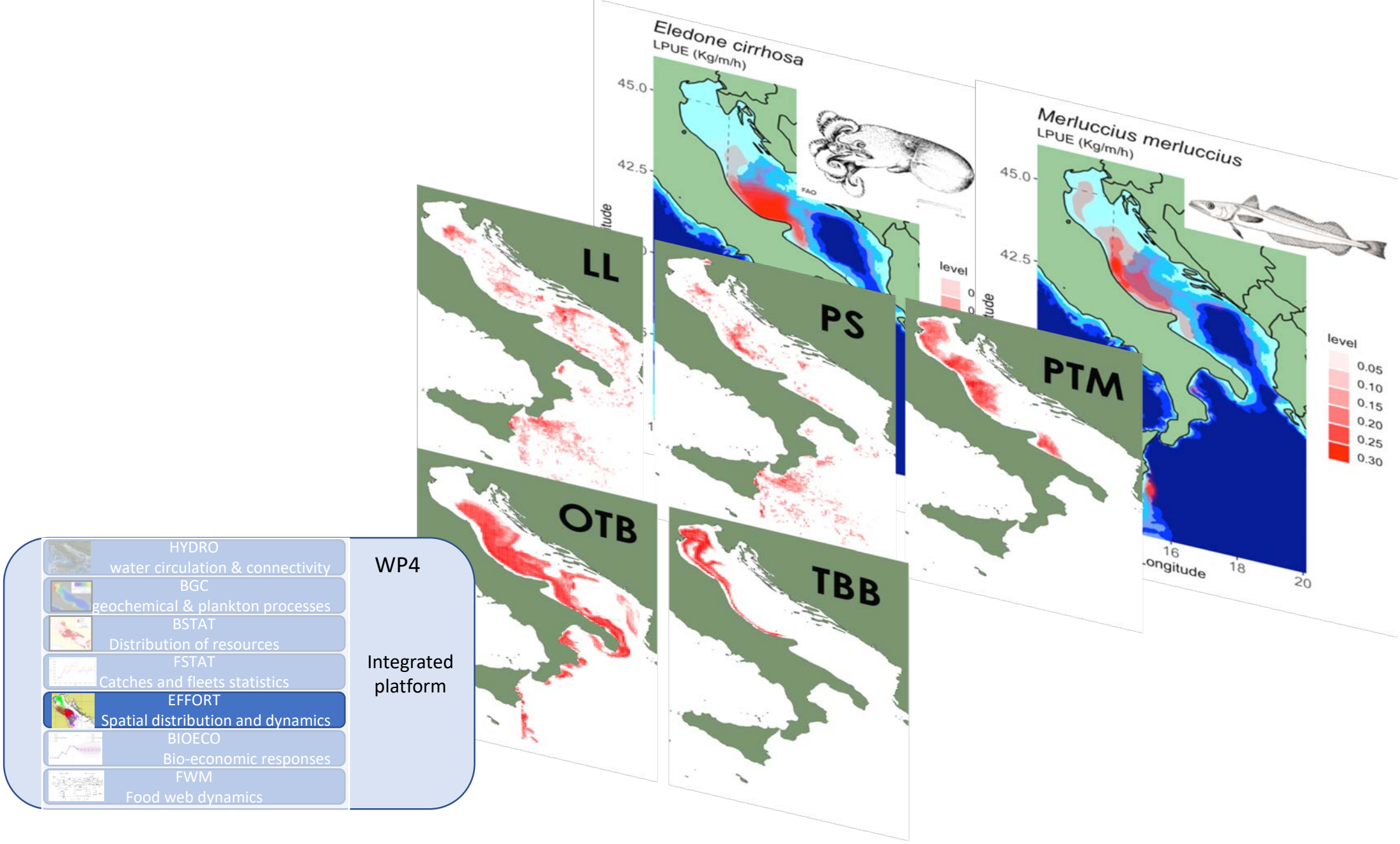
EFFORT
Spatial distribution and dynamics

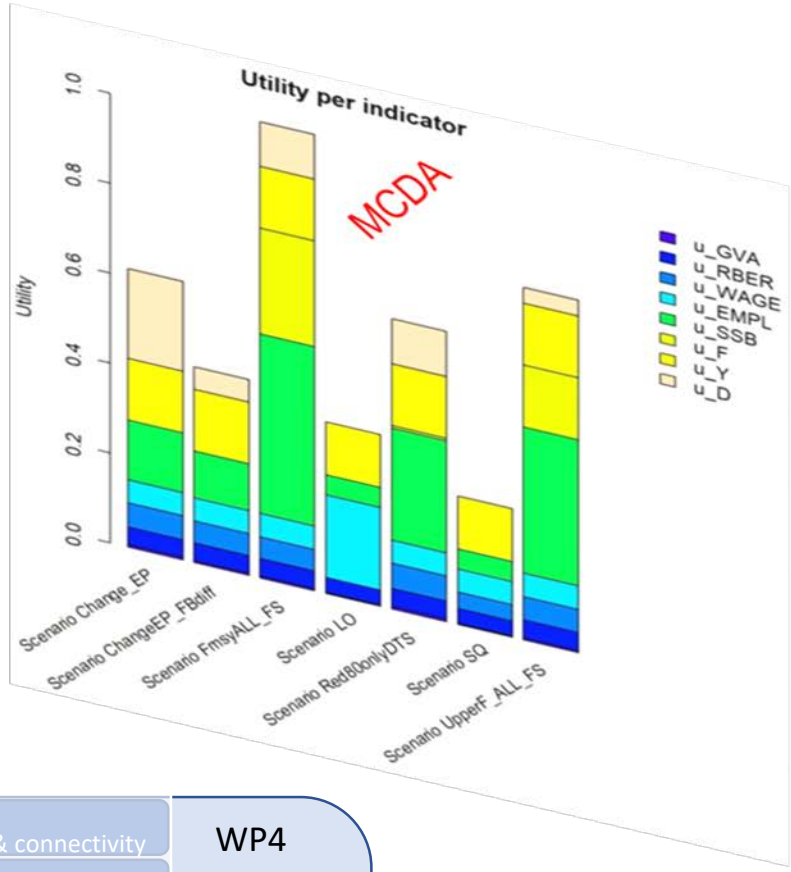
BIOECO
Bio-economic responses

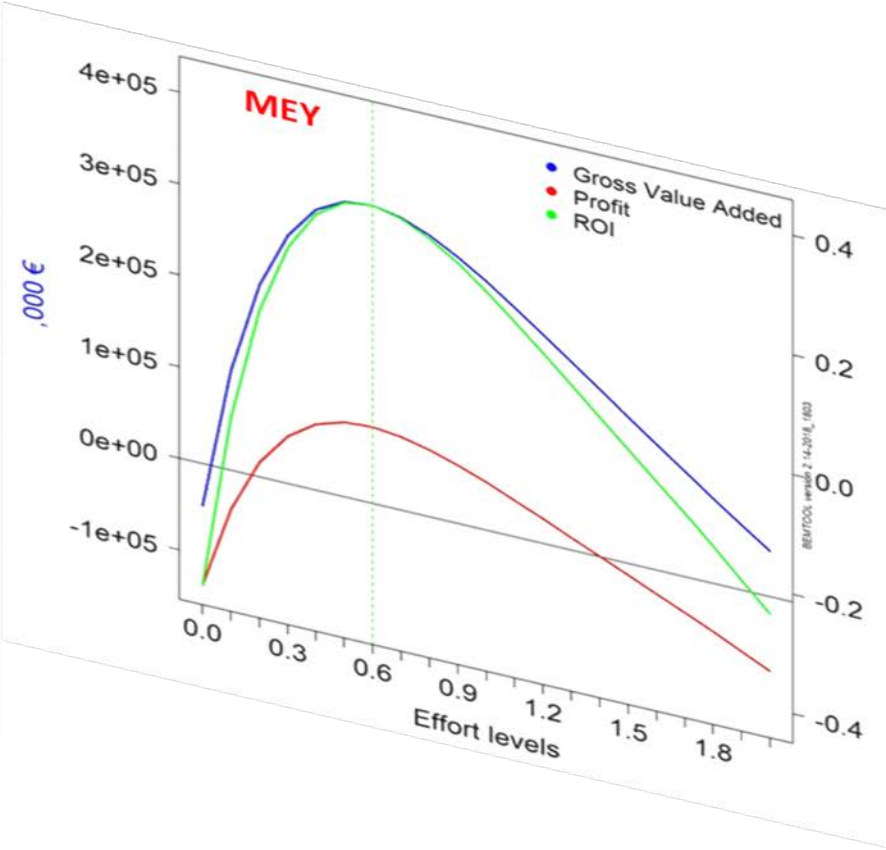
FWM
Food web dynamics

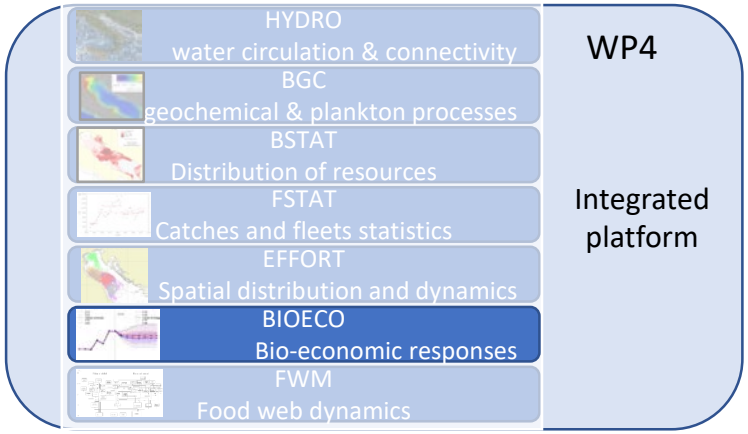
WP4

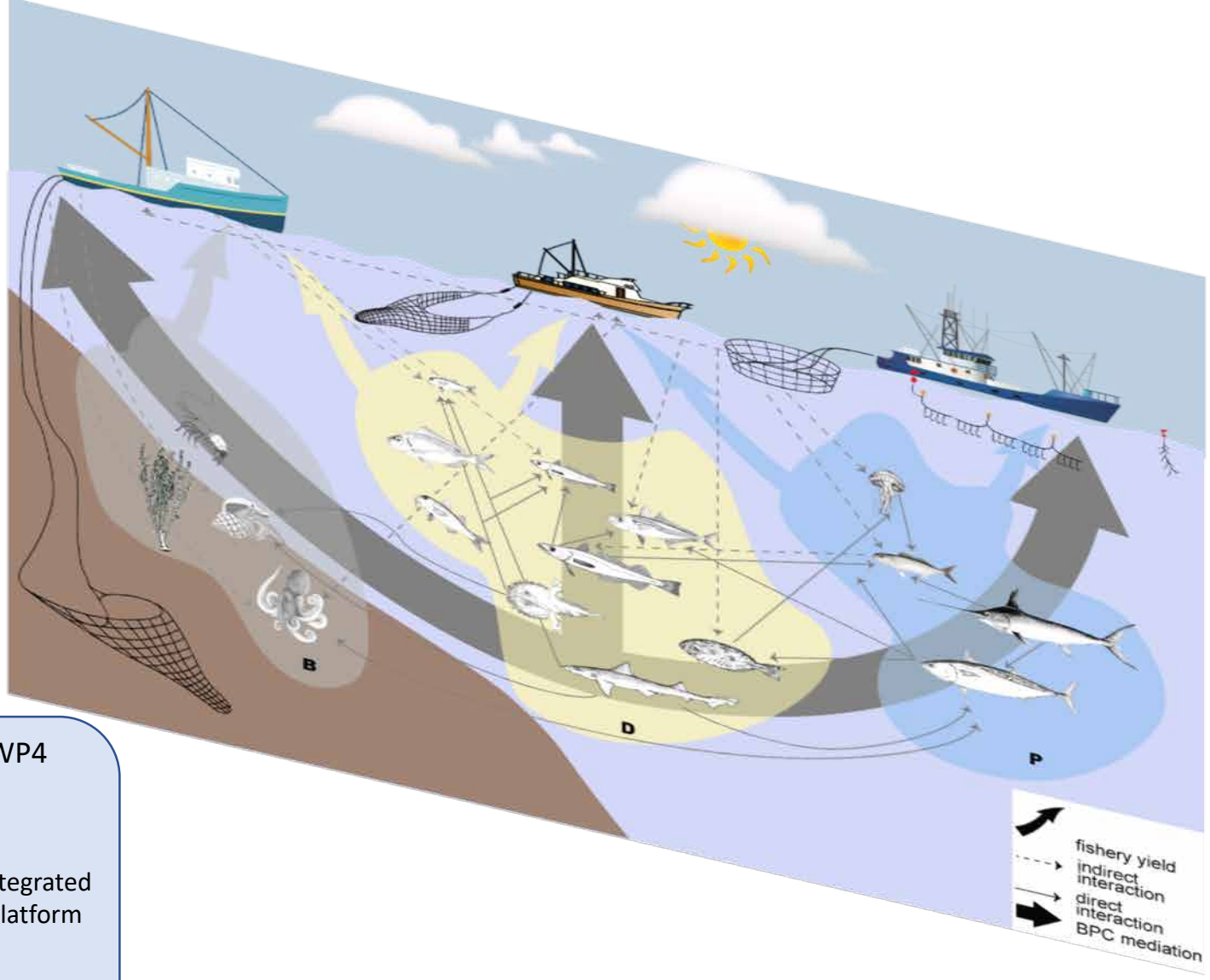
Integrated platform


HYDRO
water circulation & connectivity
BGC
geochemical & plankton processes
BSTAT
Distribution of resources
FSTAT
Catches and fleets statistics
EFFORT
Spatial distribution and dynamics
BIOECO
Bio-economic responses
FWM
Food web dynamics
WP4
Integrated platform
Eledone cirrhosa
LPUE (Kg/m/h)
Merluccius merluccius
LPUE (Kg/m/h)
LL
PS
PTM
OTB
TBB
level
0.05
0.10
0.15
0.20
0.25
0.30
45.0
42.5
16
18
20


Utility per indicator
MCDA
Utility
0.0
0.2
0.4
0.6
0.8
1.0
Scenario Change_EP
Scenario ChangeEP_FBdiff
Scenario FmsyALL_FS
Scenario LO
Scenario Red80onlyDTS
Scenario SQ
Scenario UpperF_ALL_FS
u_GVA
u_RBER
u_WAGE
u_EMPL
u_SSB
u_F
u_Y
u_D


MEY
4e+05
3e+05
2e+05
1e+05
0e+00
-1e+05
,000 €
0.0
0.3
0.6
0.9
1.2
1.5
1.8
Effort levels
Gross Value Added
Profit
ROI
0.4
0.2
0.0
-0.2
-0.4


HYDRO
water circulation & connectivity
BGC
geochemical & plankton processes
BSTAT
Distribution of resources
FSTAT
Catches and fleets statistics
EFFORT
Spatial distribution and dynamics
BIOECO
Bio-economic responses
FWM
Food web dynamics
WP4
Integrated platform



HYDRO
water circulation & connectivity

BGC
geochemical & plankton processes

BSTAT
Distribution of resources

FSTAT
Catches and fleets statistics

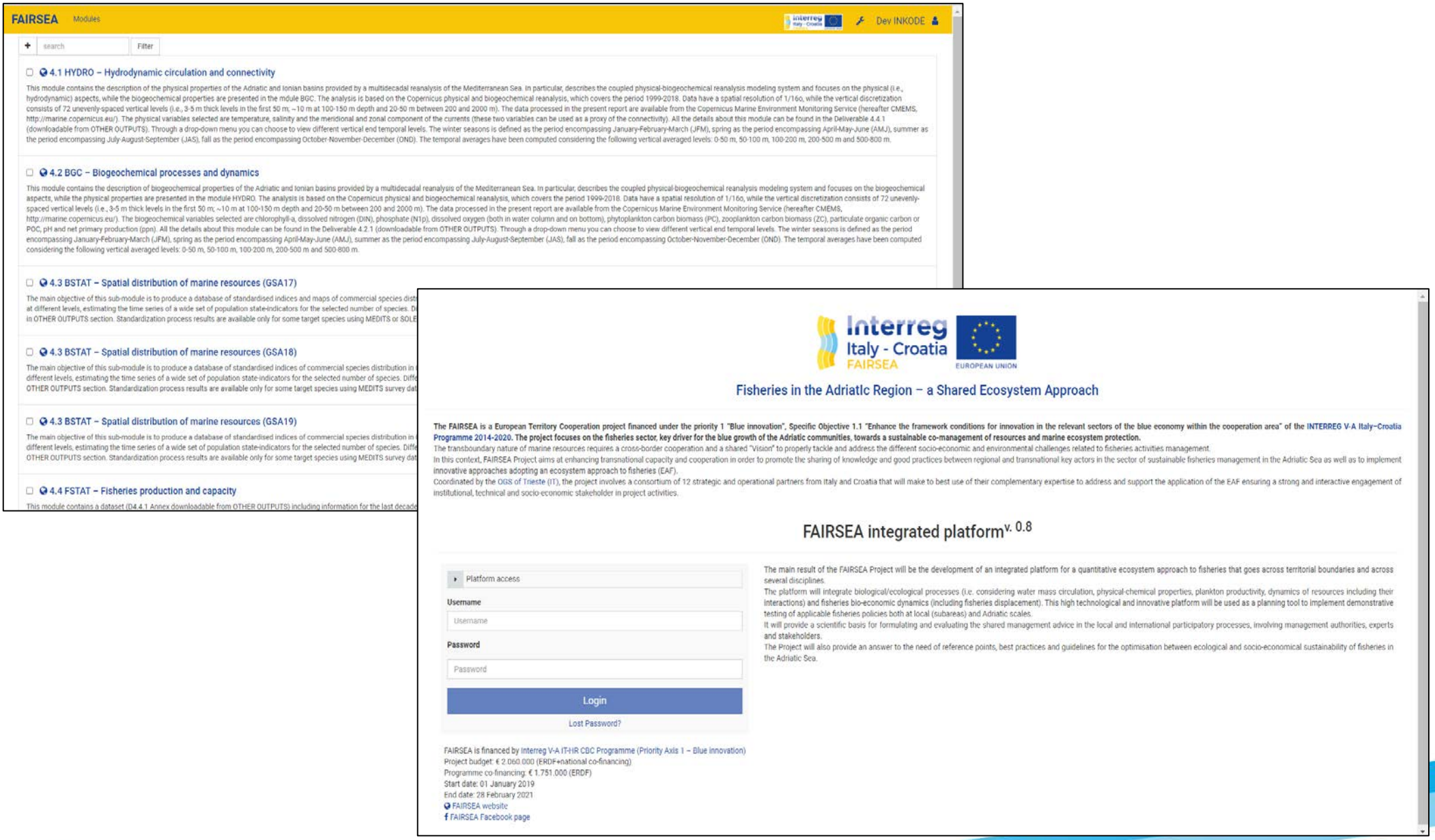
EFFORT
Spatial distribution and dynamics

BIOECO
Bio-economic responses

FWM
Food web dynamics

WP4

Integrated platform

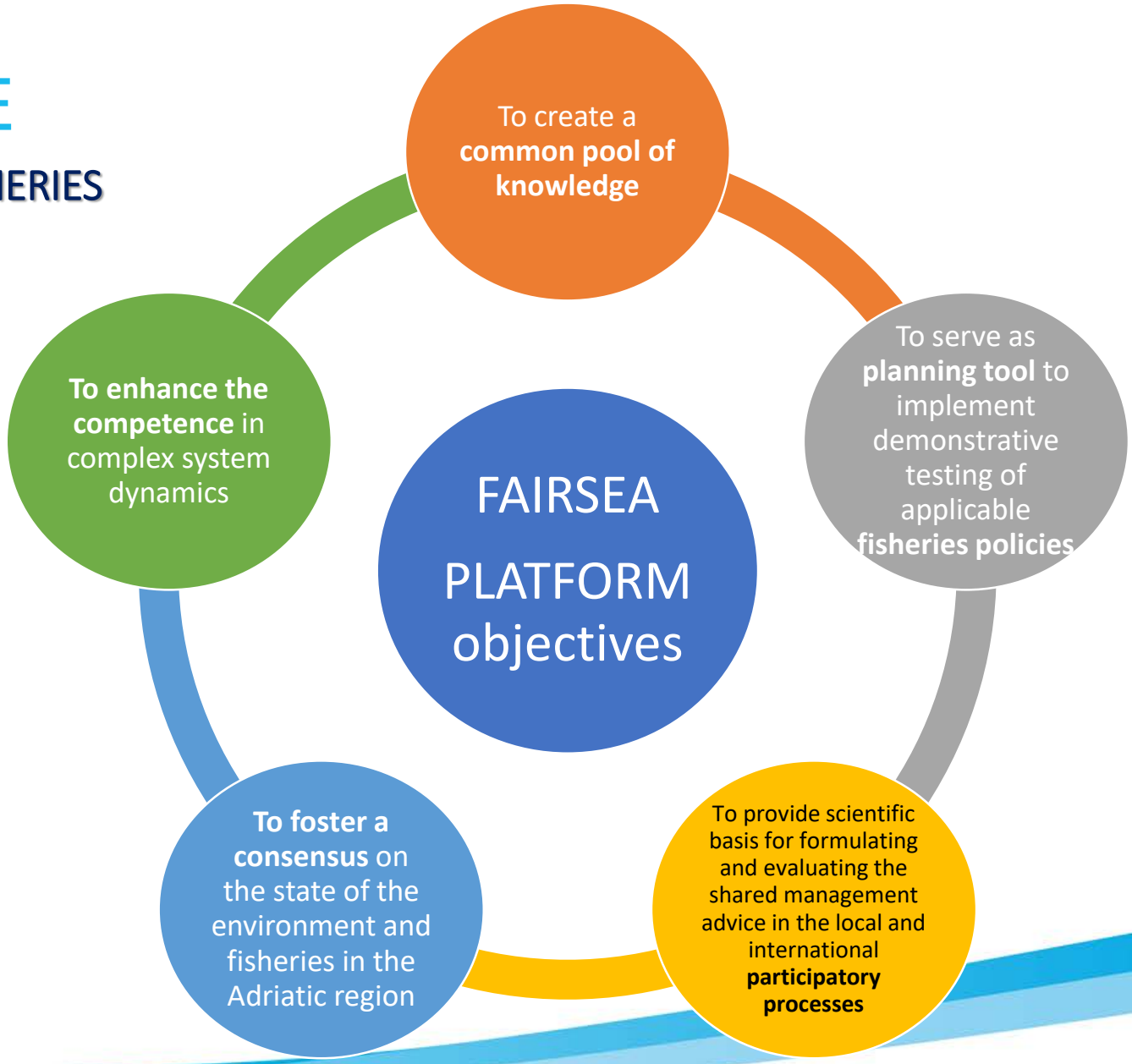


Interreg
Italy - Croatia
FAIRSEA
EUROPEAN UNION
European Regional Development Fund

A QUANTITATIVE

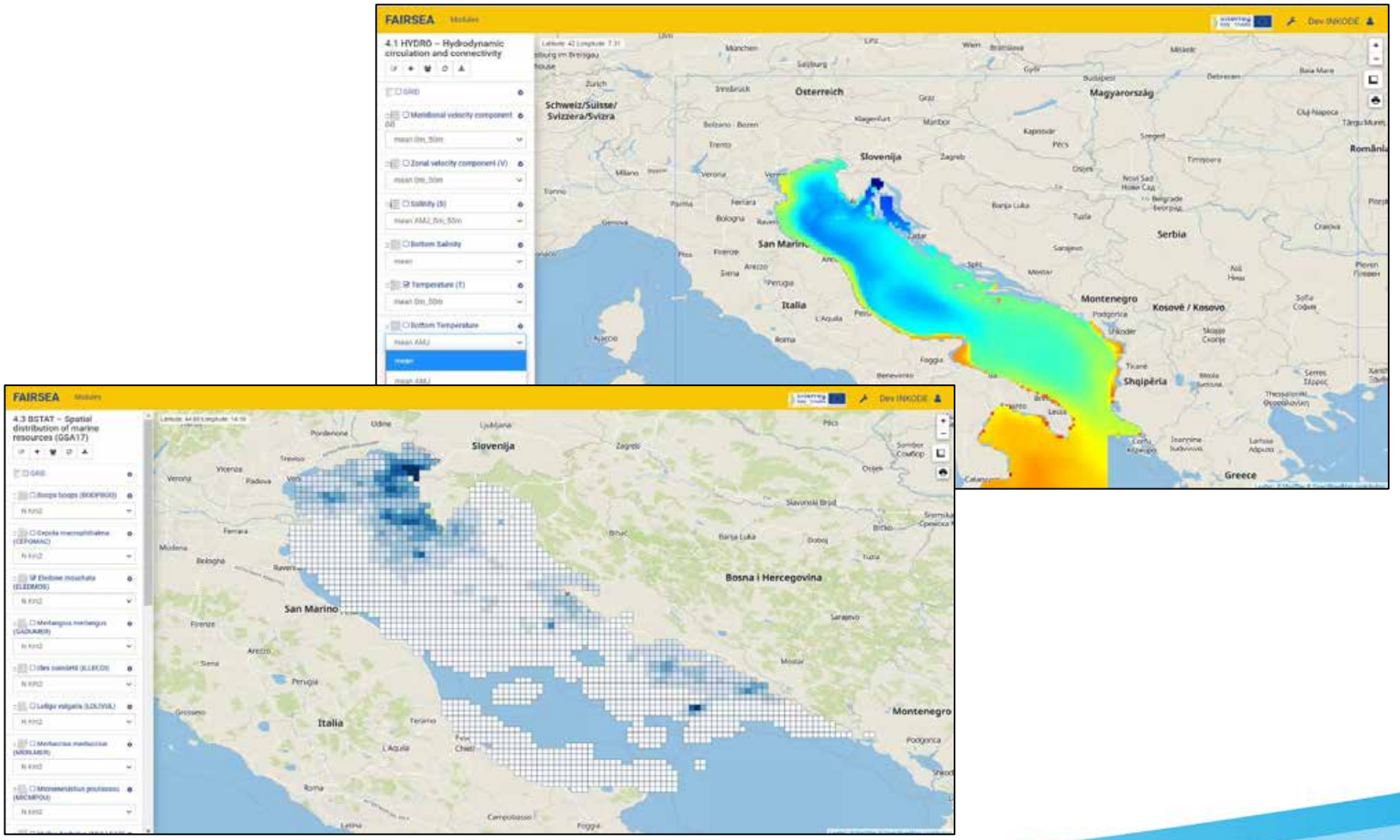
ECOSYSTEM APPROACH TO FISHERIES

The main result of FAIRSEA will be the development of an INTEGRATED PLATFORM FOR A QUANTITATIVE ECOSYSTEM APPROACH TO FISHERIES that goes across territorial boundaries and involves several disciplines.



Share knowledge and data

For an ECOSYSTEM APPROACH TO FISHERIES



To create a **common pool of knowledge**

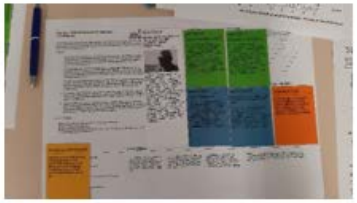
FAIRSEA PLATFORM objectives

Interreg Italy - Croatia FAIRSEA
European Regional Development Fund

EUROPEAN UNION

Develop tools for discussion

On ECOSYSTEM APPROACH TO FISHERIES



Discussion game usage

13 Sept 2019, Master Sustainable blue growth, Trieste

Upcoming events using FAIRSEA playdecide

https://playdecide.eu/playdecide-kits/167469

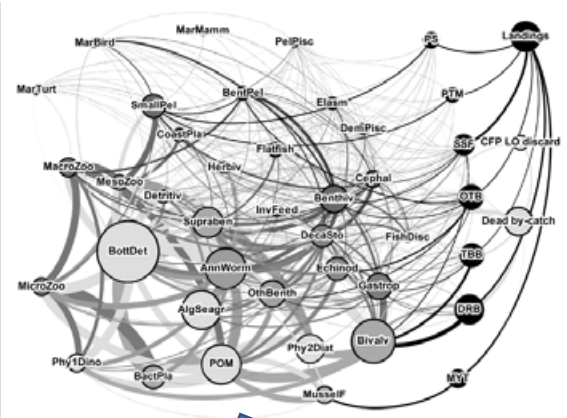
play decide
FAIRSEA

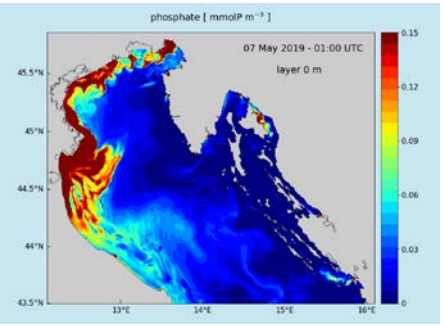
Interreg Italy - Croatia FAIRSEA
European Regional Development Fund

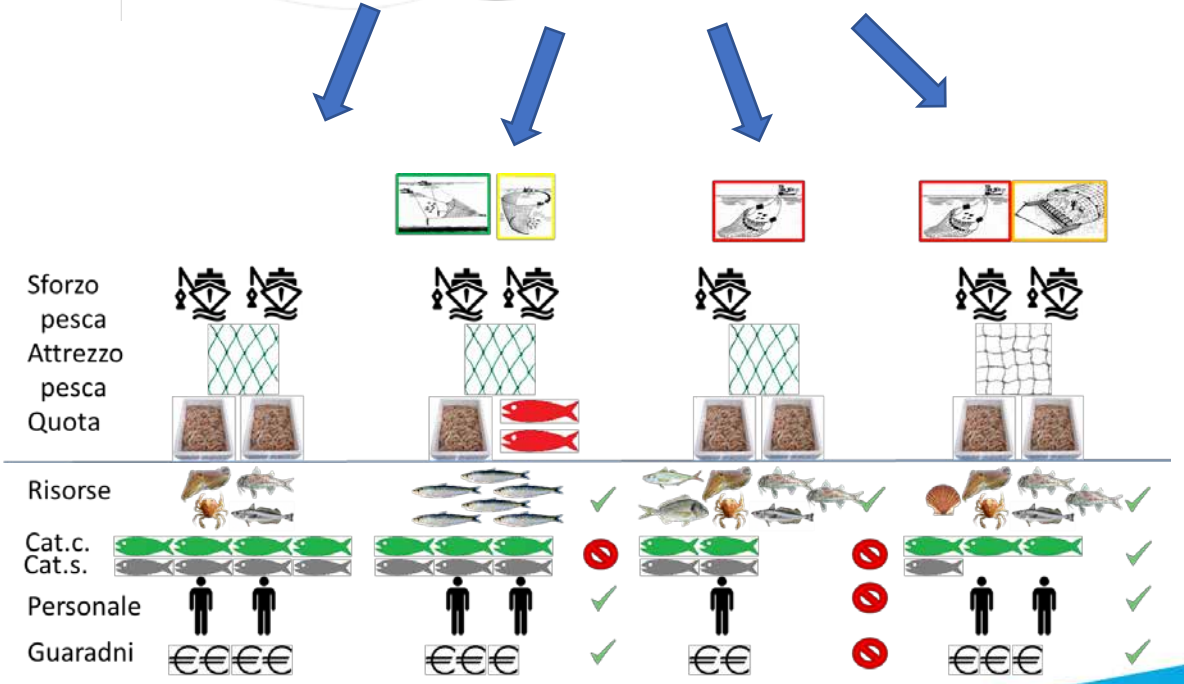
EUROPEAN UNION

Move toward an integrated decision support tool

On ECOSYSTEM APPROACH TO FISHERIES







FAIRSEA PLATFORM objectives

To serve as **planning tool** to implement demonstrative testing of applicable **fisheries policies**

Interreg Italy - Croatia FAIRSEA
European Regional Development Fund

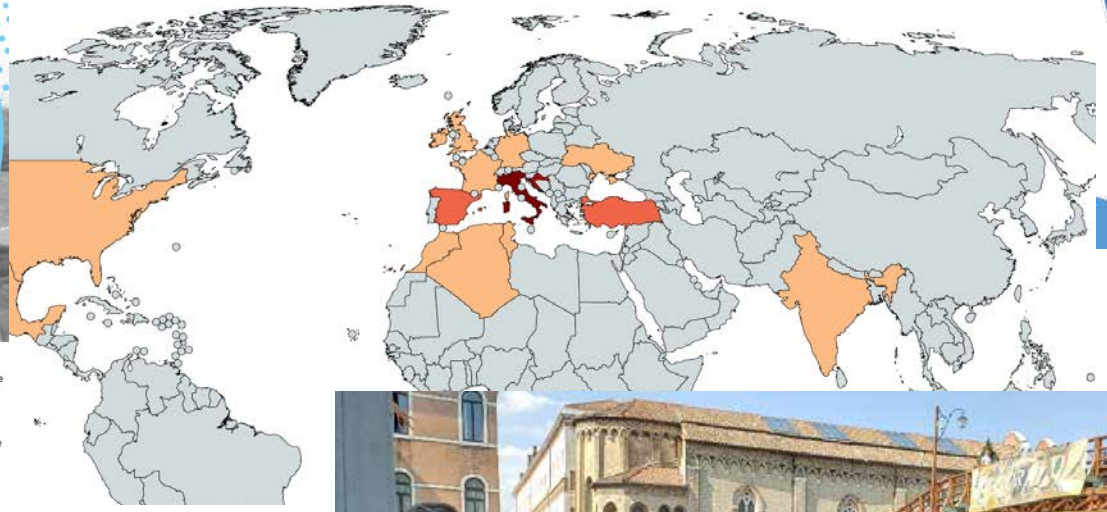
EUROPEAN UNION

Increasing capacities

On ECOSYSTEM APPROACH TO FISHERIES

To enhance the competence in complex system dynamics

FAIRSEA PLATFORM objectives



Interreg Italy - Croatia FAIRSEA
European Regional Development Fund
EUROPEAN UNION

Learning through gaming

On complexity of marine ecosystems and fisheries issues

nhance the
npetence in
plex system
dynamics

FAIRSEA
PLATFORM
objectives

To foster a consensus on the state of the environment and fisheries in the Adriatic region

T
b
s
ad

2-4 players

8+ years

45 min

Interreg
Italy - Croatia
FAIRSEA
European Regional Development Fund

EUROPEAN UNION

Increasing public awareness

On fisheries issues

Partecipatory approach

On ECOSYSTEM APPROACH TO FISHERIES

FAIRSEA PLATFORM objectives

implemen
demonstrat
testing o
applicabl
fisheries pol

a
on
the
and

To provide scientific basis for formulating and evaluating the shared management advice in the local and international **participatory processes**

Interreg Italy - Croatia FAIRSEA
European Regional Development Fund

EUROPEAN UNION

IVORY TOWER?

NO: PARTECIPATORY APPROACH!

Developing the platform also through (your) involvement as a way to:

Share objectives to reduce the risk to make something useless;

Identify the perceived important factors to be embedded;

Decide together scenarios to test;

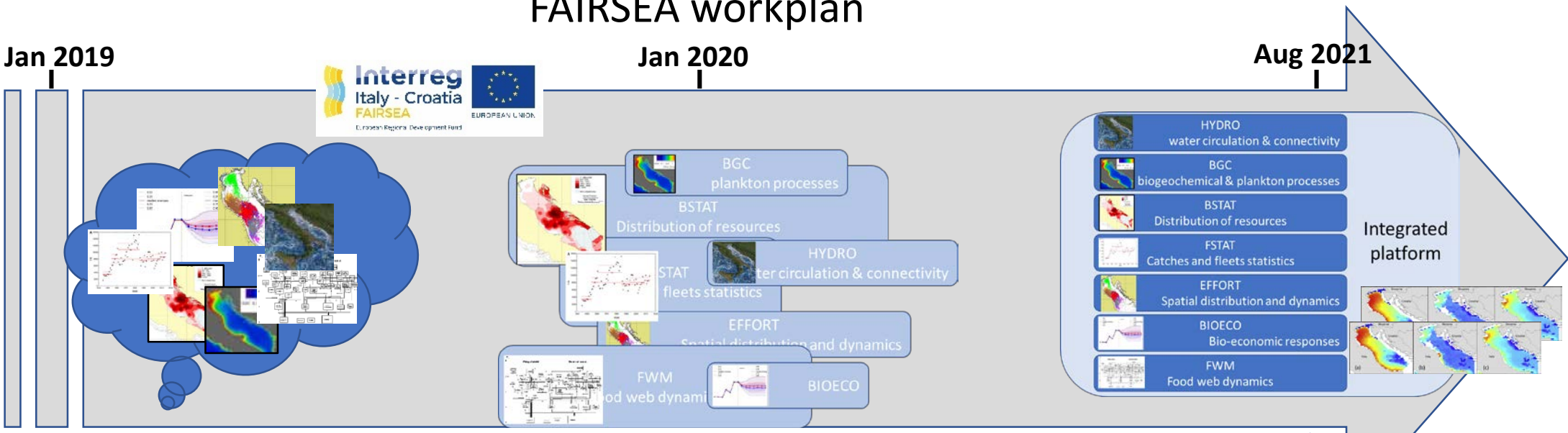
Evaluate results

PARTECIPATORY APPROACH

The platform development can be a mutual occasion

MUTUAL BENEFIT

FAIRSEA workplan



1 Inputs on:
- General objectives
- management scenarios
- Indicators to evaluate

2 Drafting management scenarios
Quantitative ranking of Indicators

3 Evaluating scenarios and tool produced

STAKEHOLDERS

THANKS for the attention

Istituto Nazionale di Oceanografia e di Geofisica Sperimentale – OGS
(National Institute of Oceanography and Applied Geophysics – OGS)
Section Oceanography
ECHO Group Ecology and Computational Hydrodynamics in Oceanography

Simone Libralato, FAIRSEA project coordinator

Via Beirut 2/4, 34151, Trieste, Italy

slibralato@inogs.it

+39 040 2140628

www.inogs.it
www.italy-croatia.eu/fairsea

WP4
The innovation approach of the FAIRSEA platform

FAIRSEA Project

II International stakeholder Meeting | 23-24.02.2021

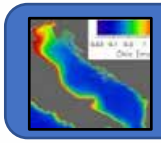
CNR-IRBIM | Francesco Masnadi & Giuseppe Scarcella

WP4 - The innovation approach of the FAIRSEA platform

WP AIMS: This WP is dedicated to the development of an **integrated platform (IP)** for a quantitative ecosystem approach to fisheries that goes across territorial boundaries and across several disciplines. The platform will integrate datasets from physics to bioeconomy of fisheries as a state of the art and decision support tool.

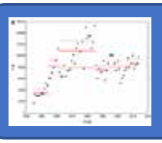
The IP cornerstone elements are:

HYDRO
Water circulation & connectivity

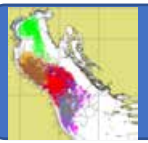


BGC
Biogeochemical & plankton processes

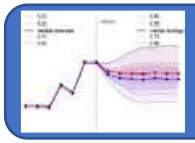
BSTAT
Distribution of resources



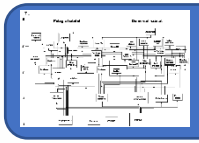
FSTAT
Catches and fleets statistics



EFFORT
Spatial distribution and dynamics



BIOECO
Bio-economic responses



FWM
Food web dynamics

Implementation of local management actions in the IP will result in **applicative pilot actions** demonstrative of operative use and potential insights that can be gained from the shared integrated approach (WP5).

WP4 - The innovation approach of the FAIRSEA platform

IP structure and development

https://www.docker.com/

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.

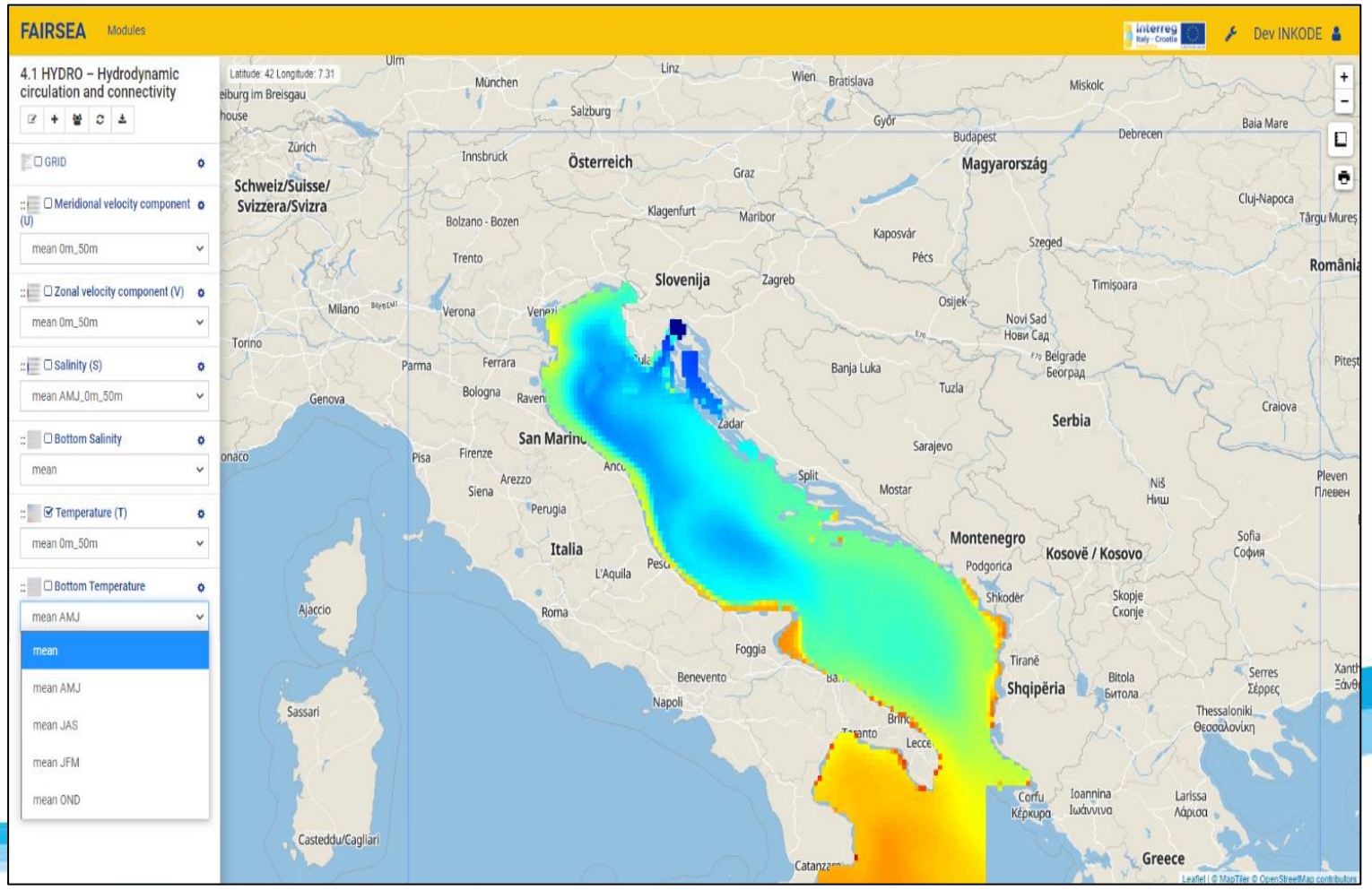
WP4 - The innovation approach of the FAIRSEA platform

HYDRO – Hydrodynamic circulation and connectivity

This module contains the description of the physical properties of the Adriatic and Ionian basins provided by a multidecadal reanalysis of the Mediterranean Sea for the past 20 years.
(CMEMS data, http://marine.copernicus.eu/).

The variables selected for the period 1999-2018 are:

- **Temperature**
- **Bottom Temperature**
- **Salinity**
- **Currents** (meridional and zonal component used as a proxy of the connectivity)



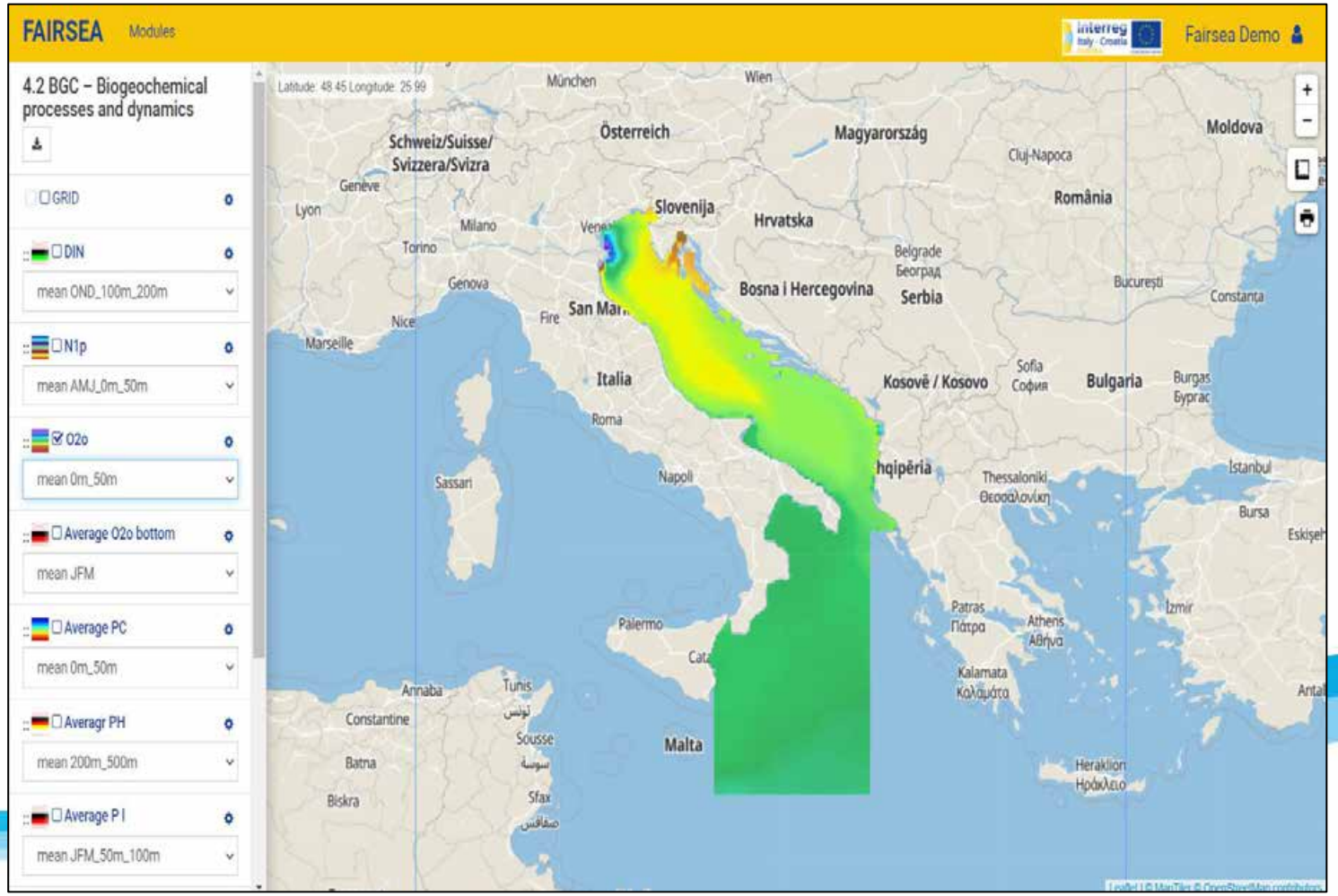
WP4 - The innovation approach of the FAIRSEA platform

BGC – Biogeochemical processes and dynamics

This module contains the description of the biogeochemical properties of the Adriatic and Ionian basins provided by a multidecadal reanalysis of the Mediterranean Sea for the past 20 years. (CMEMS data, http://marine.copernicus.eu/).

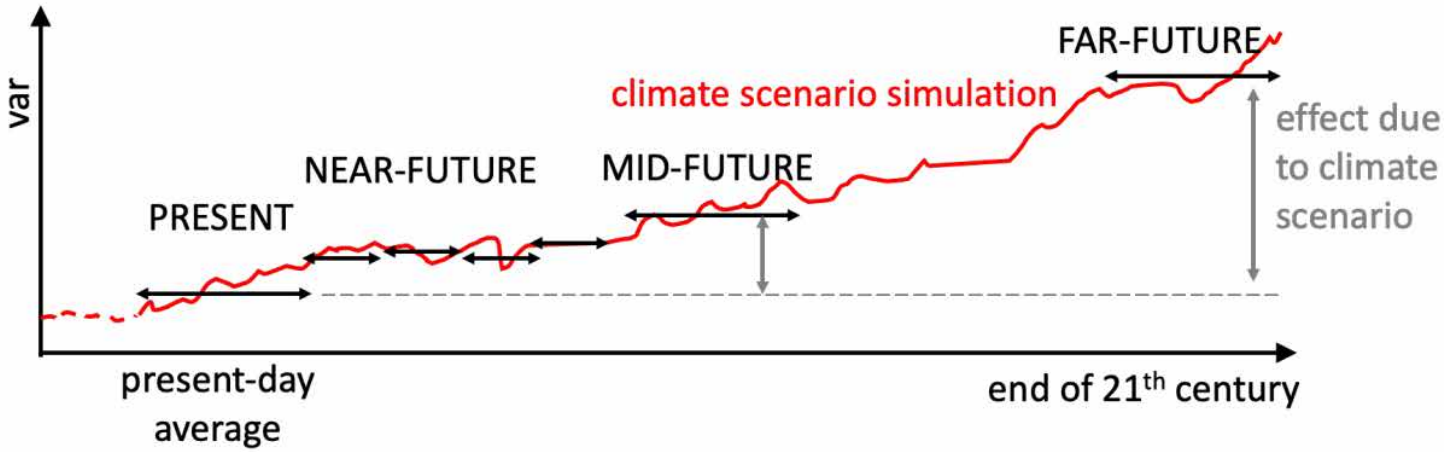
The variables selected for the period 1999-2018 are:

- **Chlorophyll-a**
- **Dissolved Nitrogen**
- **Phosphate**
- **Dissolved Oxygen**
- **Phytoplankton carbon biomass**
- **Zooplankton carbon biomass**
- **Particulate organic carbon**
- **pH**
- **Net primary production**



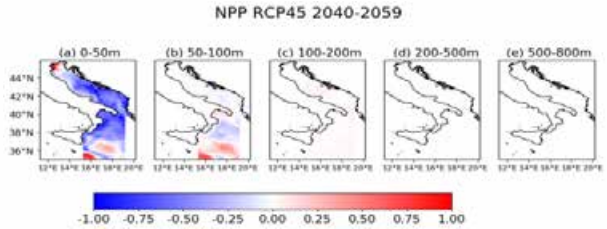
WP4 - The innovation approach of the FAIRSEA platform

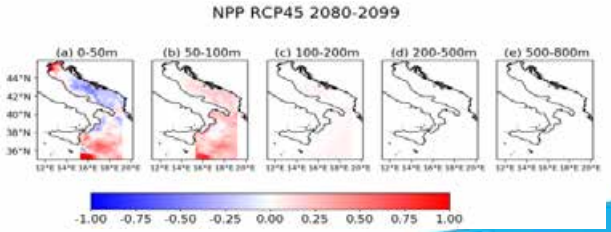
HYDRO & BGC: future scenarios



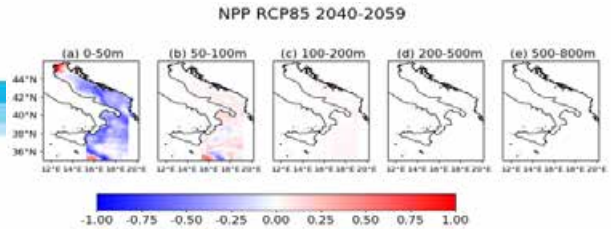
2 main reference periods (20 yrs) + 4 additional periods (5 yrs)

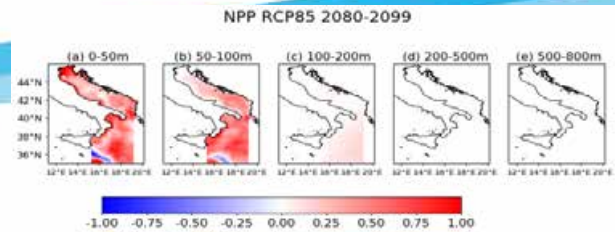
RCP4.5





RCP8.5





Interreg Italy - Croatia FAIRSEA European Regional Development Fund

EUROPEAN UNION

WP4 - The innovation approach of the FAIRSEA platform

BSTAT – Spatial distribution of marine resources

These sub-modules (BSTAT GSA17, BSTAT GSA18, BSTAT GSA19) contain database of standardized indices and maps of commercial species distribution based on the knowledge from the past 20 years divided by GSAs.

Data are gathered from the main bottom trawl surveys conducted in the Adriatic Sea and in the Western Ionian Sea by several FAIRSEA partners: **MEDITS** (GSA17,18,19) & **SOLEMON** (GS17)

Outputs from trawl surveys are provided thanks to specifically designed open source tools, as Rroutine BioIndex and BioStand (available at: https://www.coispa.it).

GSA17
Mullus barbatus
Illex coindetii
Merluccius merluccius
Micromesistius poutassou
Merlangus merlangus
Trachurus mediterraneus
Trachurus trachurus
Eledone moschata
Boops boops
Loligo vulgaris
Pagellus erythrinus
Trisopterus capelanus
Parapenaeus longirostris
Solea solea
Squilla mantis

GSA19
Mullus barbatus
Pagellus acarne
Trachurus trachurus
Merluccius merluccius
Parapenaeus longirostris
Illex coindetii
Phycis blennoides
Pagellus erythrinus
Micromesistius poutassou
Aristeus antennatus
Trachurus mediterraneus
Aristaeomorpha foliacea
Lophius budegassa
Pagellus bogaraveo
Helicolenus dactylopterus
Eledone cirrhosa
Nephrops norvegicus
Galeus melastomus

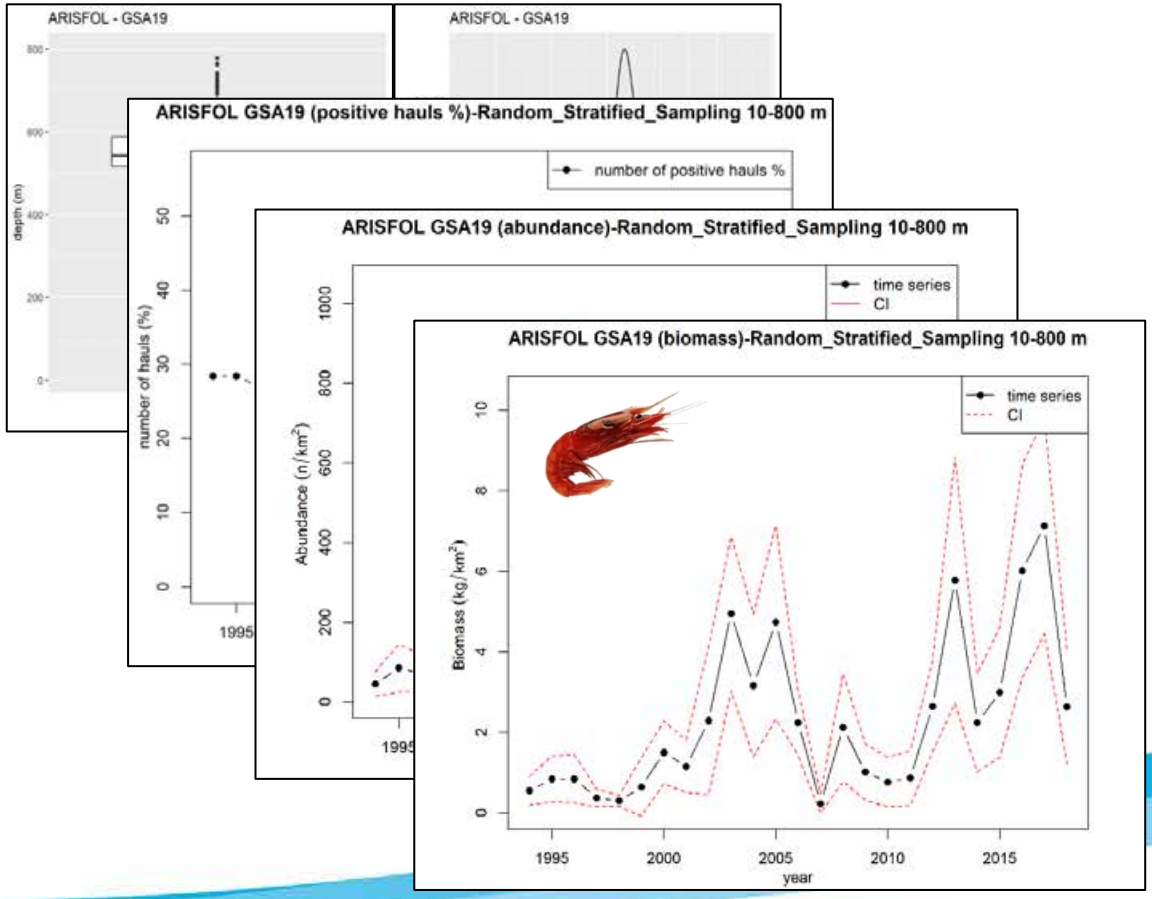
GSA18
Mullus barbatus
Merluccius merluccius
Illex coindetii
Spicara flexuosa
Trachurus trachurus
Parapenaeus longirostris
Spicara smaris
Apitrigla cuculus
Loligo vulgaris
Phicis blennoides
Micromesistius potassou
Pagellus erythrinus
Helicolenus dactylopterus
Bothus podas
Trachurus mediterraneus
Lophius budegassa
Eledone cirrhosa
Octopus vulgaris
Pagellus acarne
Boops boops
Todaropsis eblanae
Pagellus bogaraveo
Allotheutis media
Conger conger
Aristaeomorpha foliacea
Aristeus antennatus

WP4 - The innovation approach of the FAIRSEA platform

BSTAT – Spatial distribution of marine resources

BioIndex folders contains plots and data table of biomass and abundance index together with temporal and spatial trend of key population state-indicators providing comparable information among the various GSAs.

1. bathymetric distribution
2. number of positive hauls to the species
3. the mean biomass index (kg/km^2)
4. the mean abundance index (number/km^2),
5. the inverse of mean abundance Coefficient of Variation (CV)
6. the mean individual weight (MIW)
7. the sex-ratio
8. the index of recruits (number/km^2)
9. the index of spawners (number/km^2)
10. the length at 95° percentile (L0.95)

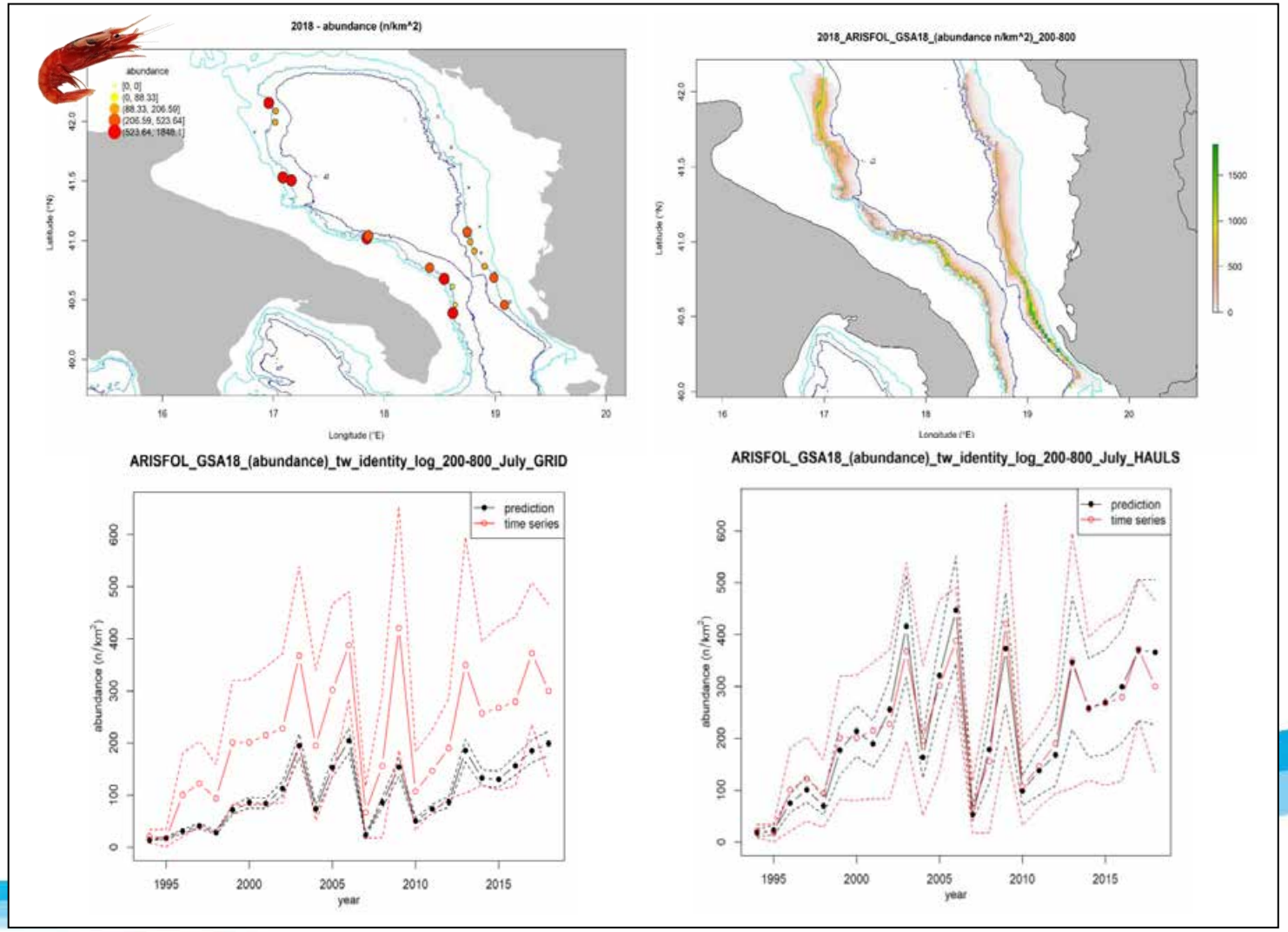


WP4 - The innovation approach of the FAIRSEA platform

BSTAT – Spatial distribution of marine resources

BioStand folder contains plots and table outputs from the standardization procedure using Generalized Additive Models (GAM).

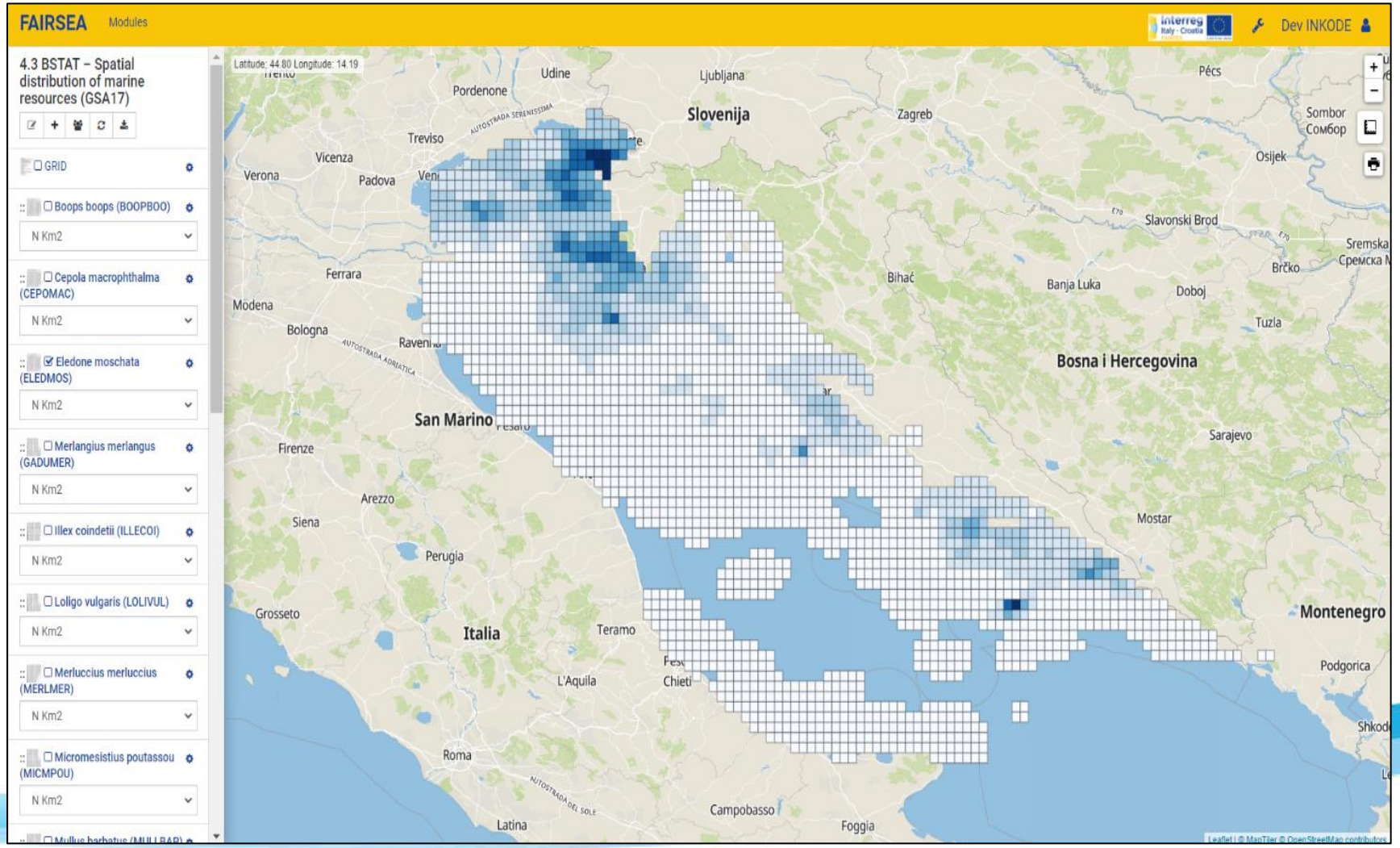
1. Standardized biomass index (kg/km^2)
2. Standardized abundance index (number/km^2)
3. Various model diagnostic plots
4. Maps of predicted spatial distribution



WP4 - The innovation approach of the FAIRSEA platform

BSTAT – Spatial distribution of marine resources

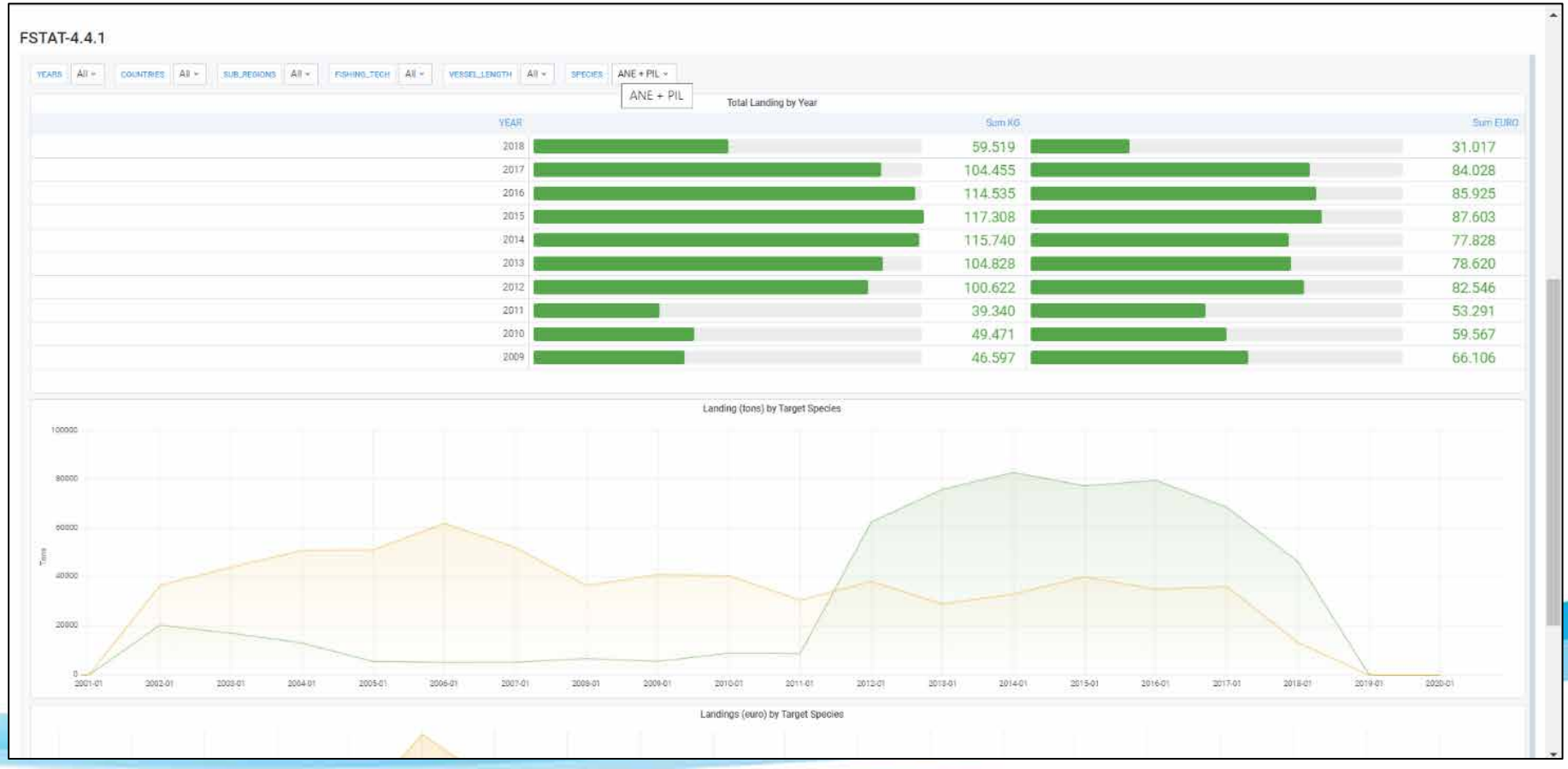
Spatial distribution of of interesting species in the GSA17 from MEDITS survey



WP4 - The innovation approach of the FAIRSEA platform

FSTAT – Catches and fishing capacity by fleet segment

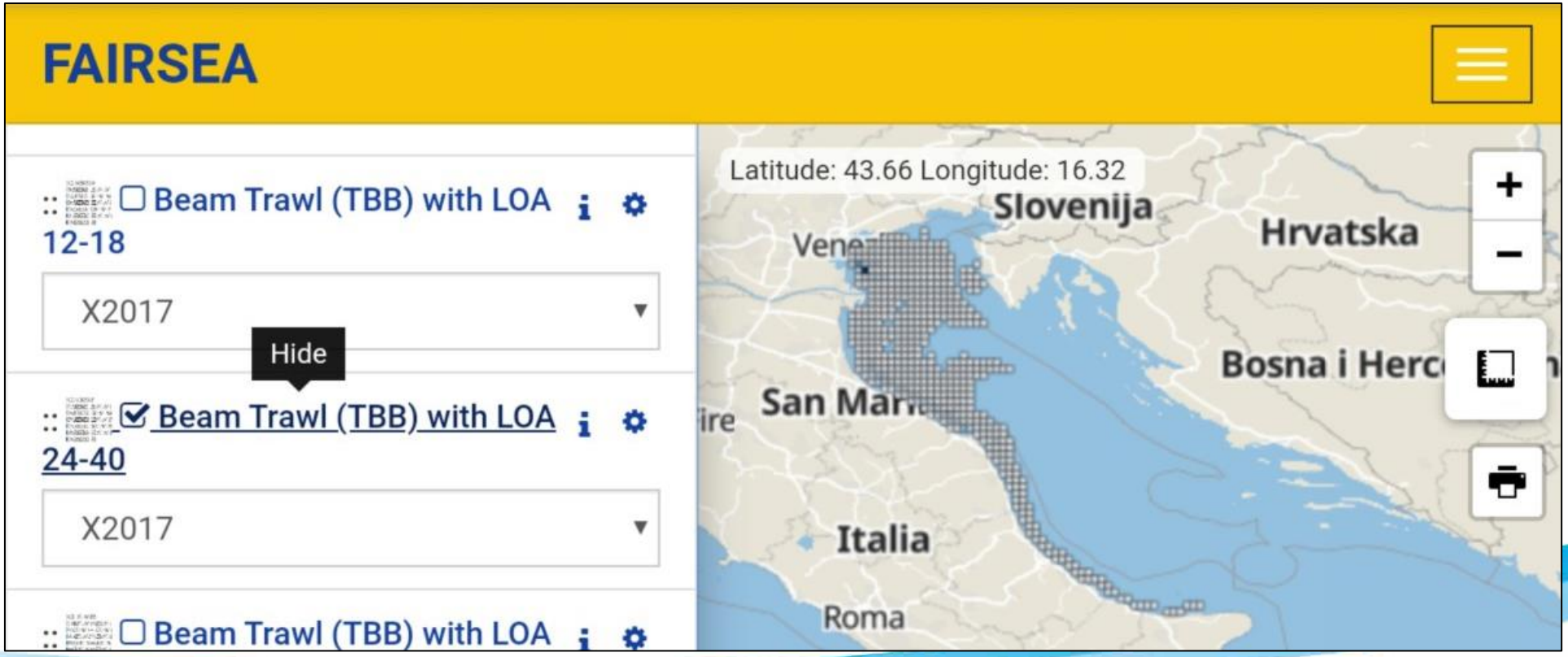
This module contains a dataset of fisheries dependent information including data for the last decade in terms of catches (both quantities and price), length frequency distribution (LFD) and fleet capacity (number, GT, LOA, and fixed and variable costs) by species and fleet segment.



WP4 - The innovation approach of the FAIRSEA platform

EFFORT – Effort distribution and fleet displacement

This module contains fishing effort maps distribution by the main fishing segments obtained by VMS/AIS data on vessel displacement using the state-of-the-art **VMSbase** platform (Russo et al., 2014; D'Andrea et al., 2020)



WP4 - The innovation approach of the FAIRSEA platform

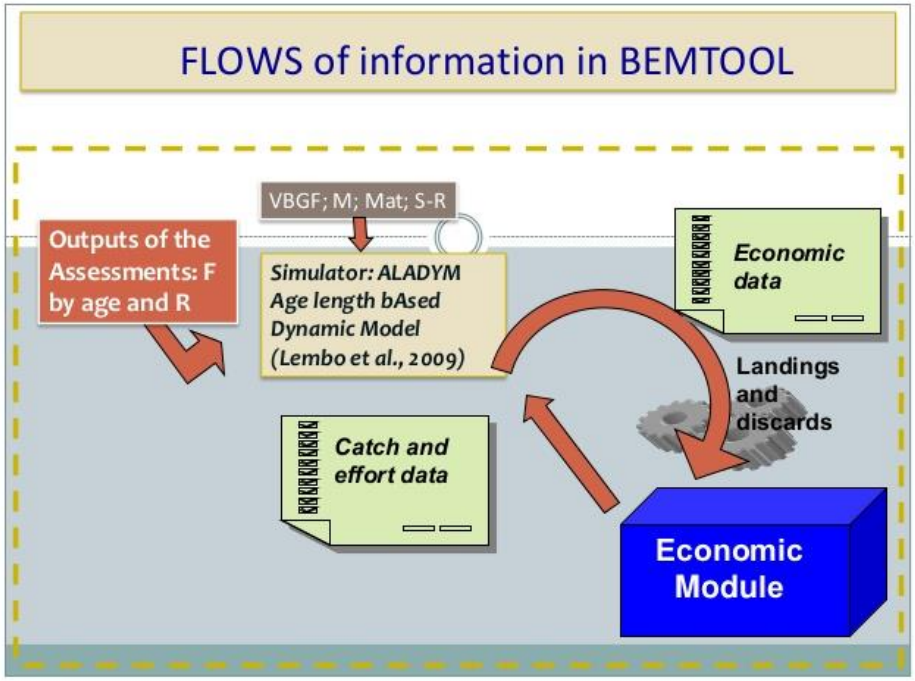
BIOECO – Effort distribution and fleet displacement

COISPA Tecnologia & Ricerca
Stazione sperimentale per lo studio delle risorse del mare

This module will contains the output of different alternative management scenarios in the Adriatic-Ionian region obtained using **BEMTOOL** bio-economic model (Spedicato et. al 2016). This tool allows to set scenarios for evaluating how changes/shifts in population traits (e.g. natural mortality, growth), fishery-driven impacts (e.g. fishing mortality, population and gear selectivity) and management or fishing strategies (e.g. closed season, changes in fishing opportunity), affect stock and fisheries dynamics in terms of landings, discards and economic performance.

BEMTOOL model includes 6 sub-modules:

a) biological;
b) impact;
c) socio-economic;
d) policy/harvest rules;
e) fleet behaviour;
f) MCDA.

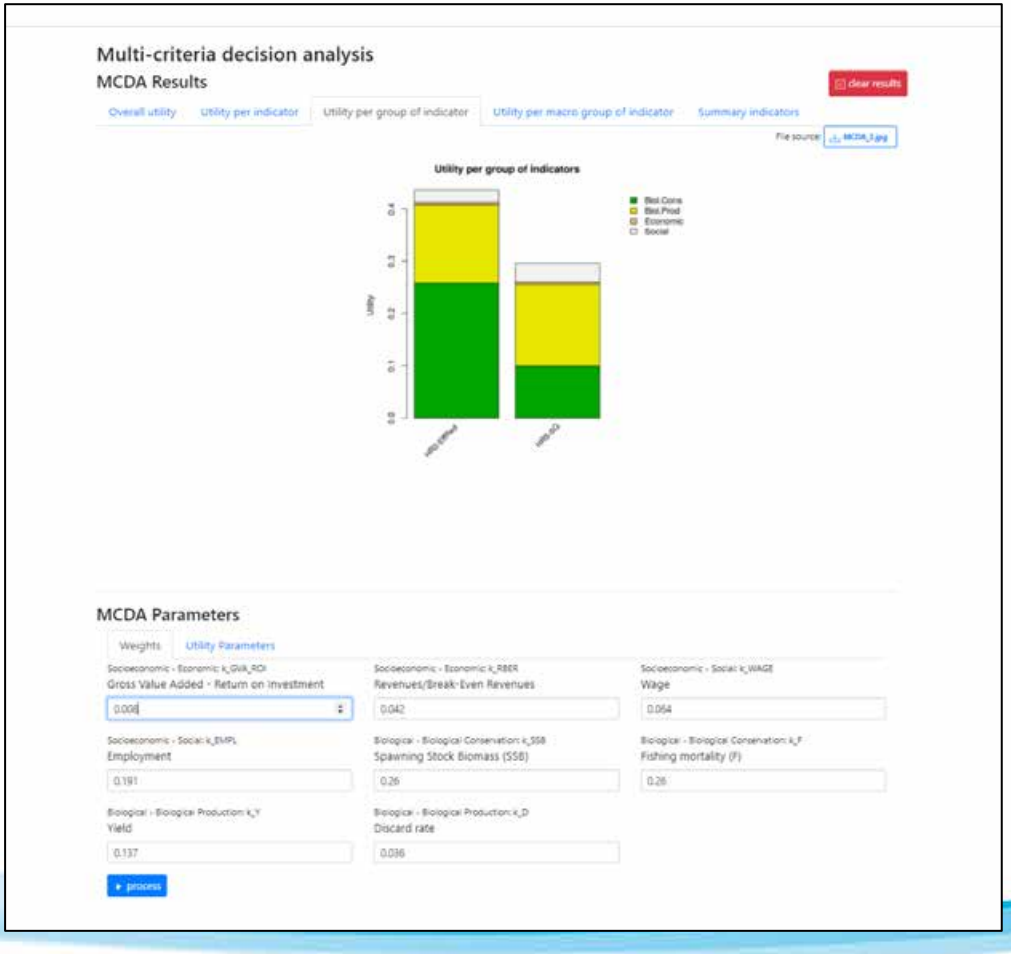


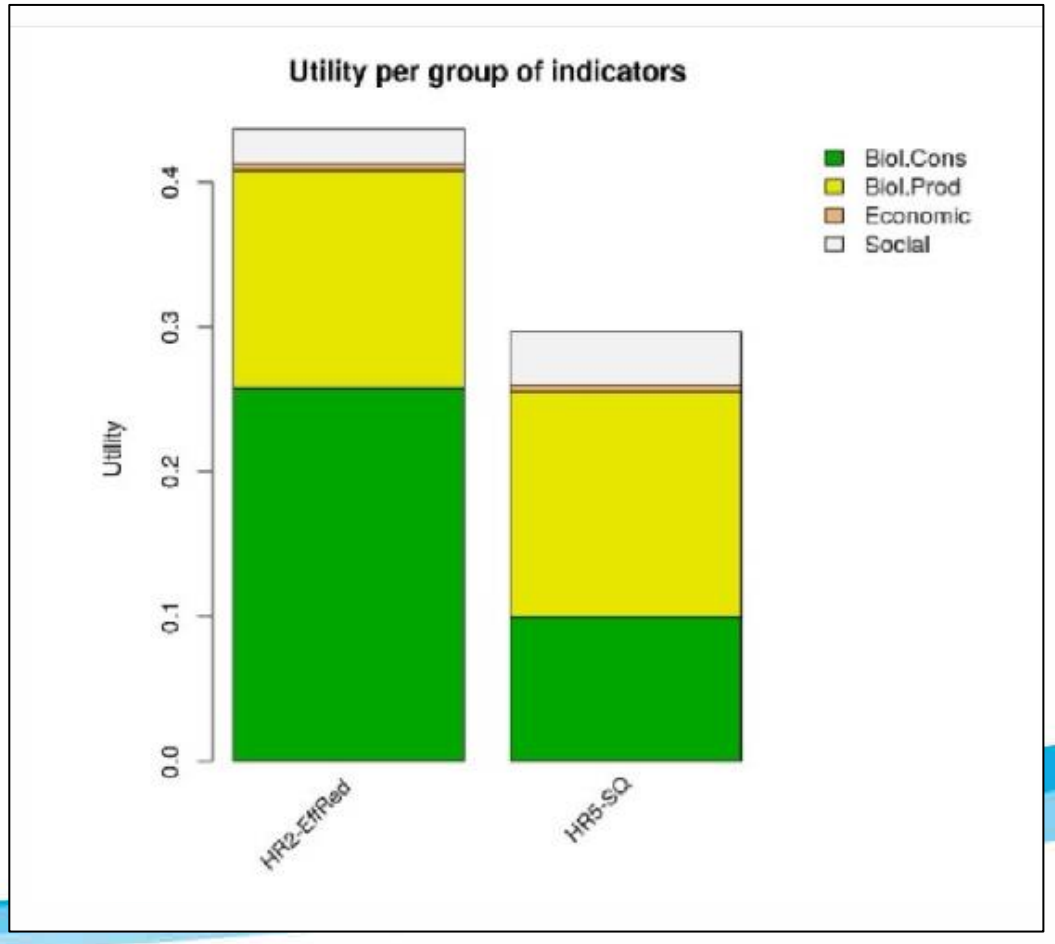
WP4 - The innovation approach of the FAIRSEA platform

BIOECO – Effort distribution and fleet displacement

COISPA Tecnologia & Ricerca
Stazione sperimentale per lo studio delle risorse del mare

MCDA (Multiple-criteria decision analysis) **:** allow the dynamic generation of different scenarios results under different management criteria (e.g. socioeconomic vs. biological objectives)

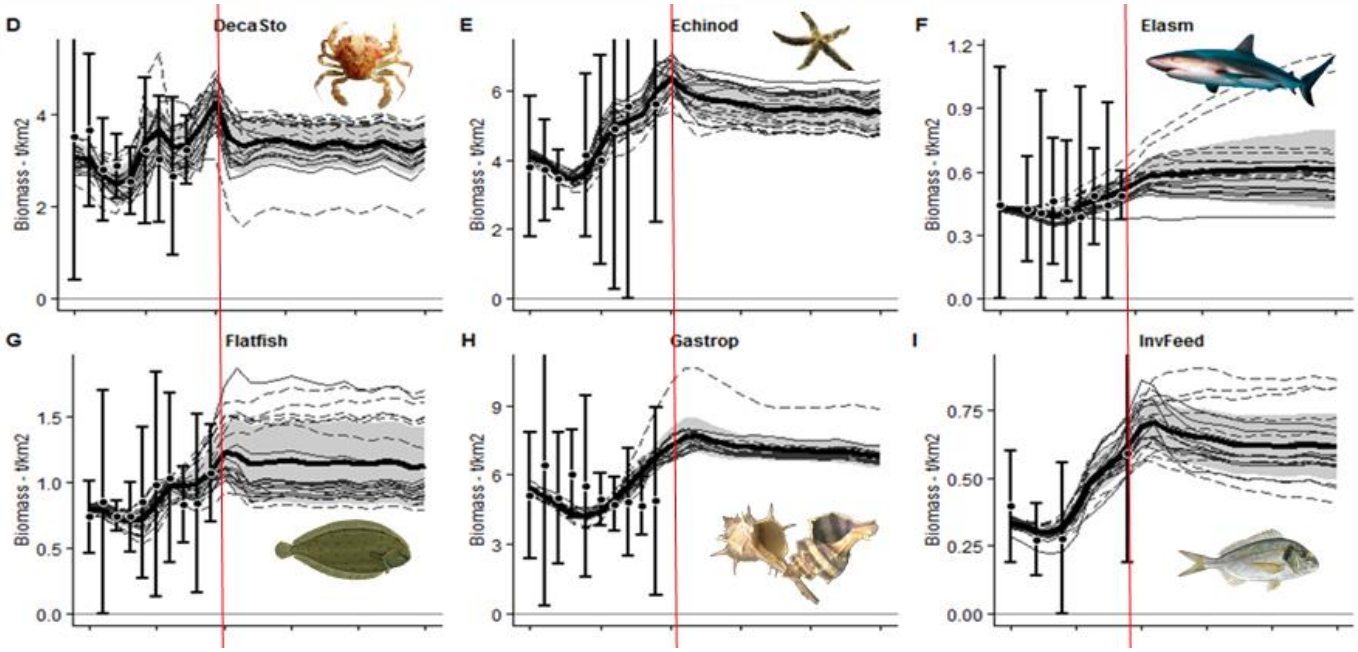




WP4 - The innovation approach of the FAIRSEA platform

FWM – Food web modelling

This module will contains the output from **Ecopath** approach applied to 3 food web models describing the trophic structure of the Adriatic and Ionian Sea.

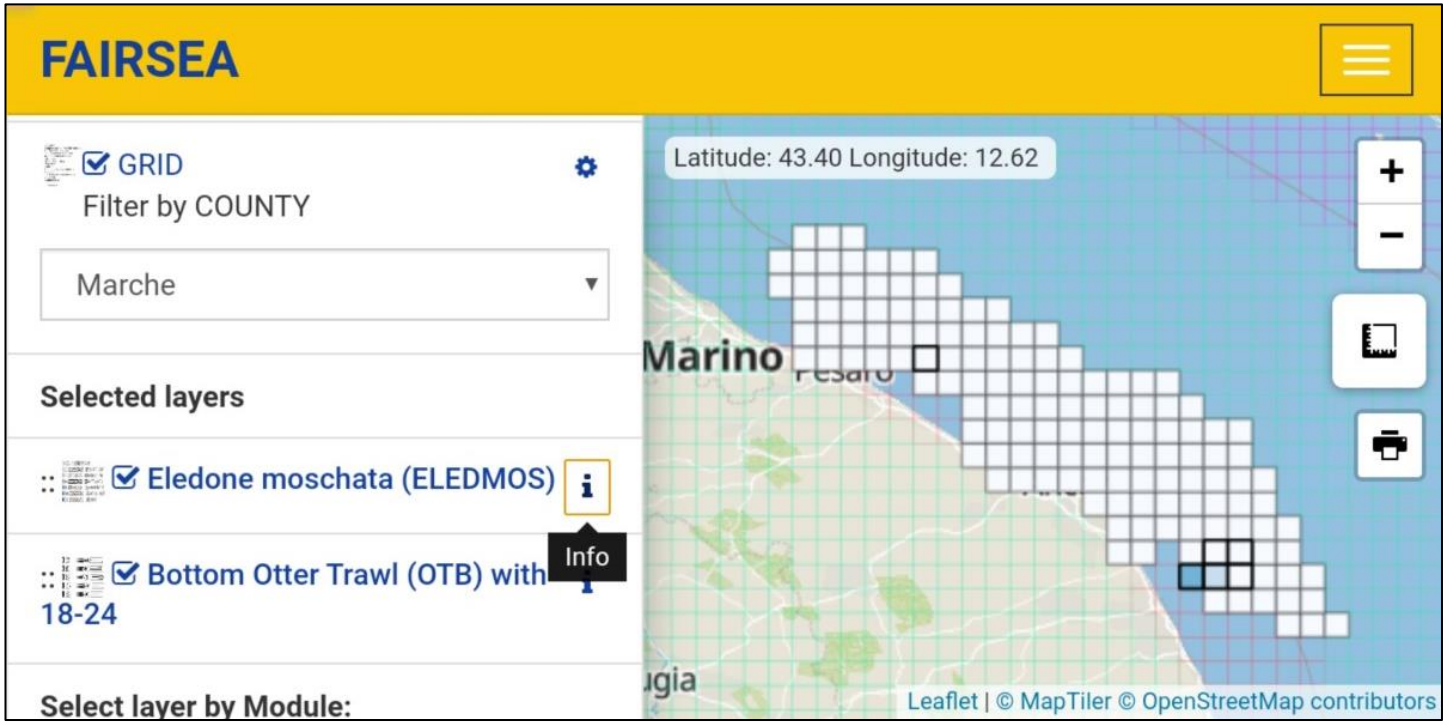


Example from the North Adriaic model (Celić et al. 2018)

WP4 - The innovation approach of the FAIRSEA platform

Summary Module

Interaction workspace between different modules. Possibility of simple calculations on the layers on a regional/county basis (mean, sum, min and max value)



Eledone moschata (ELEDMOS)

Metrics on N_Km2

Grid filter: **Marche**

Average: **4.004161743697478**

Min: **0**

Sum: **952.9904949999997**

Max: **66.91217**

Bottom Otter Trawl (OTB) with 18-24

Metrics on X2018

Grid filter: **Marche**

Average: **825.5096899224806**

Min: **0**

Sum: **141987.66666666666**

Max: **8332.66666666667**

WP4 - The innovation approach of the FAIRSEA platform

Alpha/testing version 0.8 running at
http://fairsea.caspar.inkode.it:8887/#/login

View-only credentials:

username → ***viewer***

password → ***fairsea2020***

THANKS for the attention

CNR-IRBIM, Ancona
Francesco Masnadi
Giuseppe Scarcella

CNR
IRBIM
ISTITUTO PER LE RISORSE BIOLOGICHE E LE BIOTECNOLOGIE MARINE

Address: L.go Fiera della Pesca – 60125 Ancona Italy

email@: francesco.masnadi@irbim.cnr.it

email@: giuseppe.scarcella@cnr.it

www.italy-croatia.eu/fairsea

Current and forthcoming management measures on demersal and pelagic species in the Adriatic Sea

FAIRSEA| MEDAC

SECOND INTERNATIONAL STAKEHOLDER MEETING
Virtua| 24 February 2021

European Regional Development Fund

Co-founded by the European Union

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)

The multiannual management plan shall, in particular:

a) apply the precautionary approach to fisheries management;

b) ensure that exploitation levels of key stocks are at the MSY by 2026;

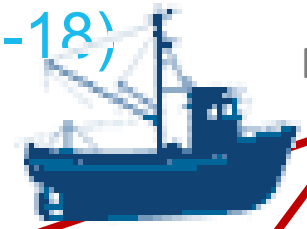
c) prevent increase in fishing capacity in relation to either year 2015 or the average of2015–2017,and in fishing effort in relation to either 2015 or the average of three years within the range 2015–2018;

d) protect nursery and spawning areas as well as essential fish habitats that are important for the most important commercial demersal stocks;

e) contribute to the elimination of discards, by avoiding and reducing unwanted catches and ensuring that all catches are landed; and

f) provide measures to adjust the fishing capacity and effort of the fleets to levels of fishing mortality consistent with the MSY, with a view to having economically viable fleets and without overexploiting marine biological resources.

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)



Fishing effort regime
1° Step

By 2021
Overall fishing days Reduction

-12% OTB bottom otter trawls,
-16% TBB beam-trawls

Proportional to the CPC (contracting parties and cooperating non-contracting parties) contribution to the total fishing effort with respect to 2015 or average over 2015-2018. Each CPC shall ensure that its effort reduction is proportional to its contribution (Annex 4)

European Hake (*Merluccius merluccius*)

Deep-water rose shrimp (*Parapenaeus longirostris*)

Red mullet (*Mullus barbatus*)

Common sole (*Solea solea*) only 17

Norway lobster (*Nephrops norvegicus*)

For the period 2022-2026 on the basis of SAC advice: 5 years fishing effort regime (Fishing days by effort group) - on the basis of SAC advice, the GFCM shall establish yearly effort quotas[1] in fishing days for:

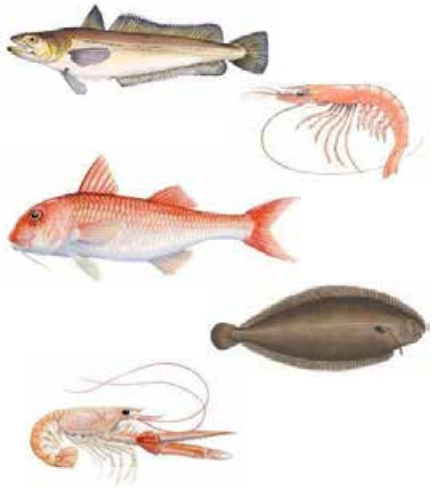
Gear type	GSA	Stocks concerned
Trawls (OTB)	17-18	Red mullet; European hake; Deep-water rose shrimp, and Norway lobster
Otter Twin Trawls (OTT)	17-18	
Bottom pair Trawls (PTB)	17-18	
Beam Trawls (TBB)	17	Common sole

[1] Derogation for national fleets operating with OTB and fishing for less than 1 000 days during the reference period. such national fleets shall not exceed the effort limit of 3000 fishing days per year

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)

Minimum conservation reference size

As for the Reg. EU 2019/1241 on Technical measures



European hake (*Merluccius merluccius*)	20 cm Total length
Deep-water rose shrimp (*Parapenaeus longirostris*)	20 mm carapace length
Red mullet (*Mullus barbatus*)	11 cm Total length
Common Sole (*Solea solea*) only 17	20 cm Total length
Norway lobster (*Nephrops norvegicus*)	20 mm carapace length Or 70 mm Total length

Fisheries restricted areas

- ✓ Rec. GFCM/41/2017/3 on FRA in the Jabuka/Pomo Pit shall apply;
- ✓ **FRAs shall be established for the conservation and management of the stocks in the Adriatic Sea.** CPCs concerned should possibly submit necessary data for the evaluation of FRAs **(and then SAC evaluation);**
- ✓ Any fishing activity with otter bottom trawls, bottom pair trawls, otter twin trawls and beam trawls in the FRA areas shall be prohibited unless differently provided.

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)

Spatial and Temporal closure

- **At least 8 weeks out to 6 nautical miles, or 4 nautical miles** for vessels not allowed to fish beyond 6 nautical miles, to towed gears targeting demersal stocks

OR IN ALTERNATIVE

- **At least 30 continuous days and covering at least 20% of territorial sea** to bottom otter trawls, bottom pair trawls, otter twin trawls and beam trawls irrespective of their overall length in areas and periods recognized as important for the protection of juvenile of demersal stocks

CPCs shall communicate to the GFCM Secretariat, not later than 30 June 2020 and thereafter annually, the spatial restrictions

ON ANNUAL BASIS THE SCIENTIFIC ADVISORY COMMITTEE SHALL PROVIDE ADVICE ON STATUS OF KEY STOCKS

GFCM MAY REVIEW THE CONTENT OF MAP (including the bottom long lines according to the SAC advice on their impact on hake)

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)

Trawls (OTB)

Otter Twin Trawls (OTT)

Bottom pair Trawls (PTB)

Beam Trawls (TBB)

Overall fleet capacity

of the fleets actively fishing for key demersal stocks in terms of:

- gross tonnage (GT) and/or
- gross registered tonnage (GRT),
- engine power (kW) and
- number of vessels,

Does not EXCEED the fleet capacity for demersal fisheries in year **2015 or average over 2015-2017**[1]

- ✓ LIST OF AUTHORIZED FISHING VESSELS (by 31 January of each year)
- ✓ VESSELS >12 m – VMS from 1 January 2021 and electronic logbook from 1 January 2022
- ✓ VESSELS <12 m the most appropriate geo-positioning and catch reporting systems will be assessed.
- ✓ And other measures aimed to record and monitor vessel's catches and fishing effort (pilot projects aimed to detect actual fishing hours: to record and report in real time the shooting and hauling of deployed demersal towed gear)

[1] Derogation for national fleets operating with OTB and fishing for less than 1 000 days during the reference period. The fishing capacity of such active fleets operating with OTB shall not increase by more than 50% with respect to the reference period.

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)

- The SAC shall provide, on an annual basis as of 2020, **advice on the status of key stocks** in the Adriatic Sea, including specific objectives to maintain fishing mortality within **agreed precautionary fishing mortality reference points**

- The SAC shall assess the **biological, economic and social implications** of **implementing several management scenarios** with the objective of restoring and maintaining the stocks' population above levels which can produce the MSY.

Based on SAC advice, the GFCM may review the content of the multiannual management plan.

Rec. 43/2019/5 On a MAP for demersal fishing activities in the Adriatic Sea (GSAs 17-18)

✓ **Specific measures to address IUU fishing activities**

The obligation to electronically declare catches will apply irrespective of the volume of the catch to vessels above 12 m length from 1st of January 2022. And the system for vessels <12 m will be defined.

Designation of landing points for key stocks and transshipment rules.

✓ **Monitoring Control and Surveillance (MCS) programme**

All key stocks catches shall be reported in the logbook irrespectively of the live weight of the catch, as well as catches of non-target species in excess of 50 kg

✓ **Pilot Inspection Scheme**

GFCM shall establish, in 2020, a pilot project with a view to establishing an observation and inspection programme in order to ensure compliance with the conservation and management measures contained in this Recommendation.

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

✓ **General objective and geographical scope**

- The general objective is to ensure that exploitation levels of small pelagic stocks in the Adriatic Sea are reduced
  - ➢ in order to achieve MSY by 2020 and
  - ➢ to ensure the stability, in socio-economic terms, of fishing fleets targeting small pelagics.
- The present recommendation shall apply to GSA 17 and GSA 18 (Adriatic Sea)

until 2021

Emergency management measures

Fishing effort

Closures

Fleet capacity and fleet register

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

✓ **Emergency management measures**

In 2019, 2020 and 2021, contracting parties and cooperating non-contracting parties (CPCs) shall not exceed the level of catches for small pelagics exerted in 2014[1]

In addition, in 2019, 2020 and 2021, the CPCs with declared catches over 2500 tonnes in 2014 shall implement a **progressive 5% reduction each year starting from the level of catches of small pelagics in 2014**

If the catch limit is exceeded in any given year, the GFCM shall recommend appropriate management measures compensating the overcatch.

[1] These provisions shall not apply to CPCs with catches below 2500 tonnes in 2014 (TAC of 2500 in each year - 2019, 2020 and 2021)

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

✓ **Fishing effort**

Fishing vessels targeting small pelagics **shall not exceed 180 fishing days per year**:

- with a maximum of 144 fishing days targeting sardine and of 144 fishing days targeting anchovy

✓ **Fleet capacity and fleet register**

- The overall fleet capacity of trawlers and purse seiners actively fishing for small pelagic stocks (GT, GRT, kW and number of vessels) does not exceed the fleet capacity for small pelagics in 2014.[1]

[1] this provision shall not apply to the national fleets of less than 10 purse seiners and/or pelagic trawlers actively fishing for small pelagic stocks. In such case, the capacity of active fleets may increase by not more than 50% in number of vessels and in terms of GT and/or GRT and kW.

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

✓ **Closures**[1]

CPCs shall apply specific **temporal closures at the fleet level** (even if not simultaneous for purse seiners and pelagic trawlers) in view of **protecting stocks during spawning periods**

- shall cover the entire distribution of small pelagic stocks and affect all fleets targeting small pelagics
- periods of no less than 30 continuous days per fleet segment
- Vessels belonging to fleets subject to closure shall be prohibited to change gear for targeting small pelagics during the closure period
- Such closures shall take place: - for sardine, from 1 October to 31 March
  - for anchovy, from 1 April to 30 September

[1] Derogation: such temporal closures may be implemented for periods of no less than 15 continuous days for national fleets of less than 15 purse seiners and/or pelagic trawlers actively fishing for small pelagic stocks

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

✓ **Closures**[1]

CPCs shall apply spatial closures **to vessels over 12 m length overall** for no less than

- 7months in 2019,
- 8 months in 2020 and
- 9 months in 2021

Such closures shall cover 30% of the territorial or inner waters identified as important for the protection of early age classes of fish.

In 2019, 2020 and 2021 fishing activity with purse seiners and pelagic trawlers targeting anchovy or sardine shall be prohibited in the area of Pomo/Jabuka Pit

[1] Derogation: such temporal closures may be implemented for periods of no less than 15 continuous days for national fleets of less than 15 purse seiners and/or pelagic trawlers actively fishing for small pelagic stocks

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

✓ **Scientific monitoring**

The SAC (Scientific Advisory Committee) shall:

- suggest alternative solutions to ensure the availability of the results of hydroacoustic surveys of the previous year not later than 31 January
- evaluate each year the effectiveness of the emergency measures
- give mandate to the **Workshop on the assessment of management measures (WKMSE)** to carry out a management strategy evaluation (MSE) in order to test alternative management approaches to be implemented starting from 2022

On the basis of the outcomes of WKMSE and of SAC advice, the GFCM shall in 2022 at the latest, implement a management plan.

✓ **Monitoring, control and surveillance programme**

In order to facilitate the monitoring of catches, all catches shall be landed, with the exception of those catches which may be discarded in accordance with existing national legislation.

Rec. 42/2018/8 on further emergency measures in 2019-2021 for small pelagic stocks in the Adriatic Sea (GSAs 17-18)

The Working Group on Management Strategies:

- shall test, starting from 2022, alternative management approaches (harvest control rule [HCR]) for anchovy and sardine in the Adriatic Sea using **different effort and/or catch-based management strategies**

- may propose and test other appropriate management scenarios for small pelagics fisheries in the Adriatic based on the **ecosystem approach**

- Evaluate **the impact of the different HCR on the socio-economic aspects** of the concerned fleets and related industries (processing and tuna farming).

Additional Spatial closures?

Fishery Restricted areas?

Selectivity improvements?

Fishing effort regime OR TAC?

Mixed management or not?

Years of MAP And business planning?

Current and forthcoming management measures on demersal and pelagic species in the Adriatic Sea

Mediterranean Advisory Council
Rosa Caggiano

Via XX Settembre, 20 – 00187 Roma

segreteria@med-ac.eu

+393898922080

www.italy-croatia.eu/FAIRSEA

WP5- Act.5.1

«Socio-economic effects of different management scenarios applied to Rapido trawl fishery targeting common sole in Marche Region»

FAIRSEA| ASSAM| Uriano Meconi

II International stakeholder Meeting | 23-24.02.2021

European Regional Development Fund

Marche Region in figures (I)

- 174 km of coastline
- 8 ports and 12 landing points
- Third-largest region in Italy by gross tonnage of shipping
- A fishing fleet consisting of 778 vessels and 2000 employees
- A third of the national hydraulic dredges fleet for baby clam
- 37 fish processing industries
- The first Region in Italy to establish Allocated Zones for Aquaculture

* Marche Region –Fisheries Economy Department

Marche Region in figures (II)

Technical features of the fishing fleets, MARCHE, 2018

	Unità		Tonnellaggio		Potenza motore	
Sistemi	**num.**	**% num sul totale**	**GT**	**% GT sul totale**	**KW**	**% KW sul totale**
Circuizione	1	0,22%	144	0,99%	441	0,54%
Draghe Idrauliche	221	18,02%	3.396	23,36%	23.616	29,13%
Piccola pesca	401	61,47%	763	5,25%	12.151	14,99%
Rapido	19	2,83%	1.799	12,37%	7.335	9,05%
Strascico	119	14,96%	6.588	45,31%	29.213	36,03%
Volante	17	2,50%	1.850	12,72%	8.319	10,26%
Totale complessivo	**778**	**100,00%**	**14.540**	**100,00%**	**81.075**	**100,00%**

Catches, revenues and unit price of catches of the fishing fleets, MARCHE, 2018

Sistemi	**Catture (ton.)**	***% catture sul totale***	**Ricavi (mln€)**	***% ricavi sul totale***	**Prezzi (€/kg)**
Draghe Idrauliche	5.928	28,26%	14,70	17,16%	2,48
Piccola pesca	1.792	8,54%	10,89	12,72%	6,08
Rapido	1.379	6,57%	7,89	9,22%	5,72
Strascico	5.939	28,31%	43,52	50,82%	7,33
Volante	5.937	28,30%	8,63	10,08%	1,45
Totale complessivo	**20.976**	**100,00%**	**85,64**	**100,00%**	**4,08**

Source: IREPA

Marche Region in figures (III)

Effort in days of the fishing fleets, MARCHE, 2018

	Numero di giorni	
Sistema	**Totale**	**Medi**
Circuizione	148,00	158,00
Draghe Idrauliche	14.180,00	73,93
Piccola pesca	32.962,21	88,72
Rapido	2.485,00	143,32
Strascico	17.490,00	162,72
Volante	2.066,00	134,88
Totale complessivo	**69.331,21**	**89,11**

Source: IREPA

The regional fisheries system: weaknesses

PROGRESSIVE REDUCTION OF THE INCOMES

- ✓ Increasing of operating costs (labour, fuel, administratives costs)
- ✓ Competition with seafood products from extra EU Countries
- ✓ Enforcement of national and European fisheries restrictions aimed at long term enviromental protection and sustainable exploitation of stocks (short term economic loss for fishers)

Environmental protection measures impact on production costs
E.g. fishing ban has an immediate effect on the enterprises income

Sustainability and development of fisheries sector: calling for a «shared» governance

TOWARDS A COMMON GOVERNANCE IN ADRIATIC

- ✓ Setting-up of Management Plans at local, national and Basin's level, targeted on species and priority areas for stocks
- ✓ Common management strategy towards the sustainable exploitation of the common sole stock in the long term

Stocks and fishing activities are managed at UE level through multi-annual management plans (MAP). MAPs are aimed at restoring overexploited stocks through specific restrictions for fisheries with the final goal of maintaining the resources at higher and stable levels of biomass for future generations to come.
In this way, the responsibility of fishers takes a central role in the management of the resources.

The objectives of transnational projects: experiences in Marche Region and target species

ECOSEA PROJECT
(IPA Adriatic
2007/2014 Programme)

DORY PROJECT
(INTERREG Italy – Croazia
2014/2020 Programme)

Contributing to the protection and conservation of Adriatic ecosystems and promoting the sustaible use of marine resources by means of:

- ✓ Shared actions built upon scientifc evindences
- ✓ Engagement and involvement of fisheries operators
- ✓ Scenarios' simulation to adopt management measures aimed at reducing the negative impact of some fishing activities on the most important stocks

Decision support tools for an ecosystem based approach to fisheries

DISPLACE: an advanced bio-economic model for spatial planning with fisheries (Bastardie, DTU Aqua) able to simulate the biological, social and economic effects of alternative management measures, exploring different management scenarios for a sustainable exploitation of shared stocks, contributing to the implementation of an ecosystem based approach to fisheries and to the processes of Maritime Spatial Planning in Adriatic.

Target Species: common sole and cuttlefish

- High commercial value
- Need of shared management measures to preserve the resource

Target species: common sole

- In Northern Adriatic the common sole is targeted by rapido trawls and set nets (i.e., gillnet and trammel net)
- Rapido trawls are fished all year round, while set nets are used from spring to fall
- The Minimum Conservation Reference Size (MCRS) for common sole (20 cm TL) doesn't match with the size at first sexual maturity (25 cm TL)
- Nursery areas of this species are located along the coastal zone of Marche Region, this explains why catches are dominated by age 0 and age 1 sole

Assam
Agenzia Servizi Settore Agroalimentare delle Marche

Common sole: scenarios tested by DISPLACE

The effects of the following spatial management scenarios have been tested:

1. STATUS QUO
Baseline considering recent fisheries regulation rules in Italy, Croatia and Slovenia.

2. 6-NM TRAWLING BAN ALONG THE ITALIAN COASTS (GSA17)
This scenario excludes Croatia and Slovenia's waters due to existing strict fisheries regulations and complex geomorphological characteristics of eastern Adriatic coast, as well as the Italian Maritime Departments of Monfalcone and Trieste

3. SOLE SANCTUARY - a permanent closure of the "sole sanctuary" area for bottom otter and rapido/rampon trawlers (both Italian and Croatian fleets)

4. SELECTIVITY
Increase the selectivity of gillnet through the adoption of a 72mm stretched mesh size and increase of the common sole Minimum Conservation Reference Size to 25 cm TL (the current one is 20 cm TL)

Common sole: summary of scenarios'results (I)

6 NM TRAWLING BAN

- The implementation of the spatial management measure currently in force (3 nautical miles) with an extension to the 6 nautical miles would have the potential to substantially improve current fisheries exploitation patterns

- Increase of catches for rapido trawls and gillnets

Common sole: summary of scenarios'results (II)

INCREASE THE SELECTIVITY OF GILLNET AND INCREASE OF THE COMMON SOLE MCRS TO 25 CM TL

- increase in the MCRS to 25 cm TL, shifting the target towards the adult portion of sole population. To avoid the impoverishment of the stock, protecting juveniles that tend to aggregate inshore, it would also be useful to make changes in the mesh size of the small-scale fishery
- A 72 mm mesh size (stretched) would help to avoid the retention of most undersized specimens and a portion of juveniles
- Income at mid-term would raise thanks to the increase of common sole size caught by all fleet segments

Scenarios to test under FAIRSEA

Target species: *Solea solea*

Target fleet: Rapido trawl

Tools:

Simulations using bio-economic model – BIOECO (developed by COISPA) to evaluate the impacts of potential management actions at the local basin scale, in the short and medium terms, considering spatial and temporal closures

Scenarios to test:

E.g. Effects of temporal and spatial measures (closure of the 6 or 9 nm for 2 or 4 months) following the Italian summer fishing ban in rapido trawl fleet active in Marche region

THANK YOU FOR YOUR ATTENTION!

Interreg Italy - Croatia FAIRSEA European Regional Development Fund

EUROPEAN UNION

ASSAM Agenzia Servizi Settore Agroalimentare delle Marche

Uriano Meconi, ASSAM

FAIRSEA| MPS| dr.sc. Danijela Mioković

SECOND INTERNATIONAL STAKEHOLDER MEETING
Virtua| 23-24 February 2021

Interreg
Italy - Croatia
FAIRSEA
European Regional Development Fund

EUROPEAN UNION

Activity 5.2. Pilot actions

Description

- The pilot actions regard the scenarios of local management actions in the integrated decision support tool developed
- Pilot actions regard 3 subareas (eastern Veneto; Marche region; Istria County).
- The simulation of management activities implementation for the 3 areas will provide applicative and demonstrative case studies.

Activity 5.2. Pilot actions: identification of conflicts and possible solutions

CROATIA

- The participants attending the stakeholder meetings in Poreč on 24th of July 2019 were interviewed and ideas and suggestions regarding local management actions were noted.
- These suggestions were further discussed with PP on the technical meeting in Split and on skype meeting held on 20th of November, as well as in personal communication within PP.

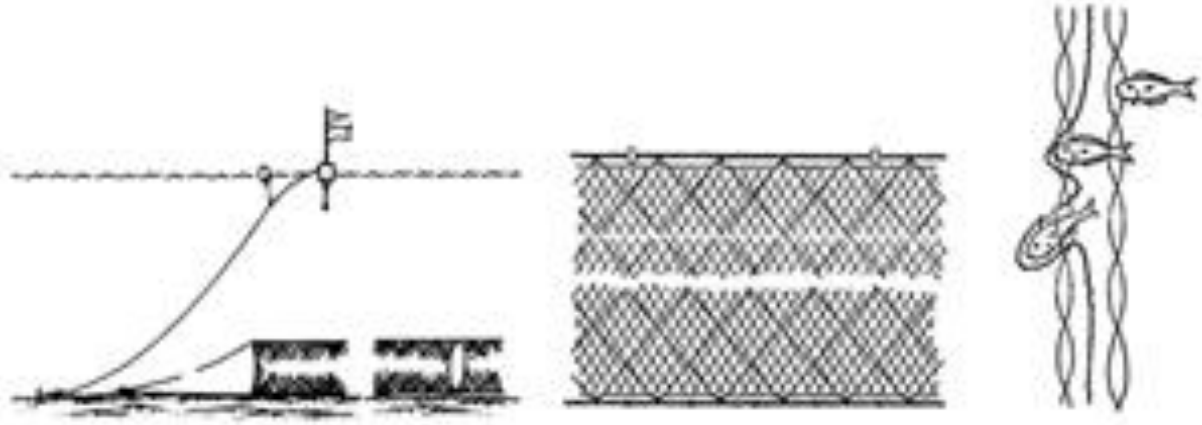
Activity 5.2. Pilot actions: identification of conflicts and possible solutions

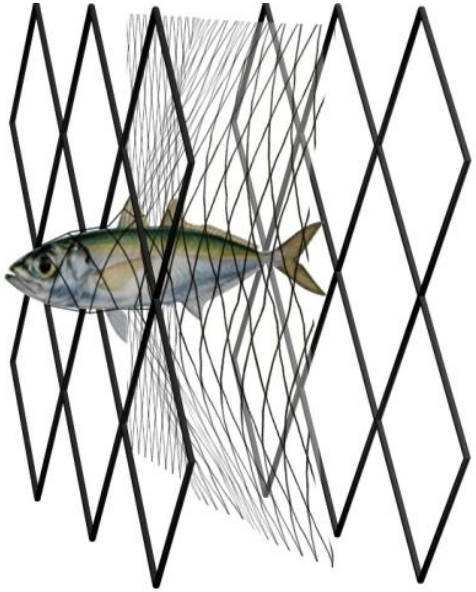
CROATIA

- The management action chosen for pilot action in Istria County is a proposal for the increase in mesh size of trammel nets for catching sole (*Solea sp*.) and the resulting effects on stock and on marketing price, as well as economic consequences for fishermen.
- The testing of these nets has already started with the project ARIEL – this was accepted as an innovation idea. Selectivity data was gathered by scientists from IOF.

Activity 5.2. Pilot actions: identification of conflicts and possible solutions

- Trammel nets for catching sole are made from 3 layers of netting with a slack small mesh inner netting between two layers of large mesh netting within which fish will entangle.
- The minimum mesh size for the inner net is 40mm, and the proposal is to increase the mesh size to 42mm

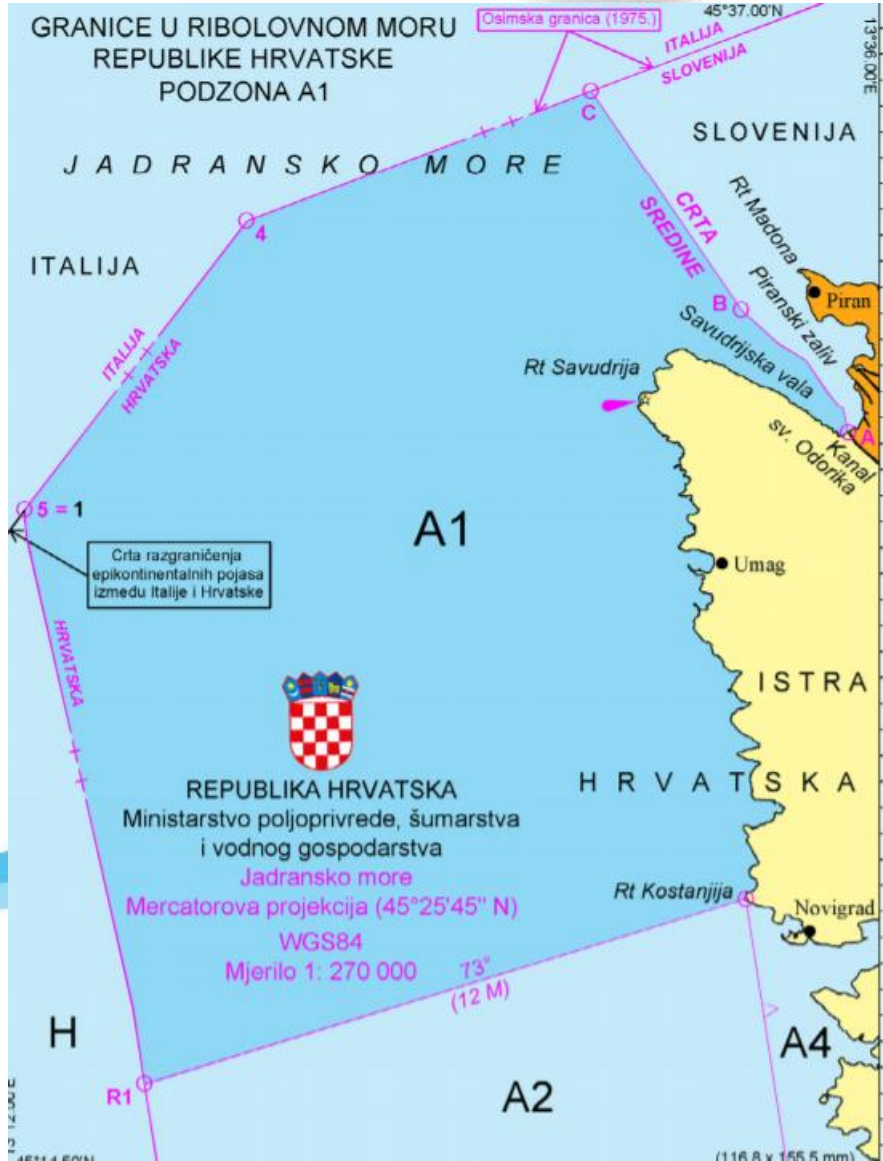




Activity 5.2. Pilot actions: identification of conflicts and possible solutions

THE DATA

- The data used for pilot actions was collected by IOF
- The data was collected for the INTERREG project Ariel (ARIEL overall objective is to promote technological and non-technological solutions for innovation up take of small-scale fishery and aquaculture in Adriatic-Ionian basin)
- during the period from June 2018 to December 2019, in fishing area A1 (around Salvore and Umago)
- The catch and discard by 15 fishermen was analyzed in detail, two mash sizes were used



The Multiannual Management Plan in the Adriatic Sea

Recommendation GFCM/43/2019/5 on a multiannual management plan for sustainable demersal fisheries in the Adriatic Sea (geographical subareas 17 and 18)

Multiannual Management Plan

PART III
Technical measures
Minimum conservation reference size

MCRS

c) for common sole, at 20 cm TL

Focus in GSA17
target species: common sole, *Solea solea*
fleet: trammel netters in Istra county

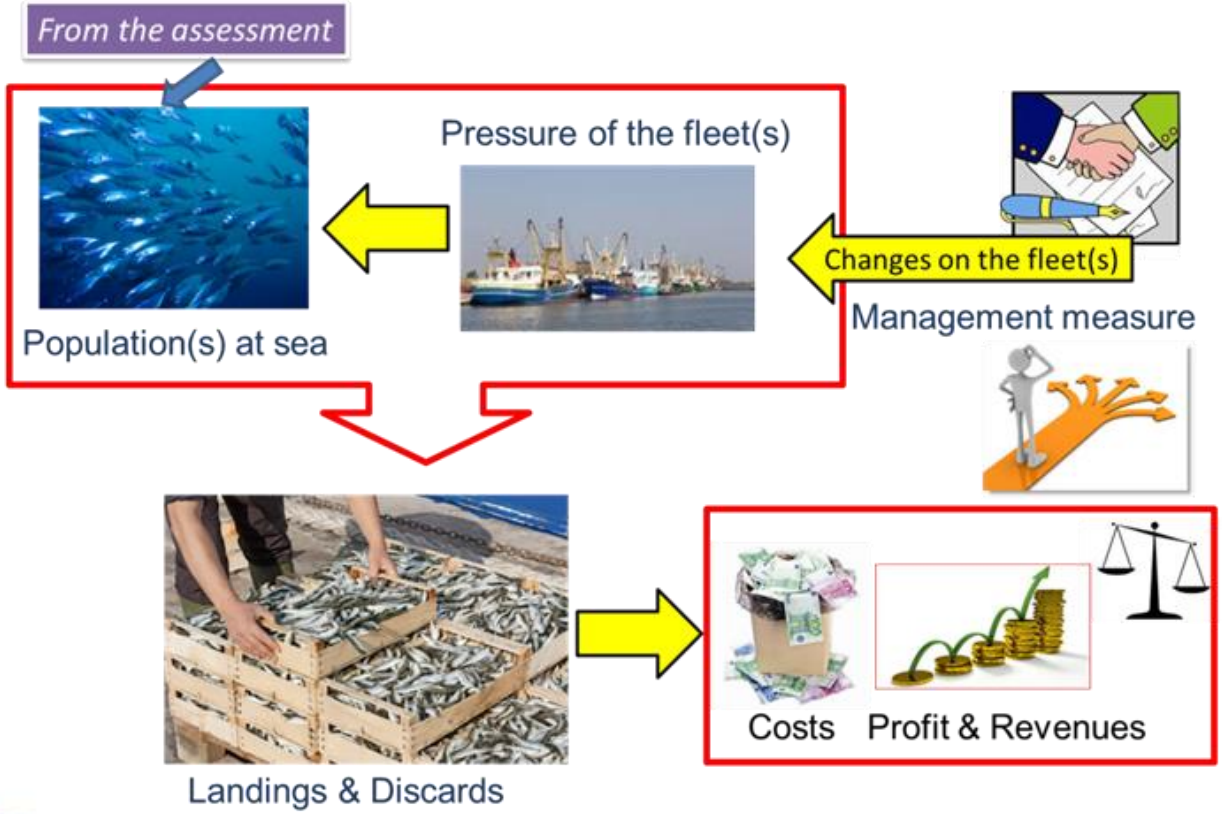
Interreg Italy - Croatia FAIRSEA
European Regional Development Fund
EUROPEAN UNION

Space for Logos

Simulations using bioeconomic modelling – BIOECO

Improving the exploitation pattern – the technical approach

impacts of potential management actions at the local and basin scale, in the short and medium terms by considering technical interactions.



- *investigating the **consequences** of scenarios, to evaluate how **changes/shifts in fishery-driven effects** (e.g. fishing mortality, gear selectivity) influence **stock and fisheries productivity**.*

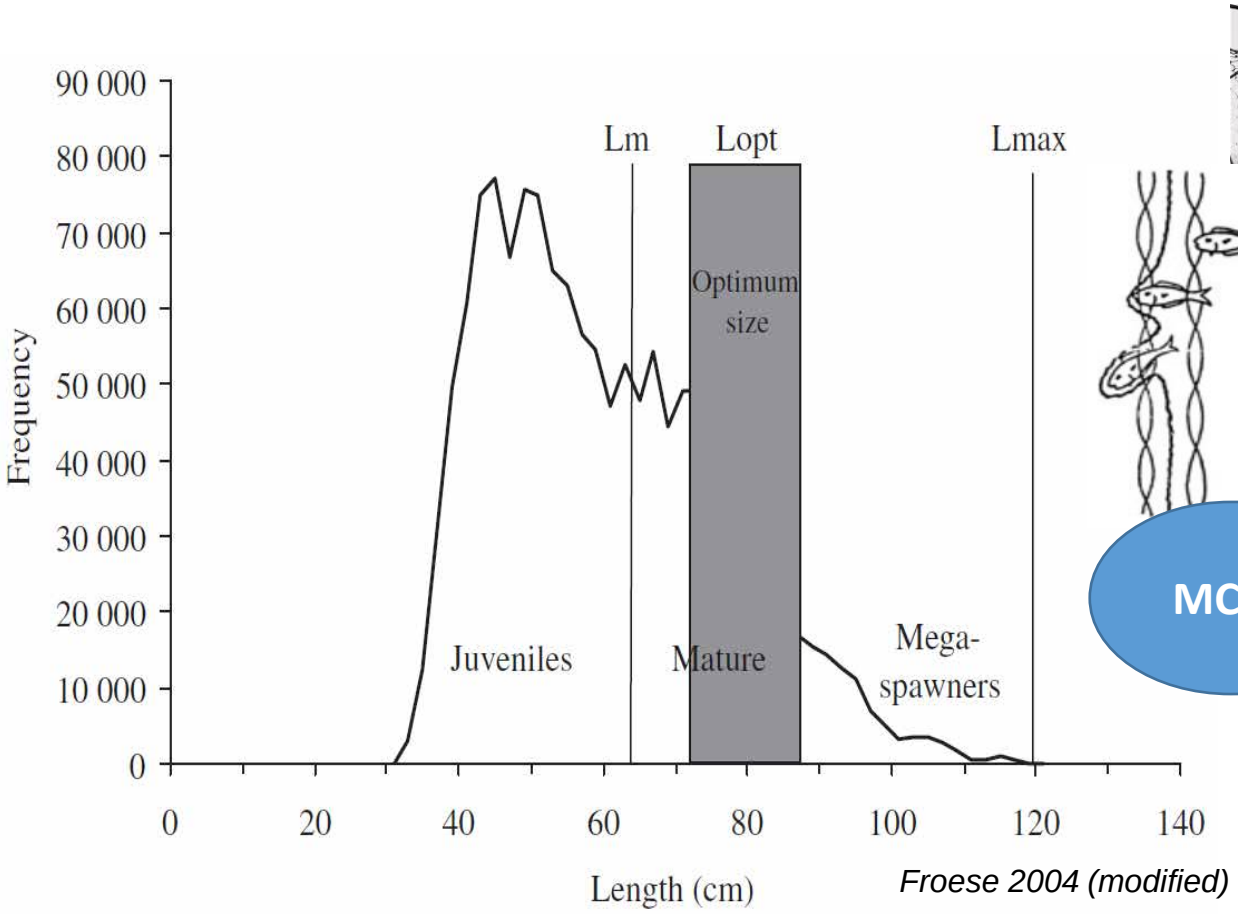
Interreg Italy - Croatia FAIRSEA European Regional Development Fund

EUROPEAN UNION

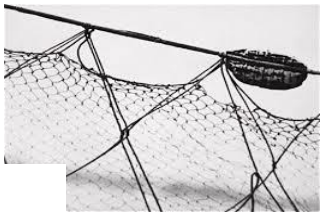
Space for Logos

Simulations using bioeconomic modelling – BIOECO

Improving the exploitation pattern – the **technical** approach



Froese 2004 (modified)



MCRS

- *using **more selective gears**, ensuring control and compliance;*
- *towards defining **best practices** for developing **guidelines** in the region as steps of a **bottom up approach***

Space for Logos

Thank you!

Ministry of agriculture
Croatia
(ex CAFAS – Croatian agricultural and forestry advisory service)
Dr.sc. Danijela Mioković

Mate Vlašića 244, 52440 Poreč

Danijela.Miokovic@mps.hr

+385 91 500 9991

www.italy-croatia.eu/Fairsea

MINISTARSTVO POLJOPRIVREDE

Interreg Italy - Croatia FAIRSEA

EUROPEAN UNION

Decision Support Tool applied to the management of the Veneto professional and recreational fisheries

Project FAIRSEA | VeGAL | Alberto Caccin

2nd Stakeholder meeting | February 25th 2021

European Regional Development Fund

BACKGROUND

The overall objective of FAIRSEA is to enhance the conditions for implementing innovative approaches in the sector of sustainable fisheries management in the Adriatic Sea considered as the FAO geographical sub-areas (GSA) 17, 18 and 19. This is done through the development of a shared conceptual and operational framework for an Ecosystem approach to fisheries (EAF). It will be achieved through the implementation of a spatially explicit and territorially integrated tool that considers water mass circulation, physical-chemical properties, plankton productivity, dynamics of resources including their interactions, fisheries displacement and bio-economic drivers. The technical integration is adapted to address stakeholders' and policy makers' issues and is used for increasing awareness, for understanding EAF, for increasing technical skills and capacities in the region also through demonstrative applications. The platform result in a high technological and innovative tool for EAF to be useful for policy makers, institutions and organizations.

WP5 – Act. 5.2

Pilot actions: *identification of conflicts and possible solutions*

The Pilot Action implemented by VeGAL aims at verifying that the platform developed by the project effectively contributes to the identification of conflicts (inter- and intra-sectoral) and possible solutions and therefore represents a valid decision support system for sustainable development.

This is achieved by test-running the platform using data collected in the Venetian maritime compartment, specifically:

- Industrial fishery landings time series for the main target species
- Small-scale fishery landings time series
- Clam dredging time series concerning
    - Landings
    - Fleet composition
- Mapping of the main spatial management measures affecting fisheries in the study area
- Mapping of active and proposed resources management plans

WP5 – Act. 5.2

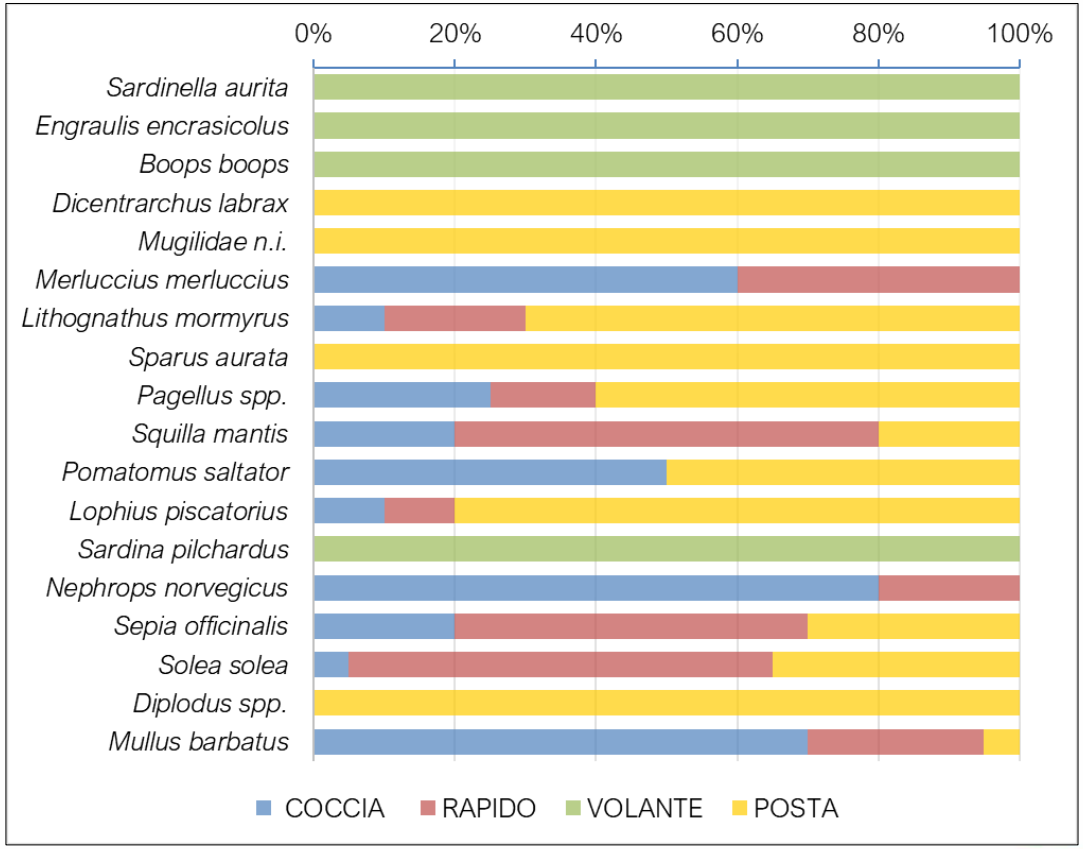
Data collected – industrial and artisanal fishery landings

Market	Periodicity	Source
Pila	Yearly since 2001 Monthly since 2005	1
Chioggia	Yearly and Monthly since 1945	1, 2
Venice	Yearly since 1946 Monthly since 2006	1, 2
Caorle	Yearly since 2003 Monthly since 2005	1

1 - Osservatorio Socio-Economico della Pesca e dell'Acquacoltura

2 – Università Ca'Foscari Venezia – DAIS

Both based on Market reports



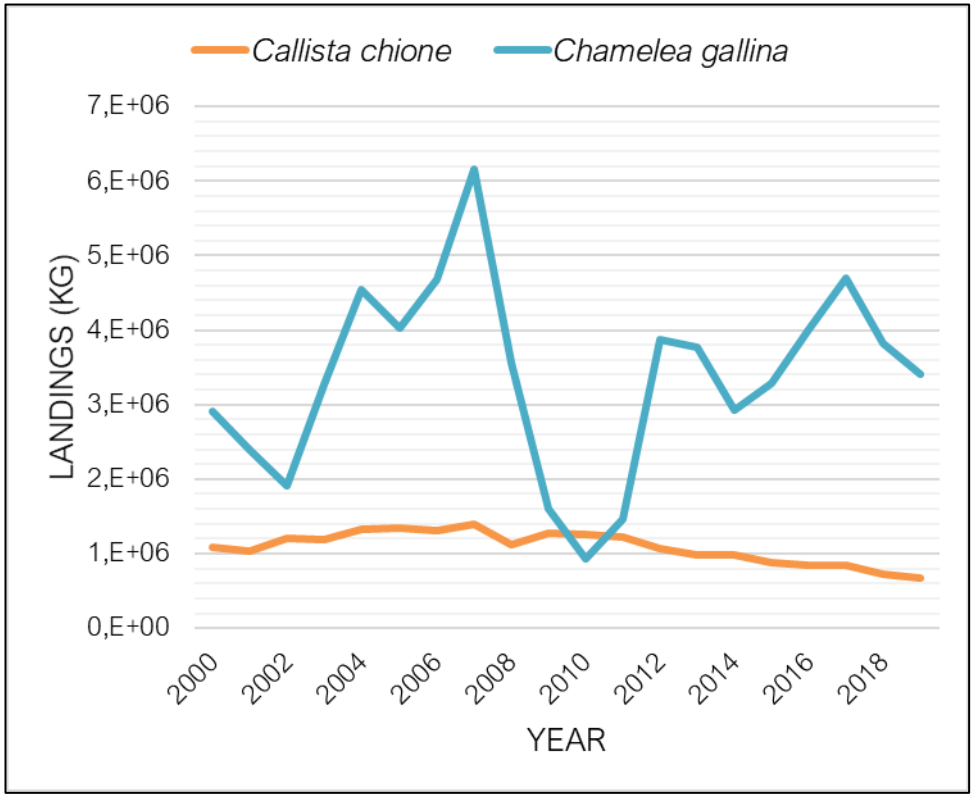
Interreg Italy - Croatia FAIRSEA European Regional Development Fund

EUROPEAN UNION

VENEZIA ORIENTALE VeGAL

WP5 – Act. 5.2

Data collected – Clam dredging



Average days at sea

	C. Chione CH	*C. Chione* VE	*C. gallina* CH	*C. Gallina* VE
2016	57	62	105	105
2017	72	62	122	104
2018	66	56	100	90

N. Boats employed

	C. Chione CH	*C. Chione* VE	*C. gallina* CH	*C. Gallina* VE
2016 - 2019	19	23	58	63

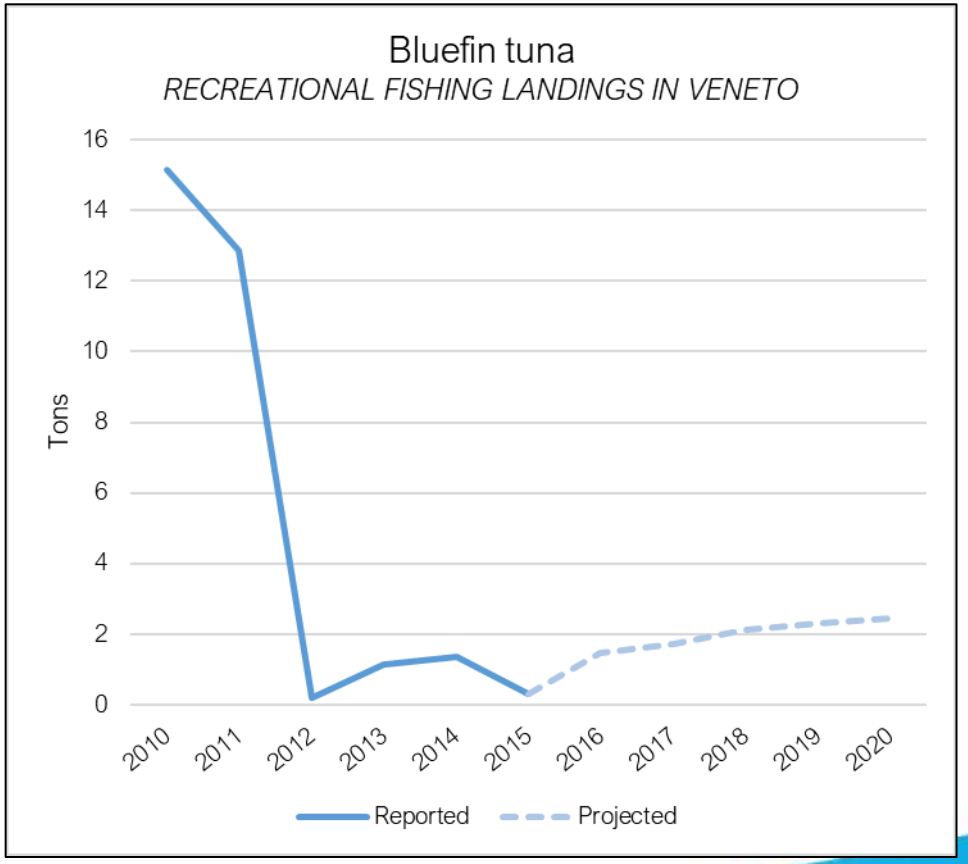
Source: Osservatorio Socio-Economico della Pesca e dell'Acquacoltura – based on CoGeVo data

WP5 – Act. 5.2

Data collected – Recreational fishing

Official data available for Bluefin Tuna (*Thunnus thynnus*) only (UNIMAR 2016 - rapporto finale III.D.1 Pesca ricreativa del tonno rosso del *Programma Nazionale Italiano per la raccolta dei dati primari di tipo biologico tecnico ambientale e socio economico nel settore della pesca*).

Actual data available for 2010-2015. Starting from 2016, landings are projected based on annual quota.



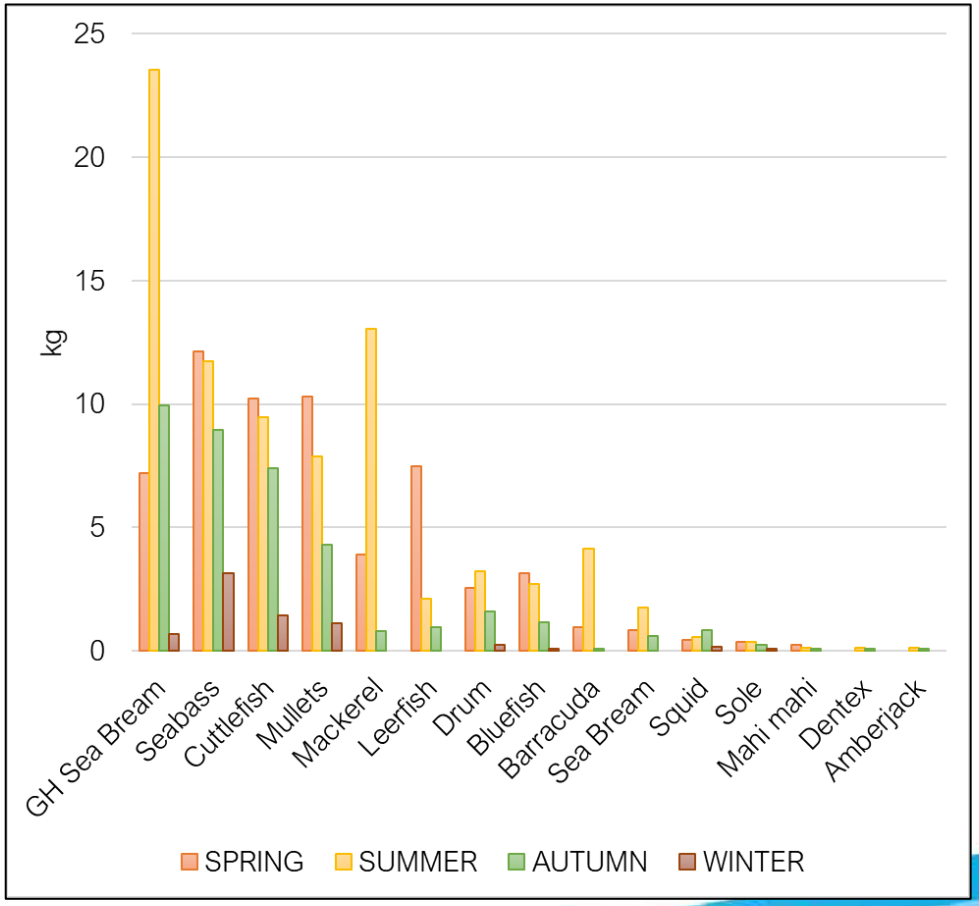
WP5 – Act. 5.2

Data collected – Recreational fishing

For all other target species, data was collected through a questionnaire distributed via social media groups, to anglers operating on the Veneto coast. It allowed to infer:

- CPUE (kg/angler/trip)
- Average number of fishing trips, per angler, per season
- Landing trend for the main target species in the last 20 years

The number of active anglers in Veneto was retrieved from the Ministry database of angling permits.

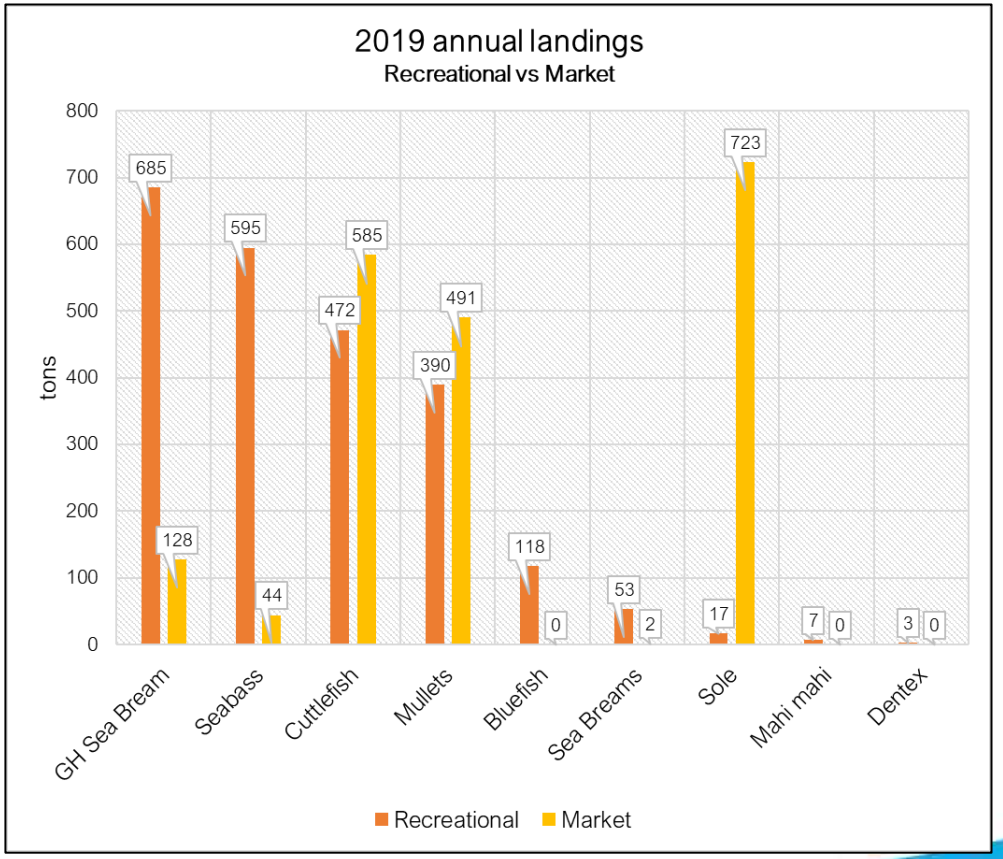


WP5 – Act. 5.2

Data collected – Recreational fishing

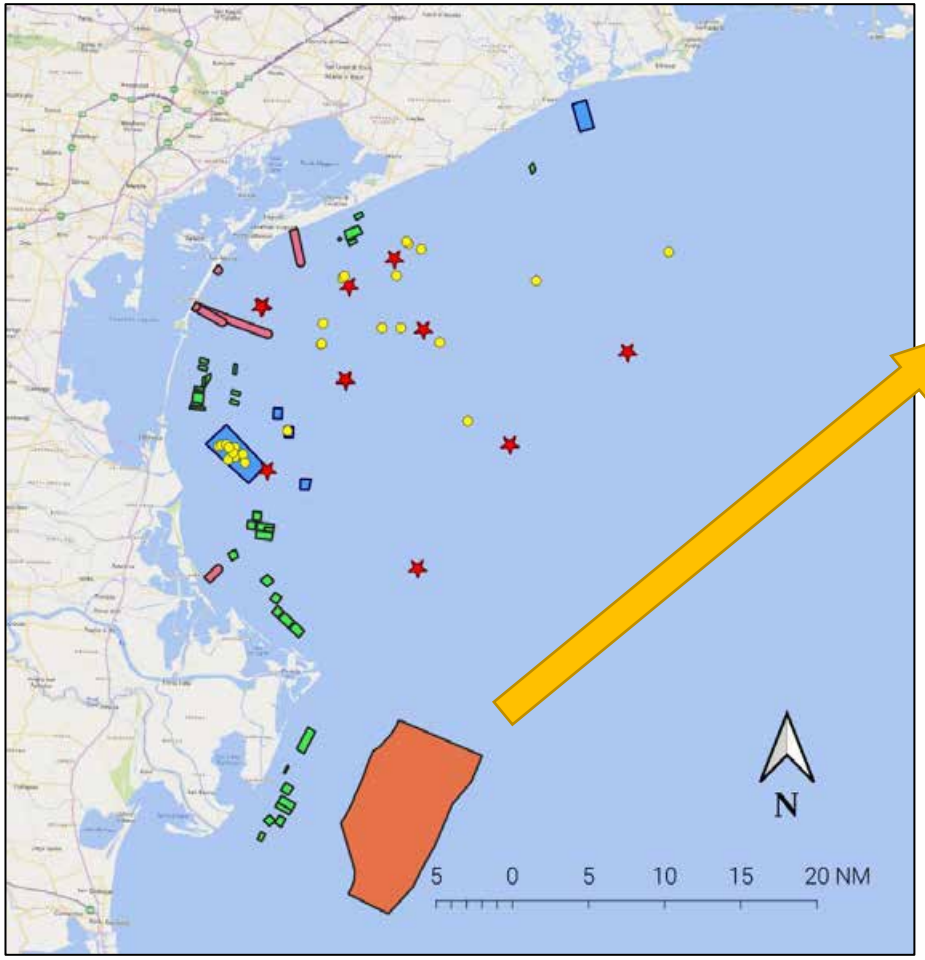
Considering estimated CPUE, the average number of fishing trips, and the number of registered anglers, it was possible to guess the annual landings of recreational fishing in Veneto.

Results show that, particularly **for some species, recreational landings largely exceed those of commercial fisheries**, even when using very conservative estimates.



WP5 – Act. 5.2

Data collected – Spatial limitations



Example: CIS IT 3270025 for the protection of *T. truncatus* and *C. caretta*.

Obligations:

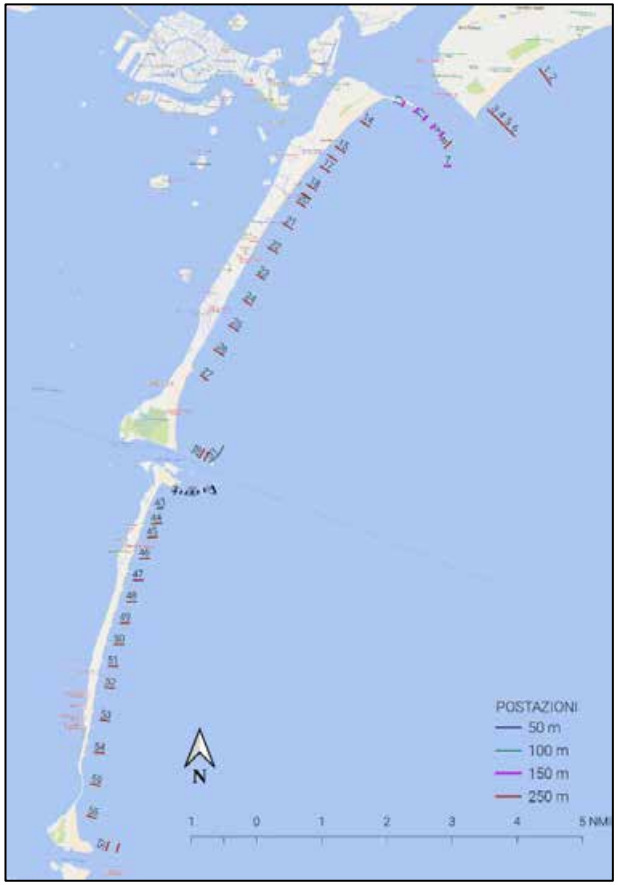
- Avoid voluntarily approaching the species in question, unless they are the same ones approaching the boats.
- Communicate the discovery of dead and / or stranded specimens to the territorially competent Port Authorities.
- Maintain a straight course when trawl and trawl are in operation.
- Tag gillnets and other passive gear.

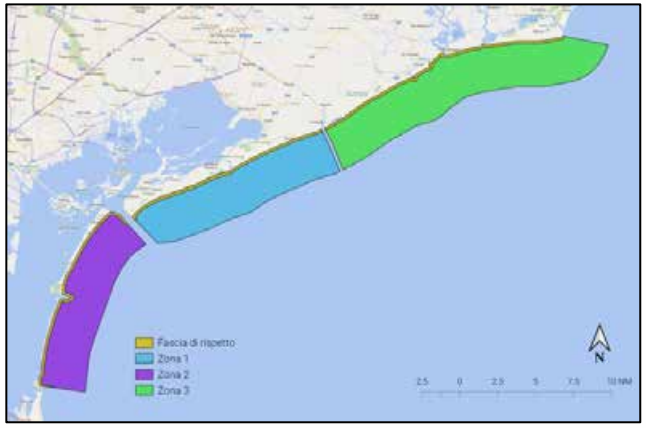
Prohibitions:

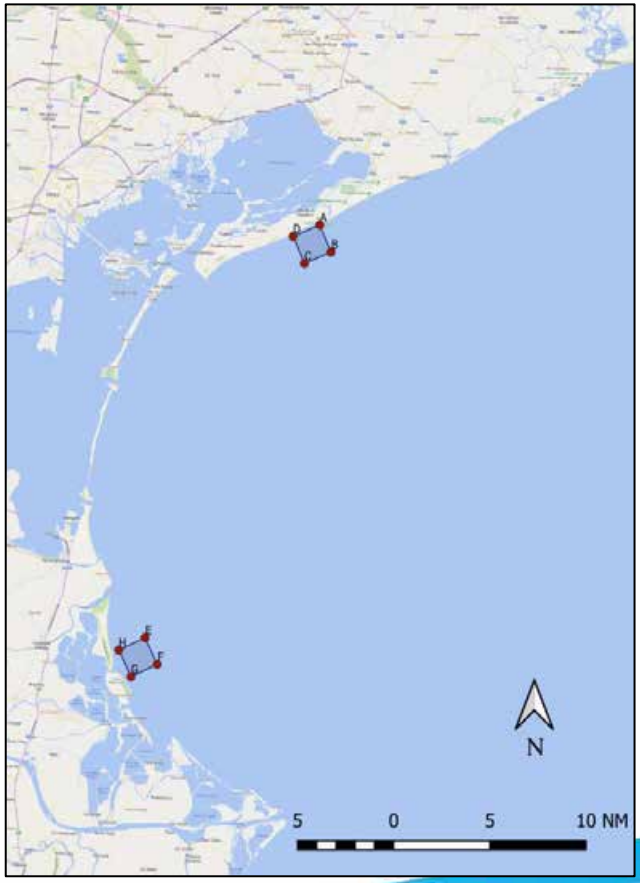
- Ban on the use of longlines and lines with single and multi-hook hooks.
- Prohibition of close interaction with animals

WP5 – Act. 5.2

Data collected – *Management plans*







CONTACTS

Alberto Caccin

Alberto.caccin@gmail.com

www.italy-croatia.eu/fairsea

First outcomes from the participatory process to shape objectives and management scenarios

FAIRSEA – COISPA
Giuseppe Lembo, Isabella Bitetto, Maria Teresa Spedicato

Second International Stakeholder Meeting of FAIRSEA project
Kudo platform - 23 and 24 February 2021

European Regional Development Fund

Outcomes from the First international stakeholder meeting

Priorities and sensitive issues raised by stakeholders have been discussed and their feedback on the **fishery sustainability** has been collected

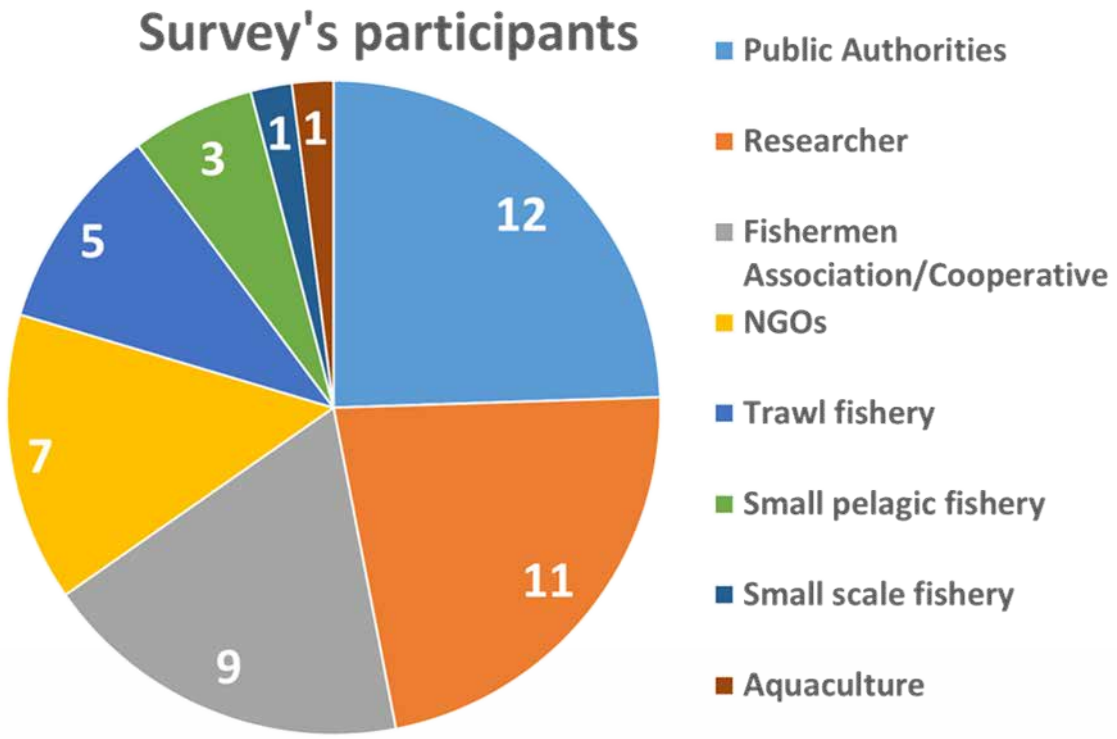
- the perception of the ***objectives*** supporting the sustainable ***management of the fishery***,
- the perception of the ***indicators*** applied to achieve the previous objectives,
- the ***scenarios*** considered more suitable to support the sustainable management of the fishery

First international stakeholder meeting

Feedback loop with **stakeholders**

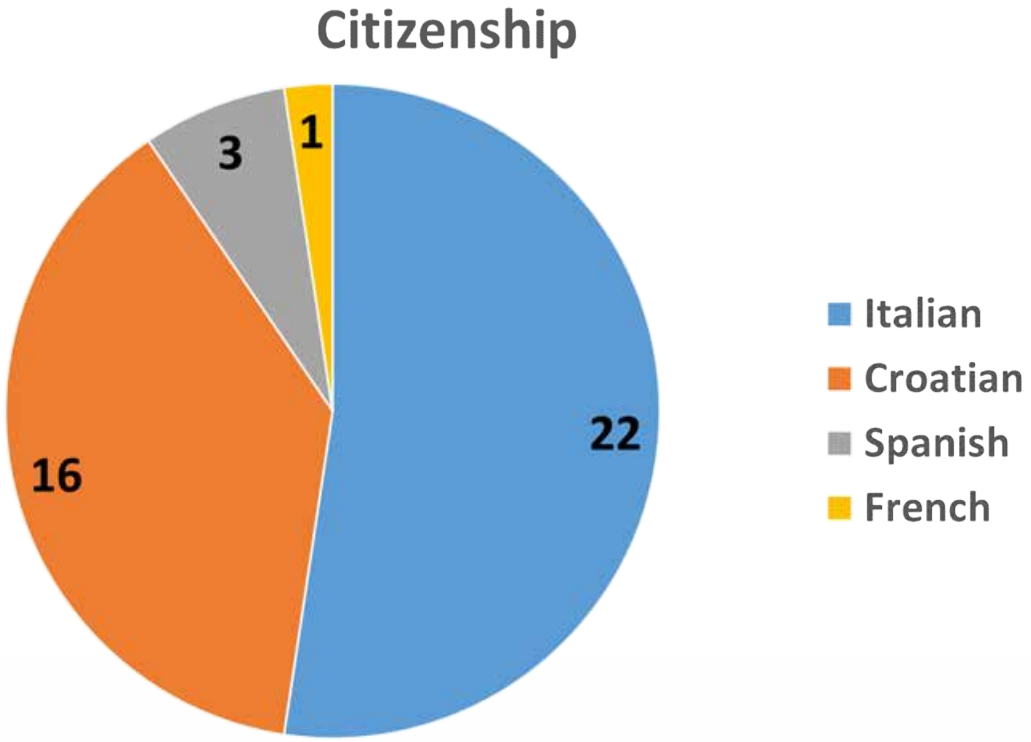
who become actors of the **strategies**

and **scenarios' simulations** into the integrated platform



First international stakeholder meeting

Italian and Croatian the most represented countries

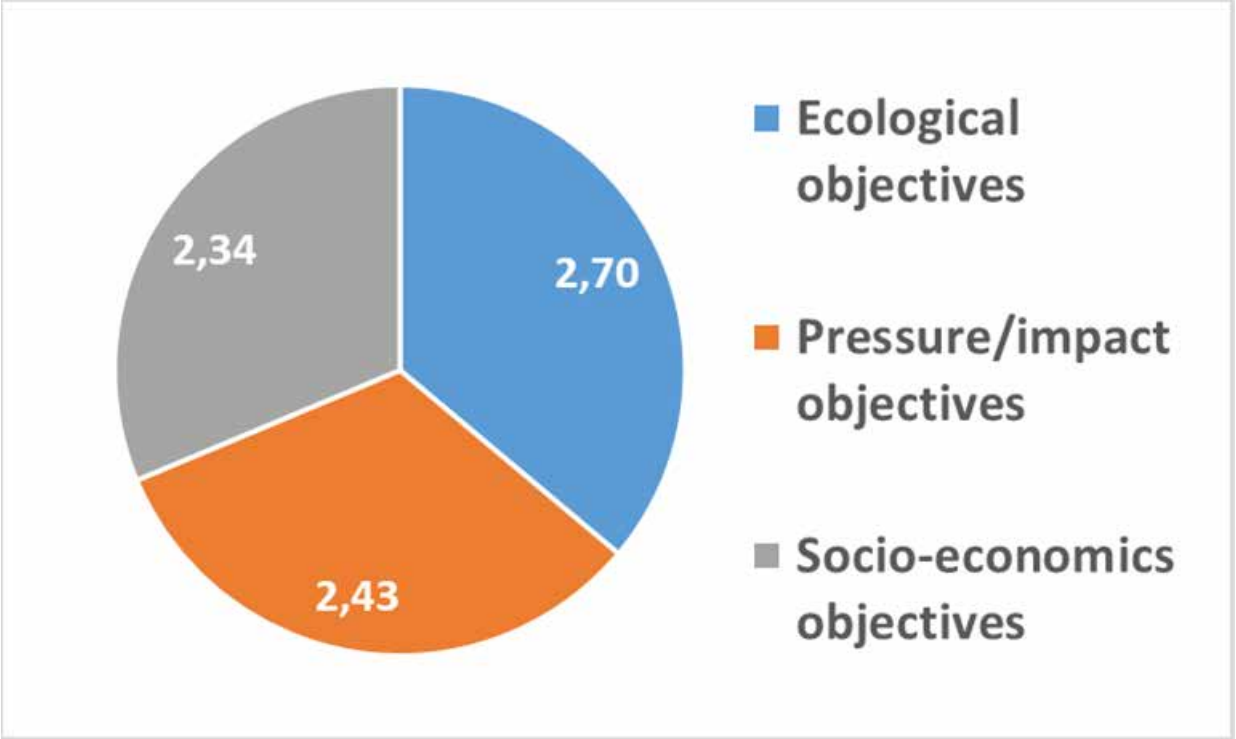


Which of the following objectives you consider the most important in order to support the sustainable management of the fishery?

Less important = 1

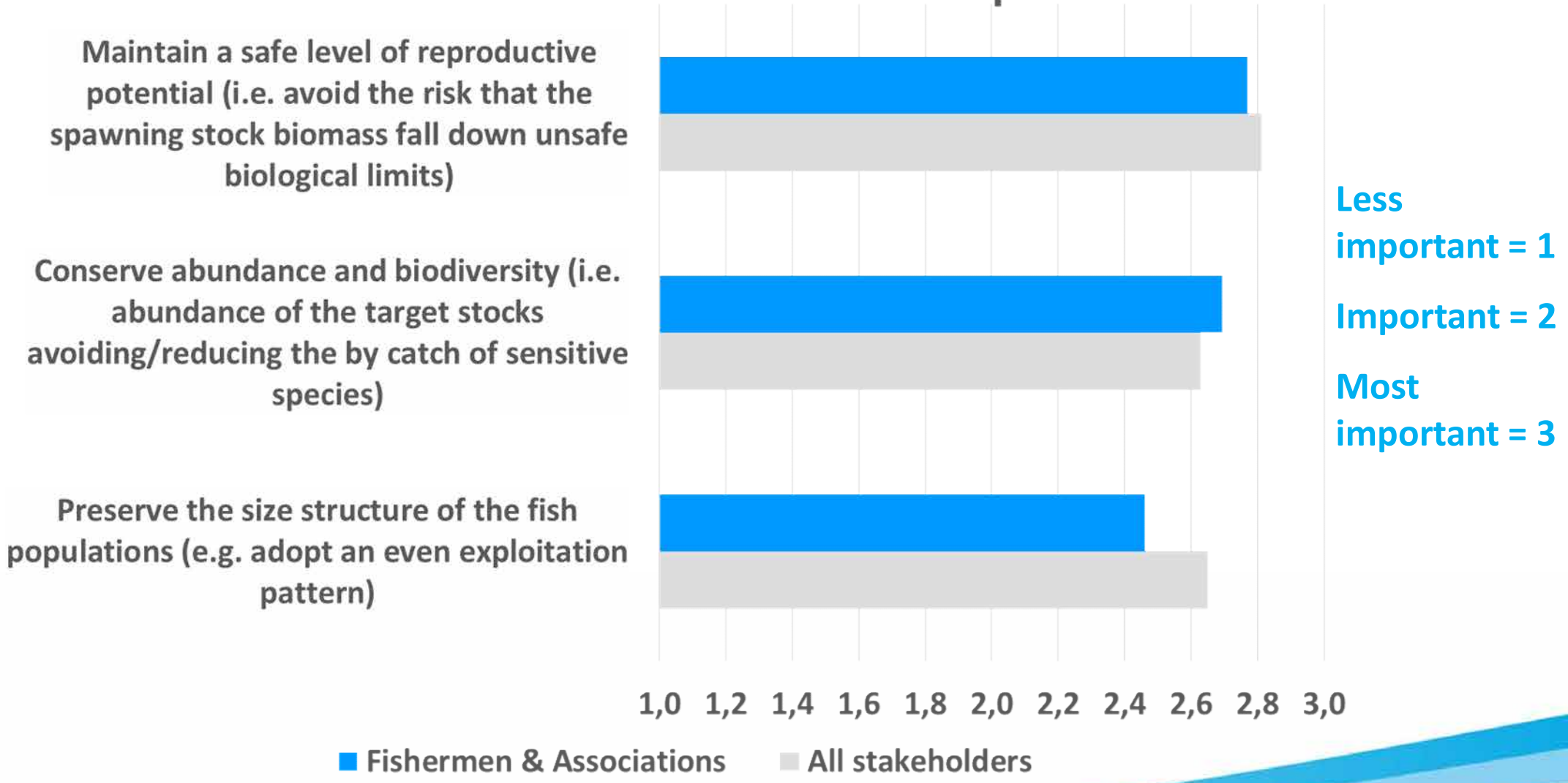
Important = 2

Most important = 3



Which are the most suitable ecological objectives to support a sustainable management of the fishery?

ECOLOGICAL OBJECTIVES - Level of importance

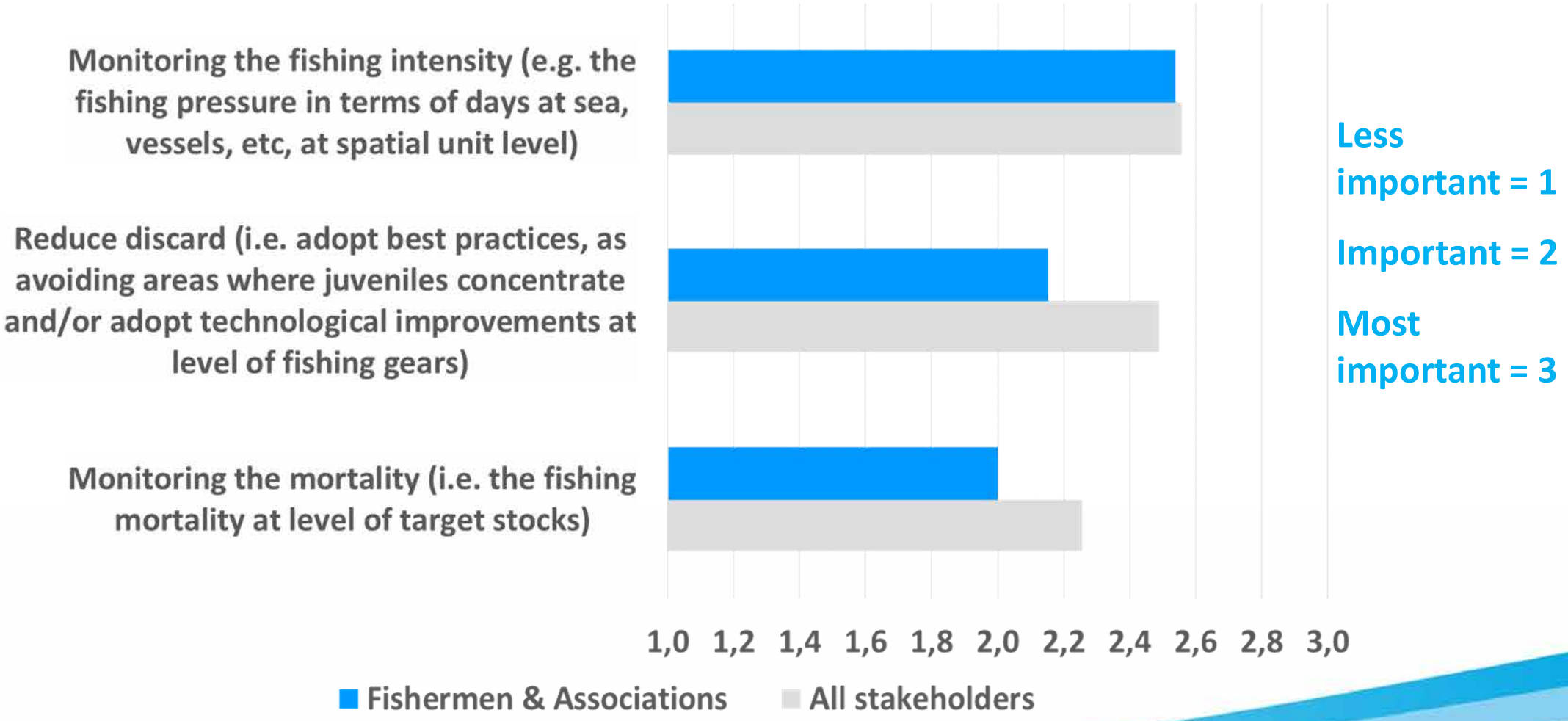


Less important = 1

Important = 2

Most important = 3

PRESSURE/IMPACT OBJECTIVES
Level of importance

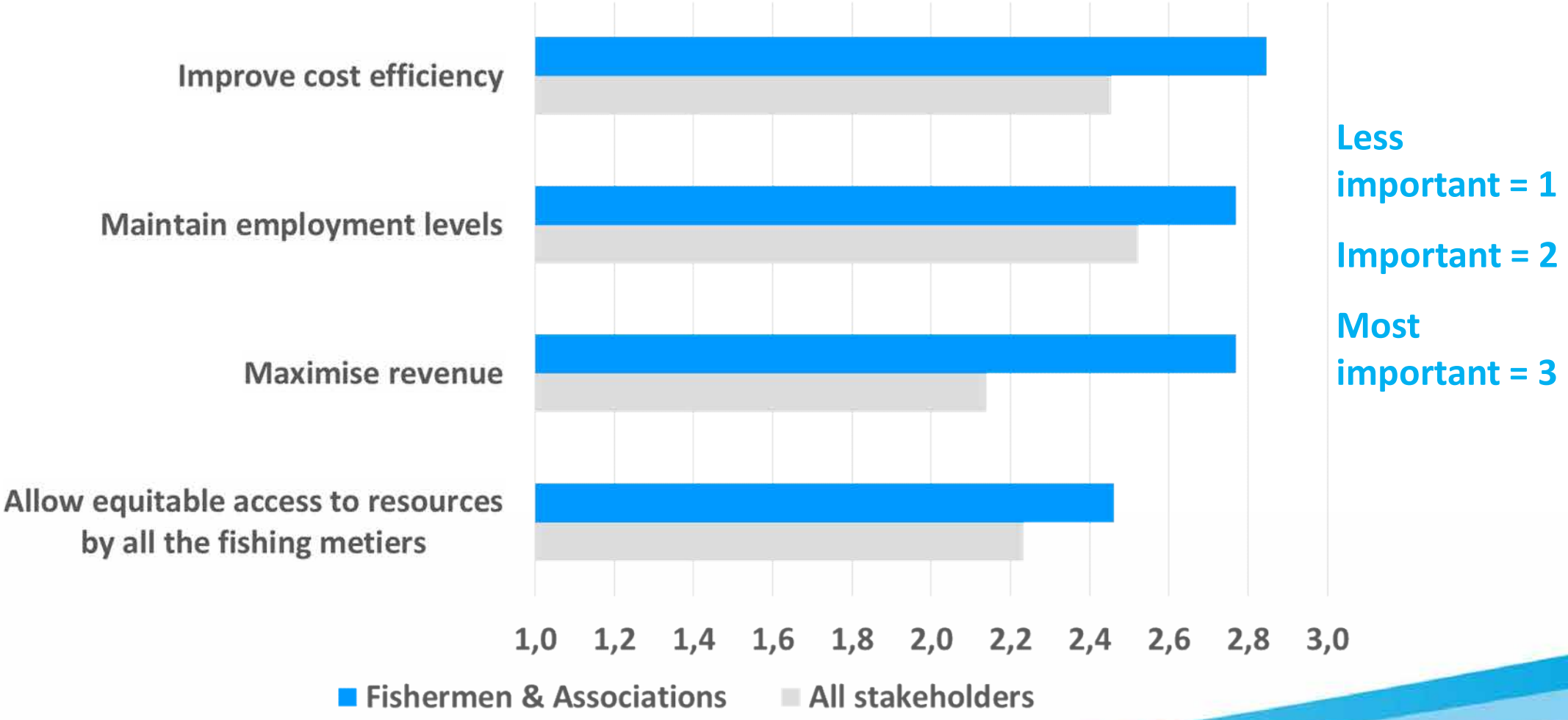


Less important = 1

Important = 2

Most important = 3

SOCIO-ECONOMIC OBJECTIVES
Level of importance



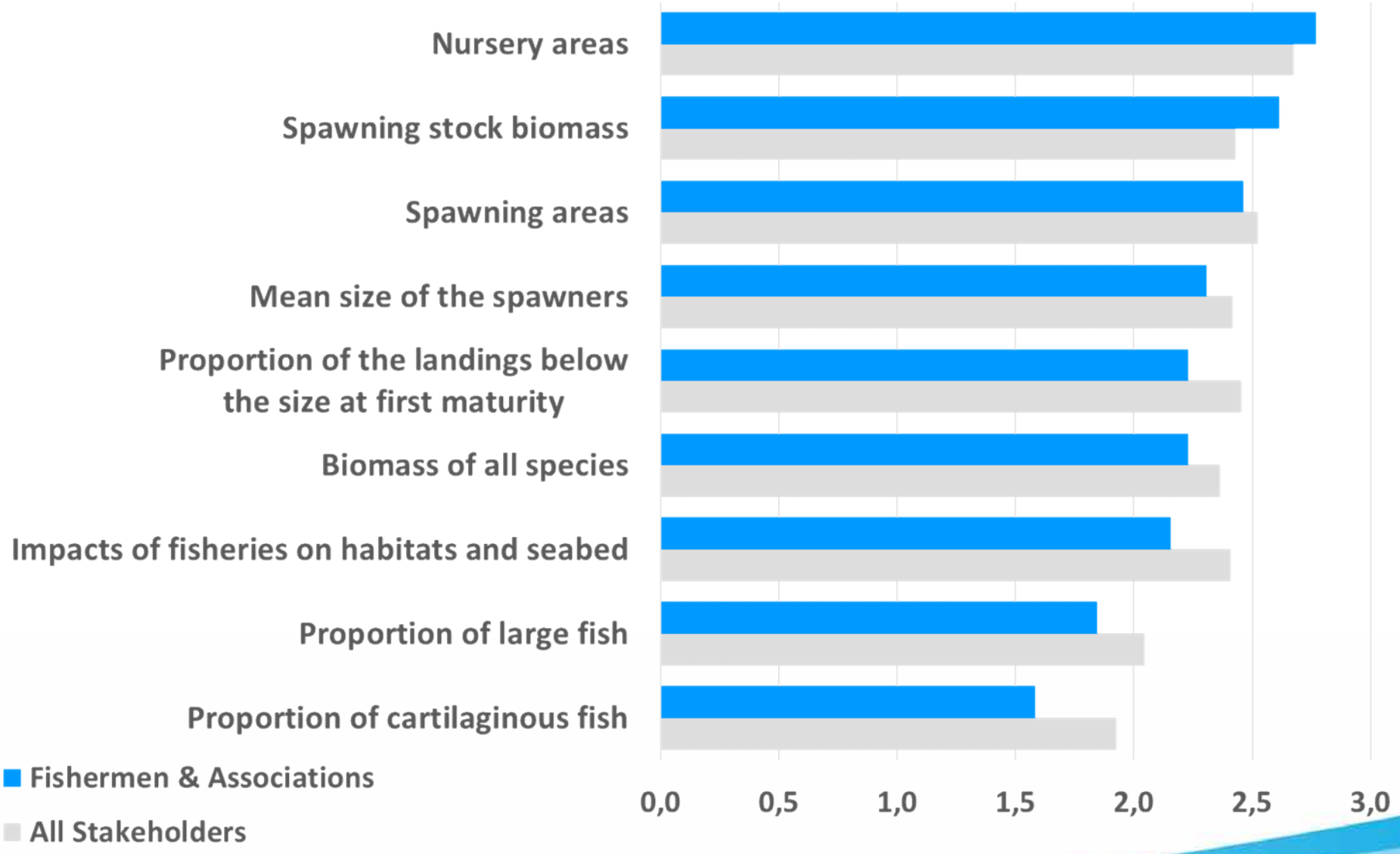
Less important = 1

Important = 2

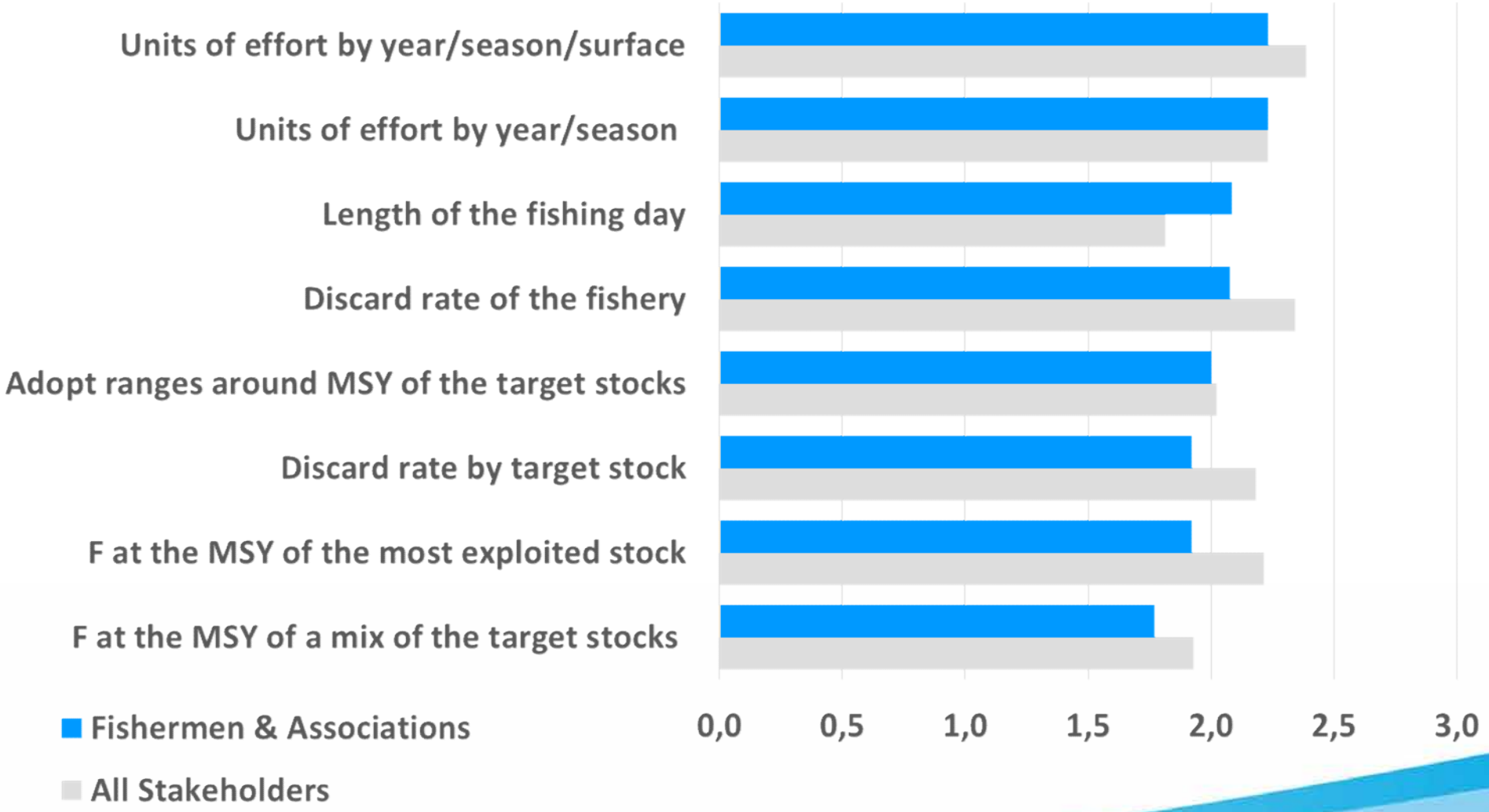
Most important = 3

Which are the most suitable indicators to be monitored in order to achieve the defined objectives?

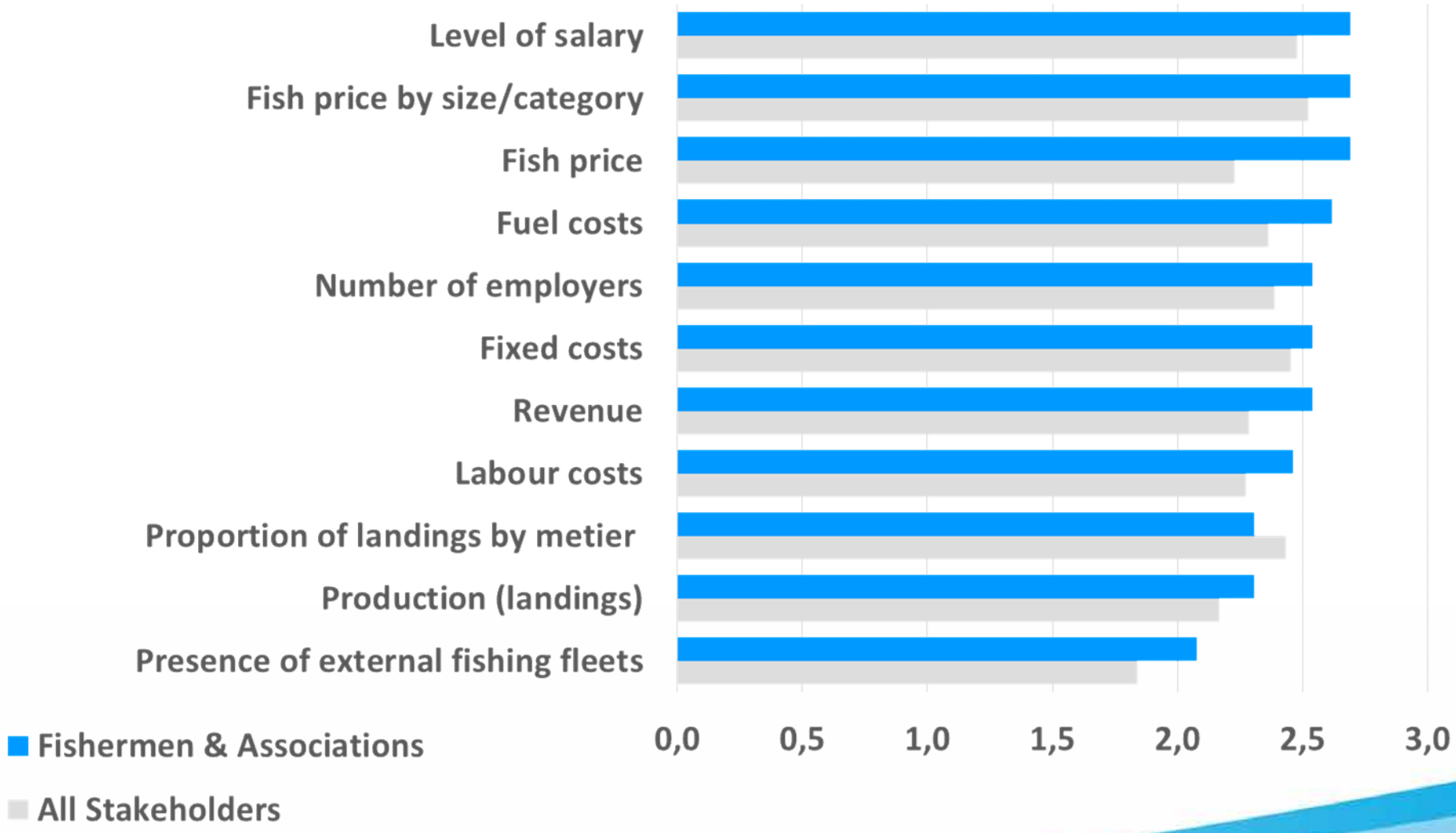
ECOLOGICAL INDICATORS - Level of importance



PRESSURE/IMPACT INDICATORS
Level of importance

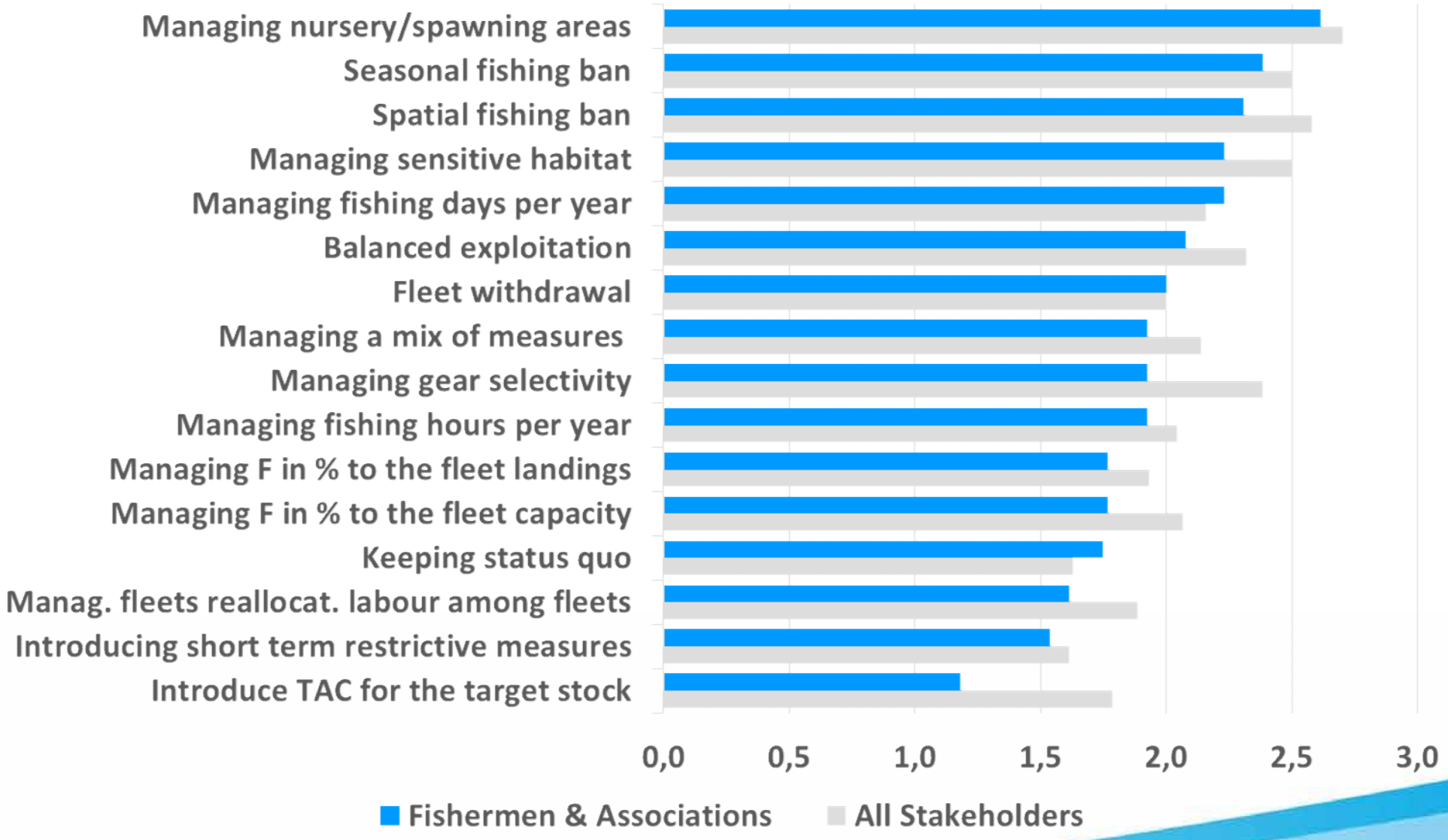


SOCIO-ECONOMIC INDICATORS Level of importance



Which are the most useful scenarios to support the sustainable management of the fishery?

Management Scenarios: Level of importance



FINAL REMARKS

- **Non significant differences between the opinions of the different categories of stakeholders.**
- **Socio-economic objectives are taken into greater consideration by fishermen and their associations.**
- **The concept of MSY is not properly taken and, in any case, generates mistrust by the group *Fishermen & Associations*.**
- **Fishing mortality indicators also generate distrust or are considered less useful.**
- **The most reliable management scenarios are those based on spatial (*nursery* and *sensitive habitat*) or temporal fishing ban, or fishing days per year.**
- **The least appreciated management scenario is the one based on TACs.**

Thanks for the attention

(lembo@coispa.it)

The FAIRSEA Pilot Actions in the Adriatic Sea
Preliminary results of Pilot Actions case studies

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

SECOND INTERNATIONAL STAKEHOLDER MEETING
Virtua| 23-24 February 2021

European Regional Development Fund

Pilot Actions – First results from scenarios

Inputs from MPS and IOF

MINISTARSTVO POLJOPRIVREDE

INSTITUTE OF OCEANOGRAPHY AND FISHERIES SPLIT

Inputs from Assam and CNR-Irbim

Assam – Agenzia Servizi Settore Agroalimentare delle Marche

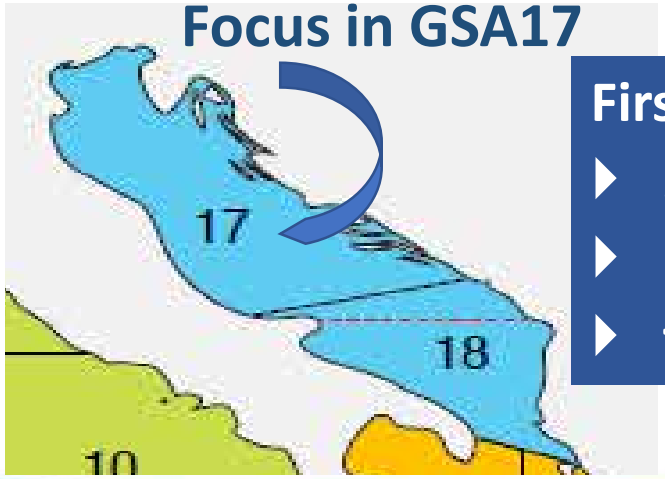
IRBIM – Istituto per le Risorse Biologiche e le Biotecnologie Marine

Fisheries

target species: common sole, *Solea solea*

- **trammel netters in Istria county**
- **beam trawlers in Marche region**

Focus in GSA17



First results:

- some scenarios tested;
- new ones at the 2° stage;
- **the need of inputs for the further steps**

BIOECO – Simulations and Prediction of management scenarios

BIOECO Tools

BEMTOOL bioeconomic model

GUI

Stocks dynamic

- Stock1
  - growth, maturity, natural mortality, recruitment
- Stock2
  - ...

Management

- Effort control rules (fishing days, vessels);
- change in gear characteristics and exploitation pattern;
- TAC (external or set according the annual SSB in respect to the reference points);
- Landing obligation

Fleet dynamic

- Fleet1
  - **harvest**: selectivity, fishing mortality, landing, discard;
  - **economic**: revenues, costs, profit, etc...
- Fleet2
  - ....

+ Fleet Behaviour component

Simulations using bioeconomic modelling – BIOECO

Improving the exploitation pattern

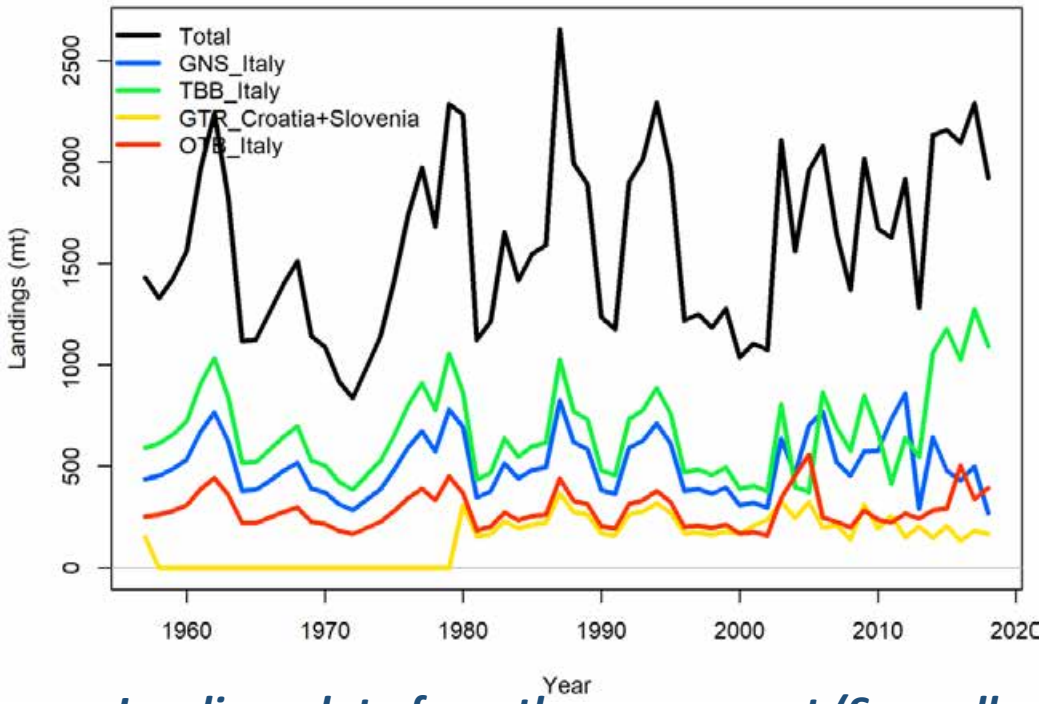
by considering technical interactions and/or spatio-temporal closures.

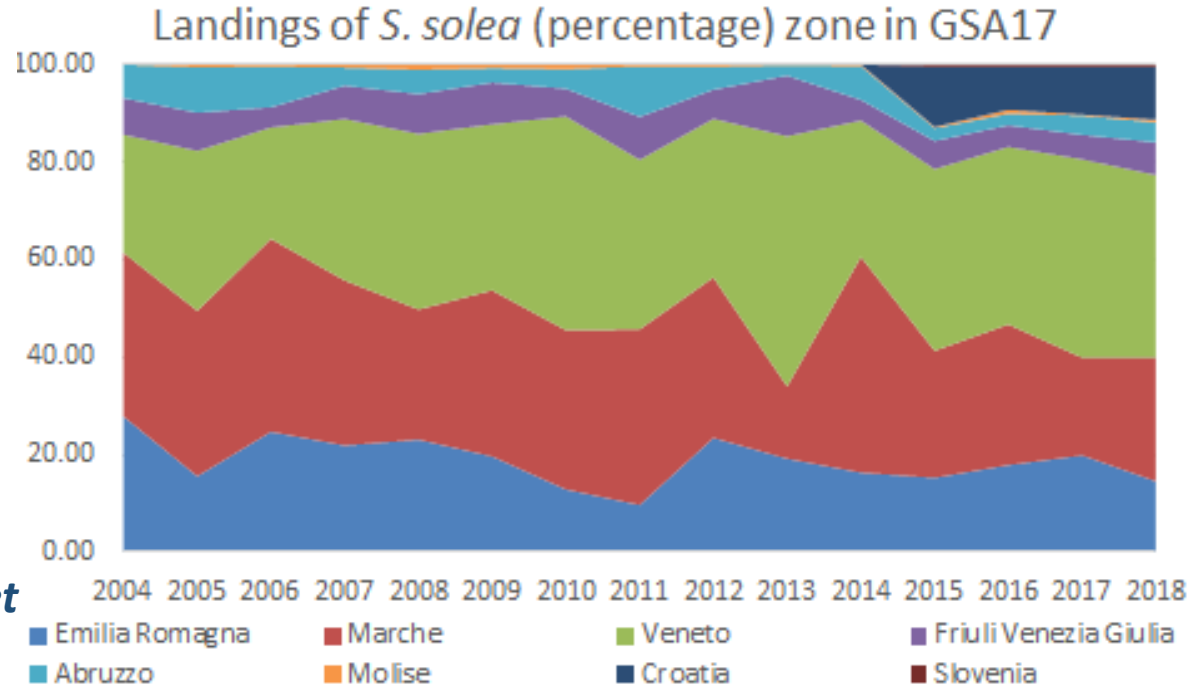
*investigating the **consequences** of scenarios, to evaluate how **changes/shifts in fishery-driven effects** (e.g. fishing mortality, gear/fleet selectivity) influence **stock and fisheries productivity**.*

***23 interacting fleets, given by the combination of region/country and fishing technique**, were included in the bioeconomic model.*

Simulations using bioeconomic modelling – BIOECO

Landings by fishing techniques and countries/regions

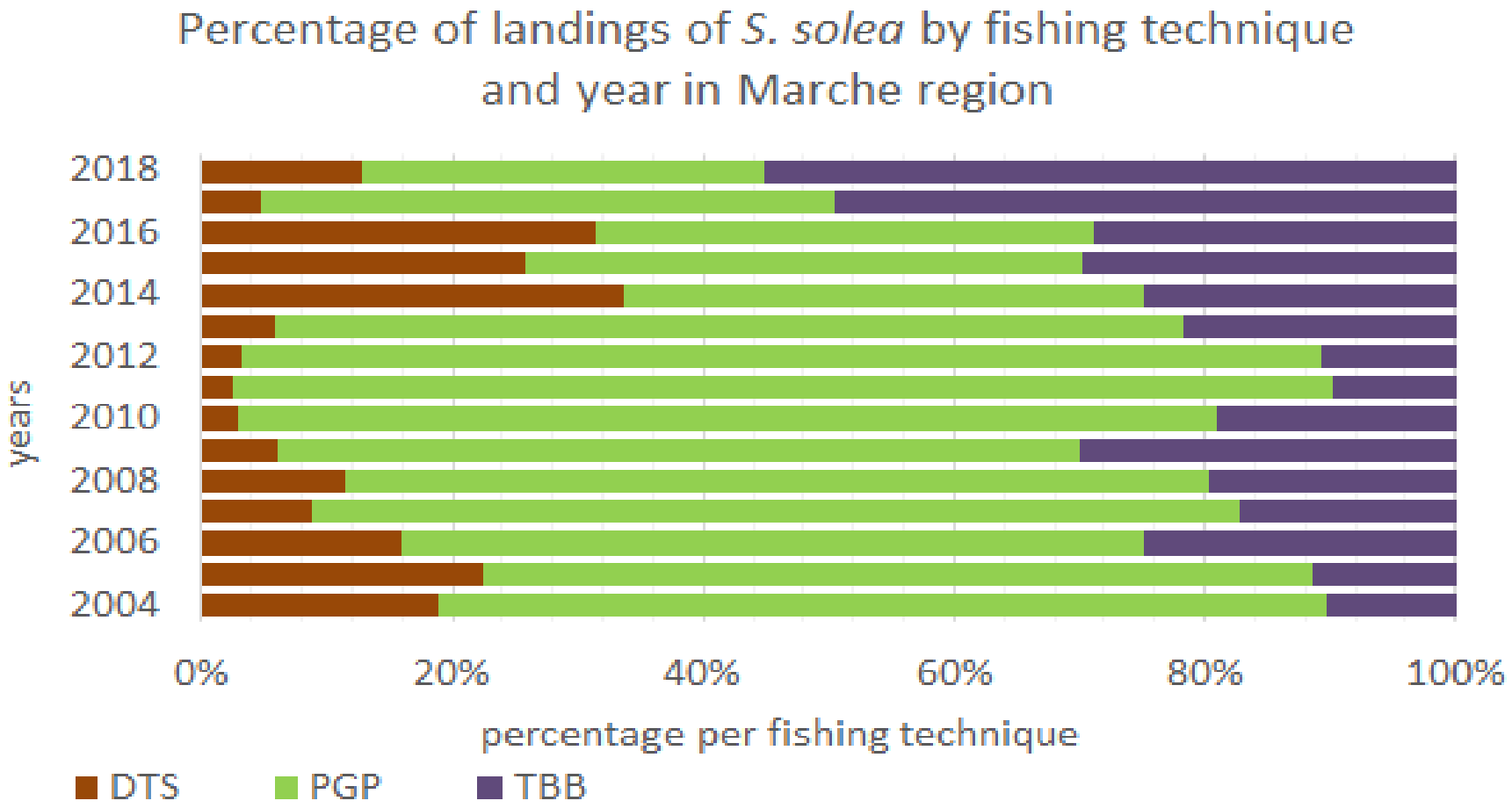




Landings data from the assessment (Scarcella et al., 2019)

Landings data used for comparison and to parameterize the productivity by fleet

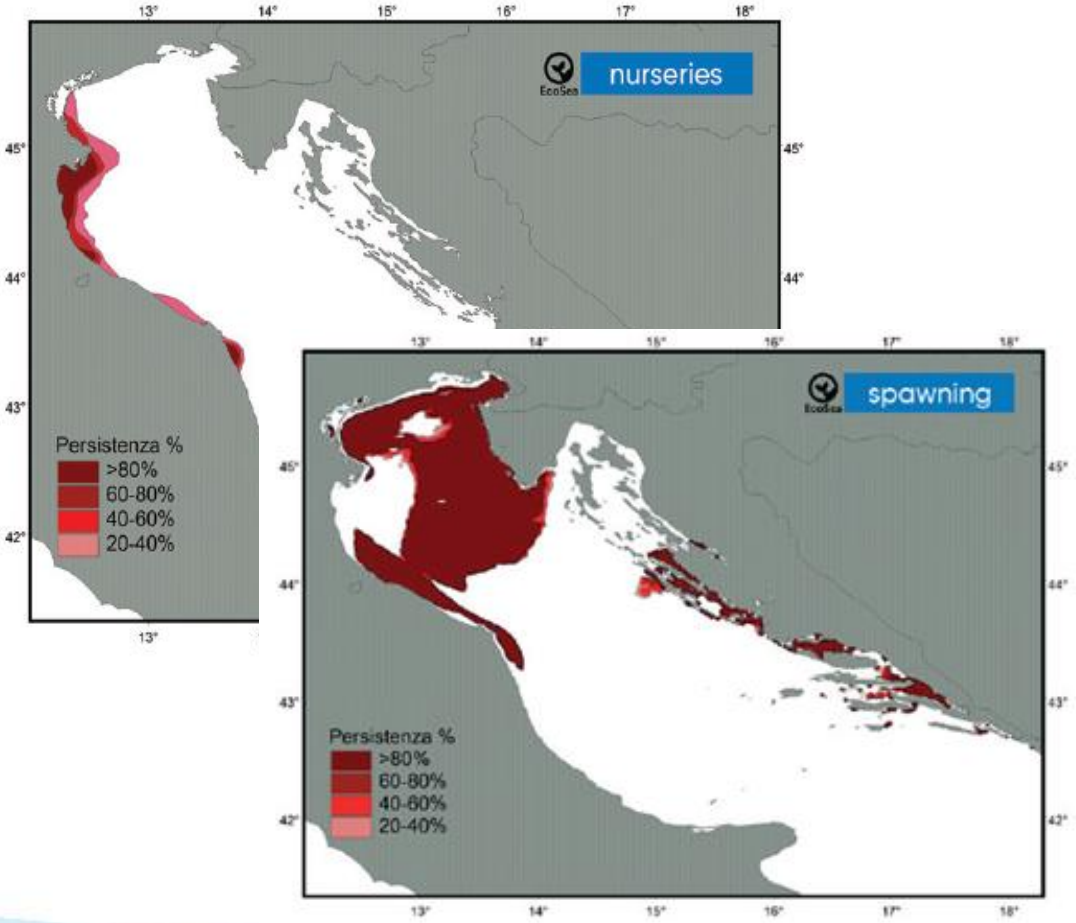
Landings by fishing techniques in the Marche region



Simulations using bioeconomic modelling – BIOECO

Improving the exploitation pattern

*considering **spatio-temporal closures***

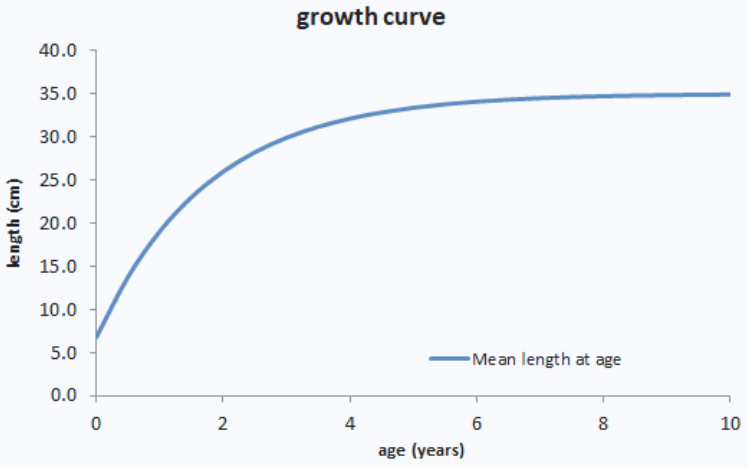


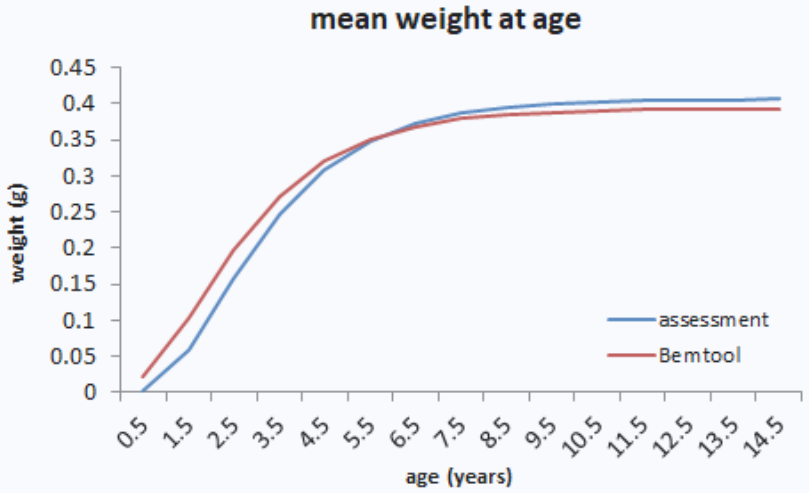
*Linking **fishing grounds** (e.g. the more visited) to the beam trawl (TBB) group of vessels by month/season.*

*Combine the information on the fleet behavior with the main **target species** (common sole) **distribution according to the season and life stages**.*

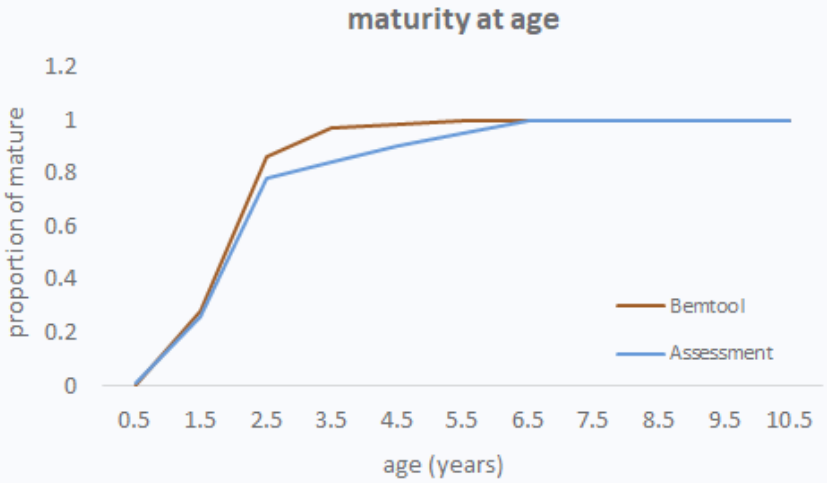
A specific selectivity is associated to the fleets

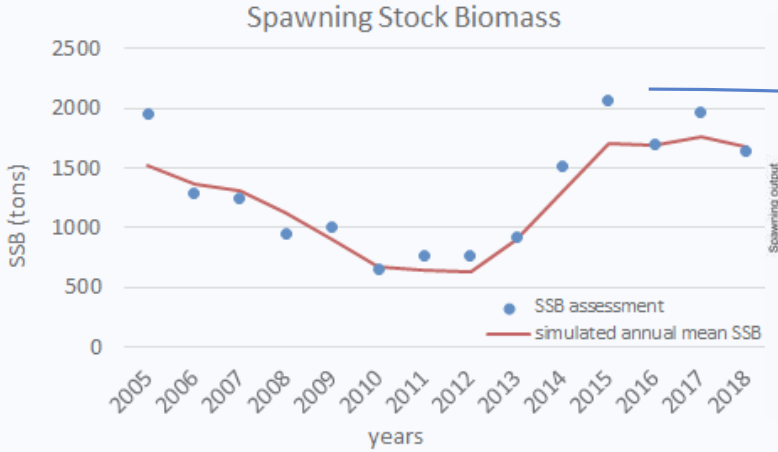
BIOECO – Mimicking stock assessment

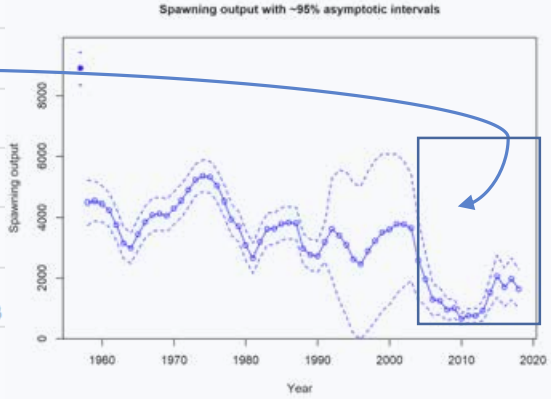




Currently the stock is slightly overexploited with the need to preserve the reproductive potential (Scarcella et al., 2019)

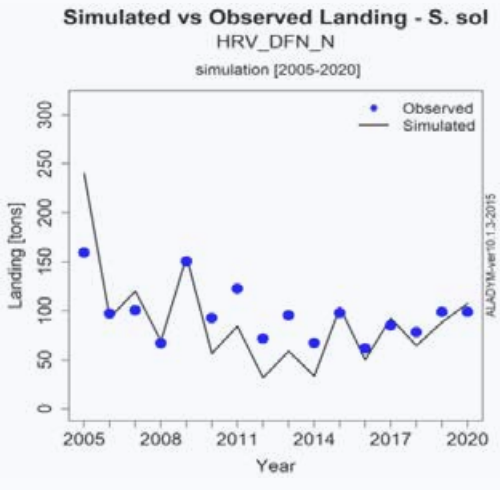


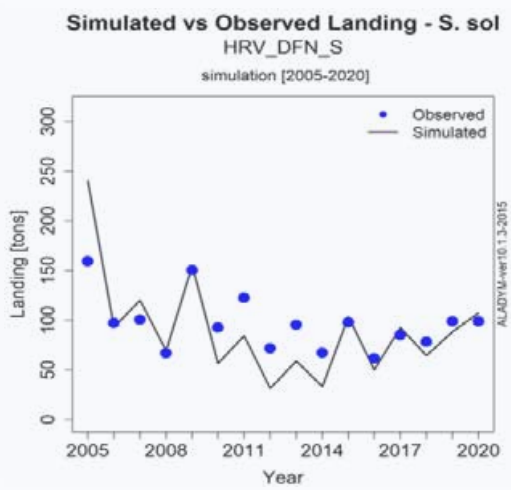


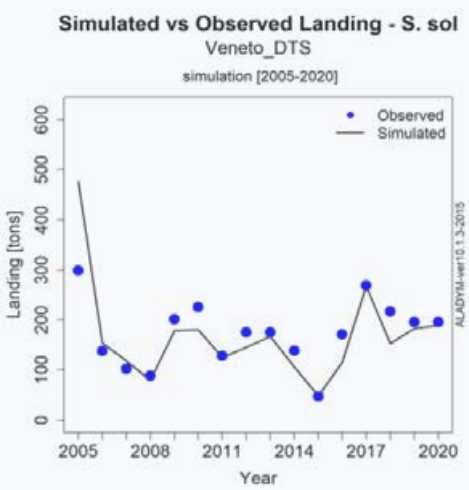


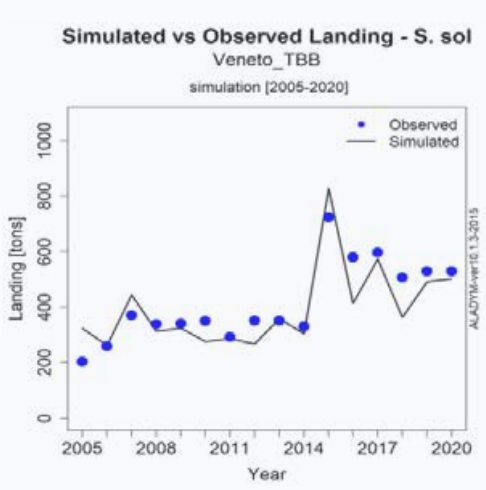
Interreg Italy - Croatia FAIRSEA
European Regional Development Fund
EUROPEAN UNION

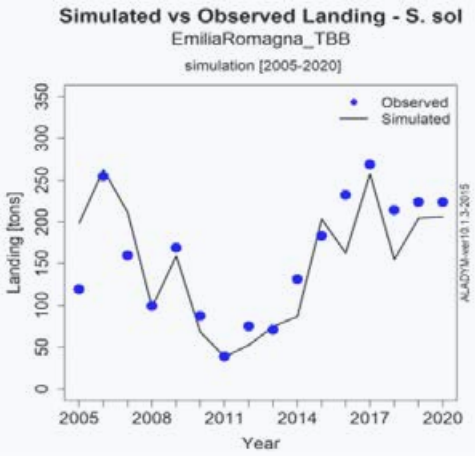
BIOECO – Mimicking landings by fleet and sub-region

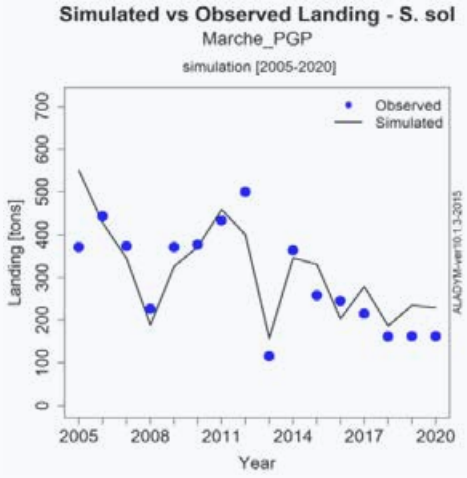


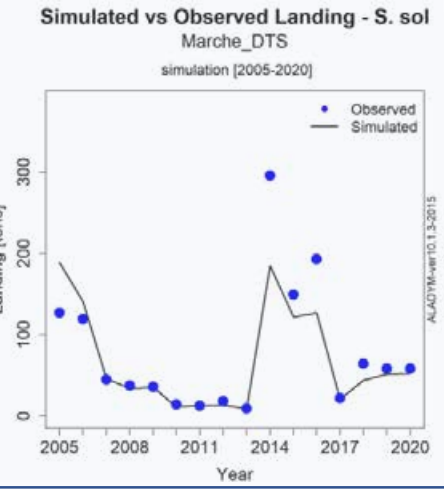


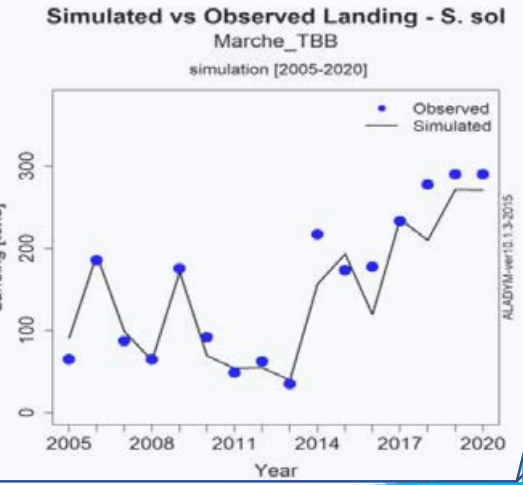










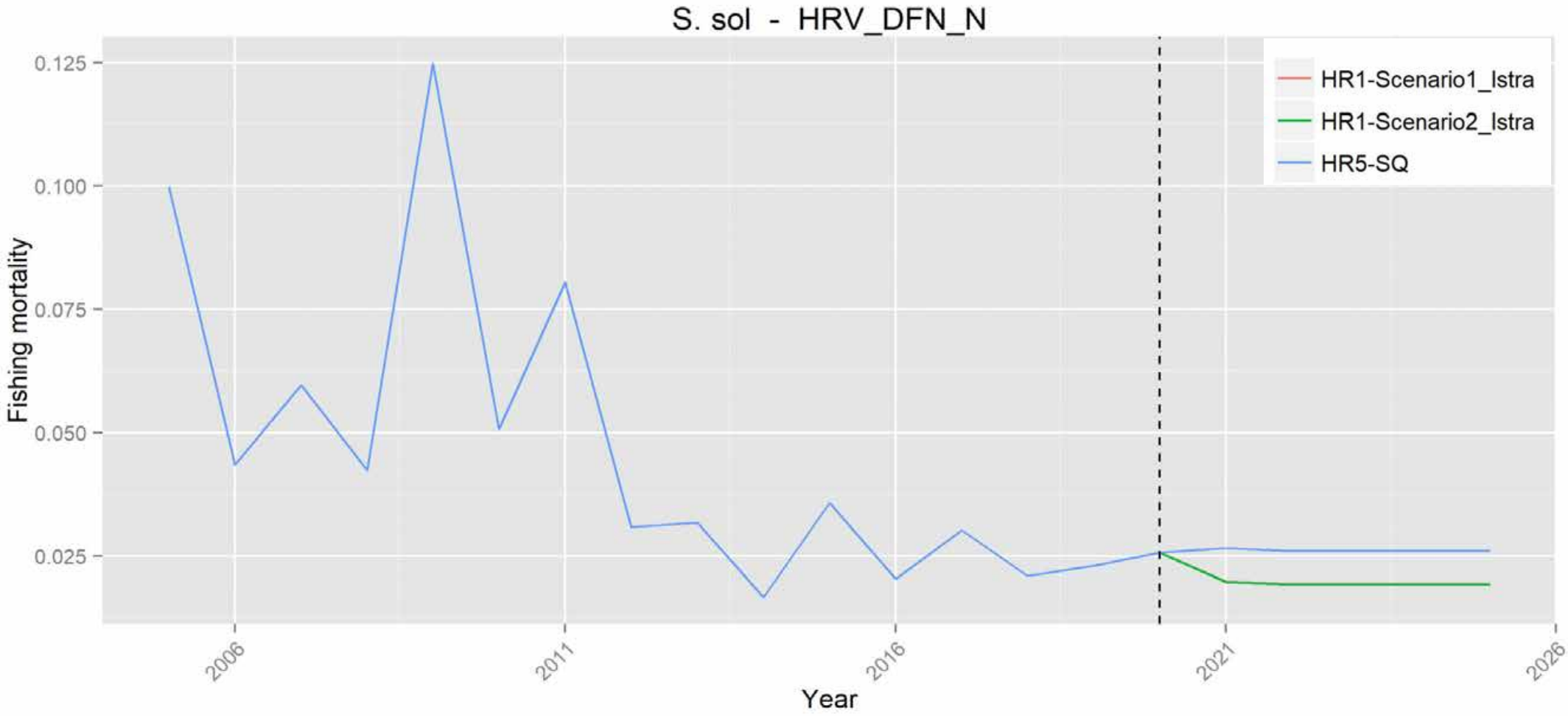


Interreg Italy - Croatia FAIRSEA
European Regional Development Fund
EUROPEAN UNION

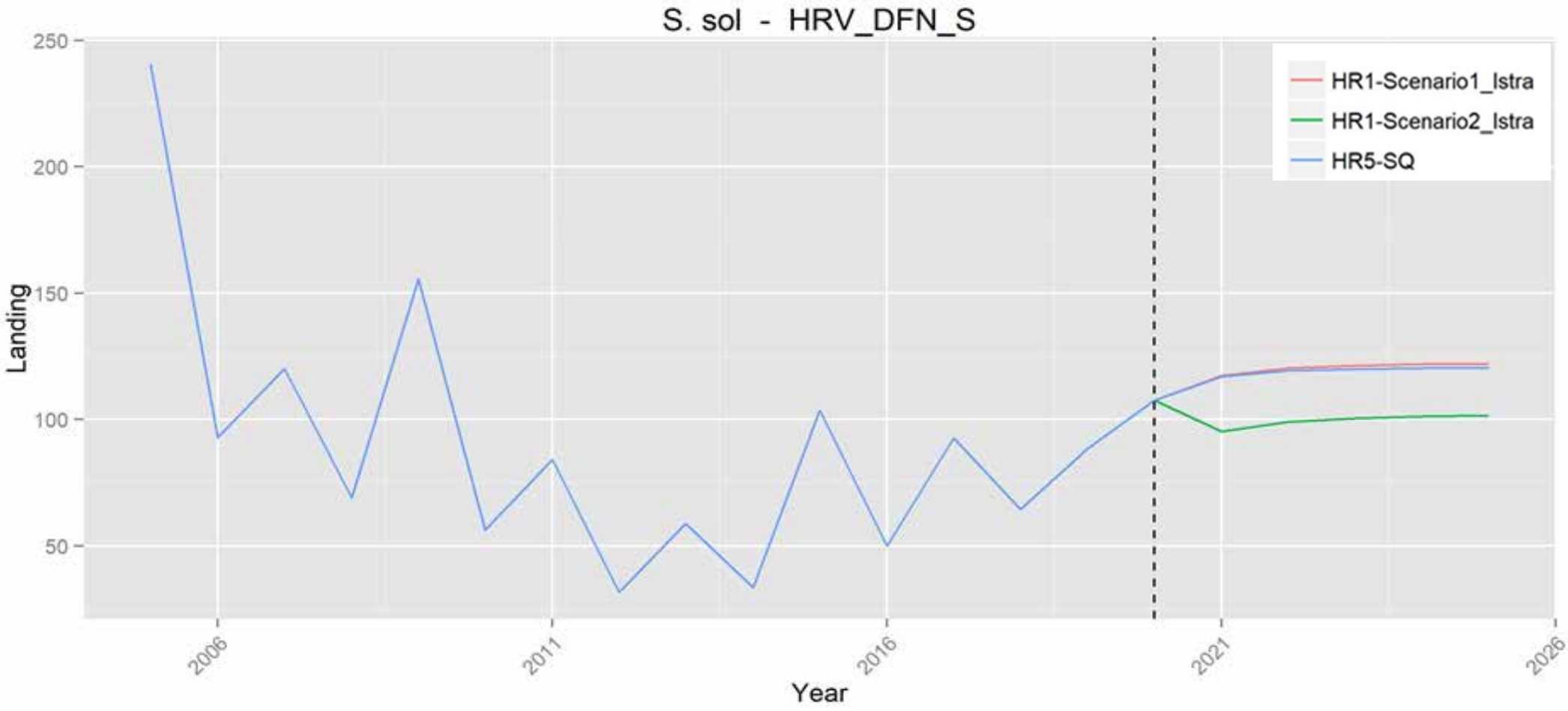
BIOECO – Four Management scenarios + Status Quo

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
Status Quo	All	No changes from the current situation

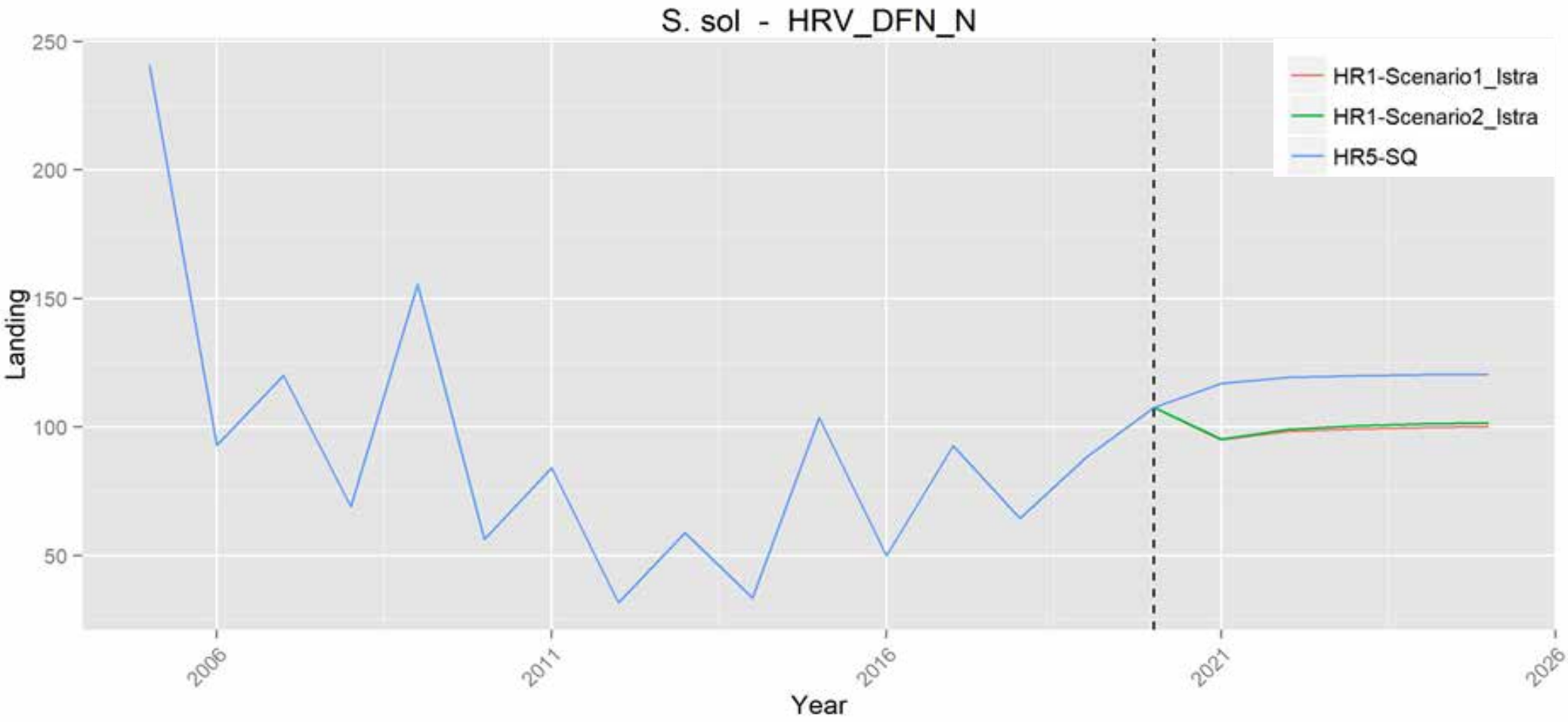
BIOECO scenarios – Istria - Fishing mortality trend



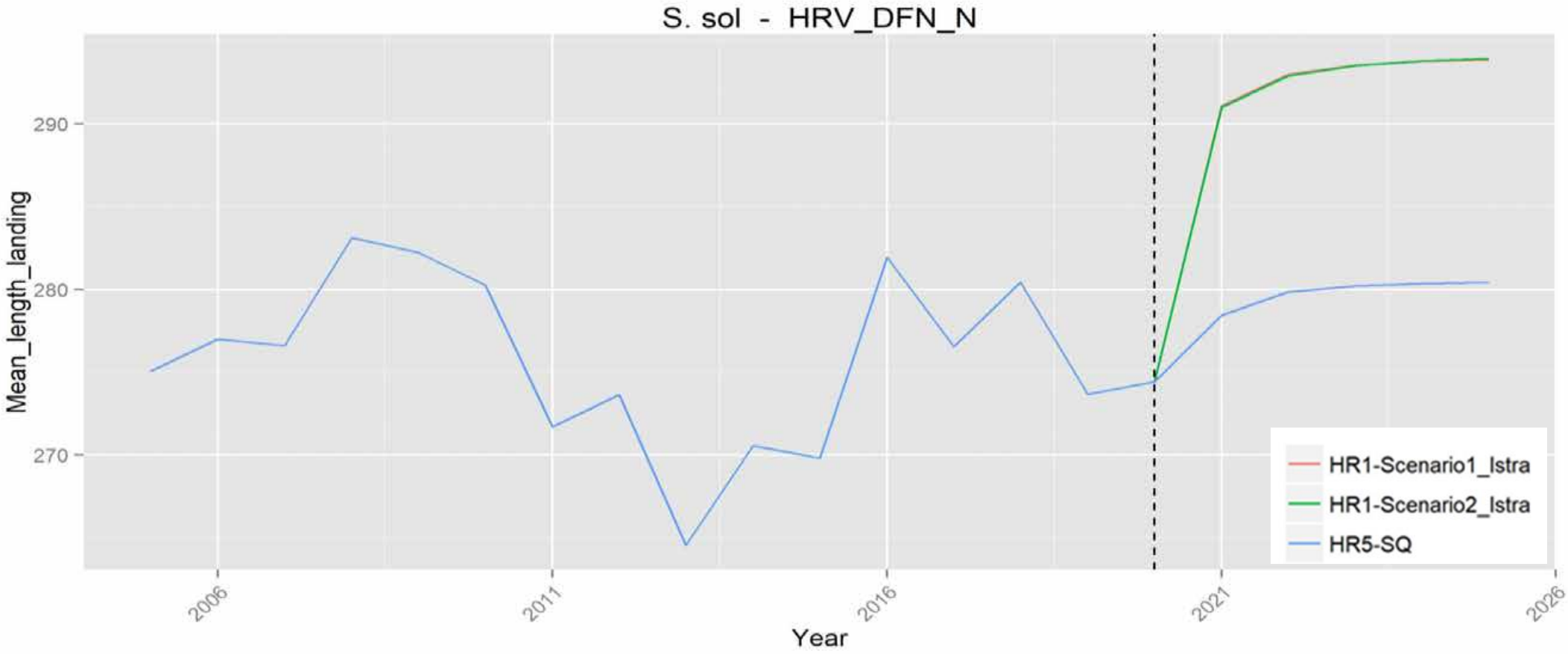
BIOECO scenarios - Istria – Landing trend



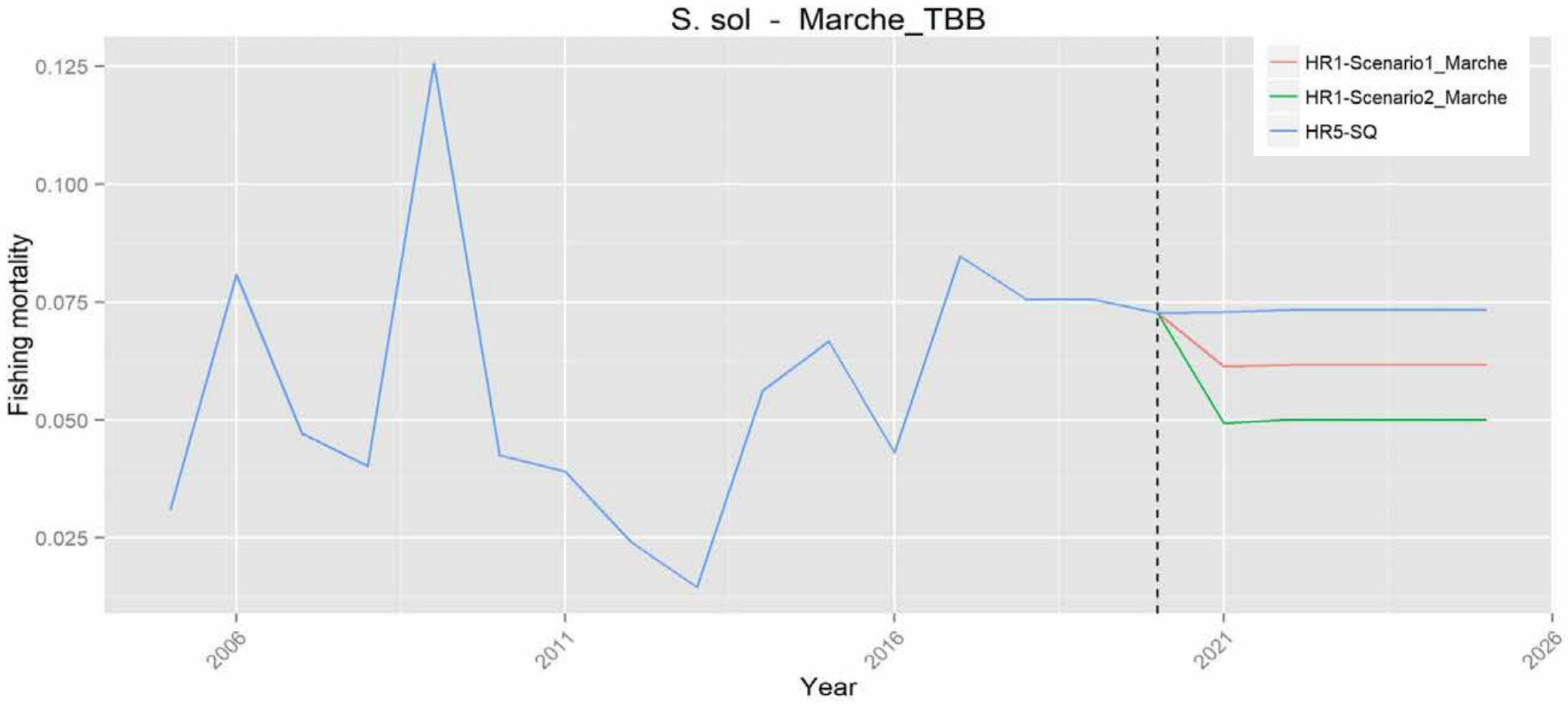
BIOECO Scenarios - Istria – Landing trend



BIOECO scenarios - Istria – trend of mean length in the landing

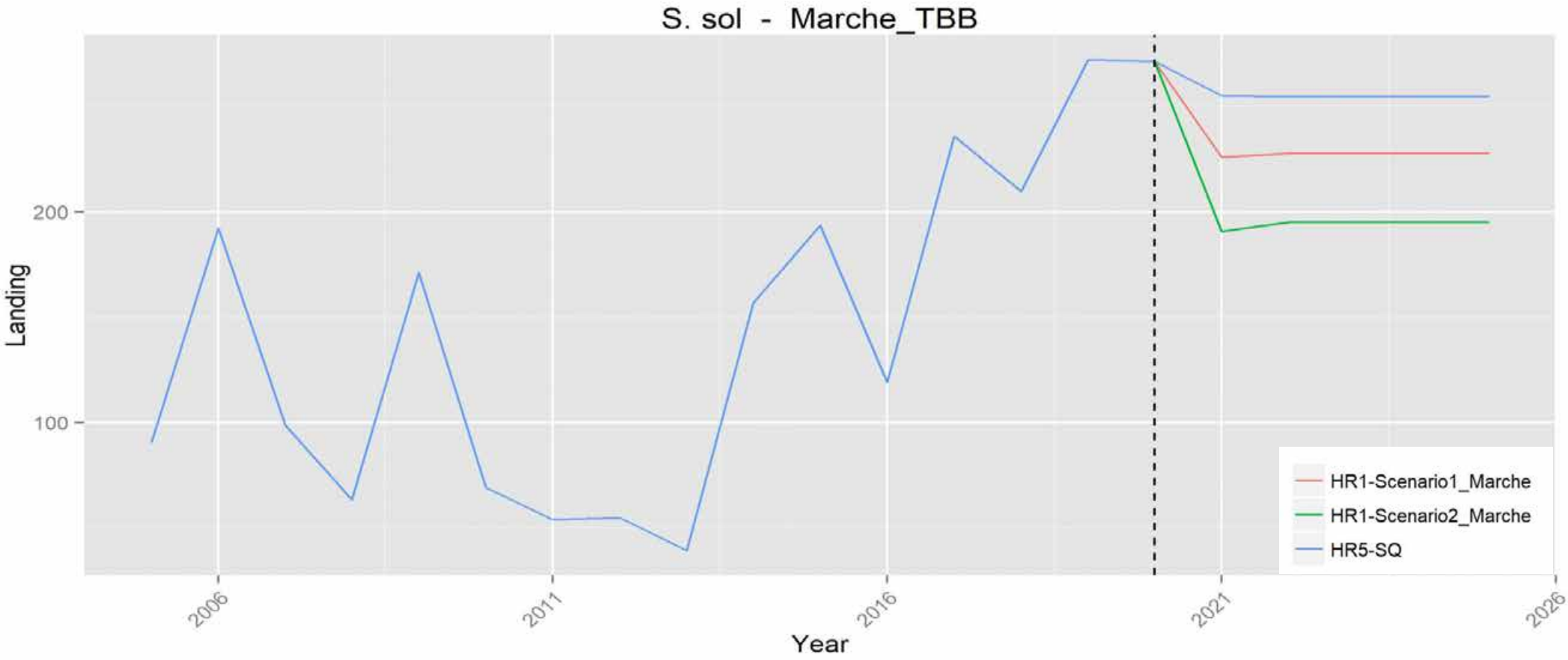


BIOECO scenarios - Marche – Fishing mortality trend

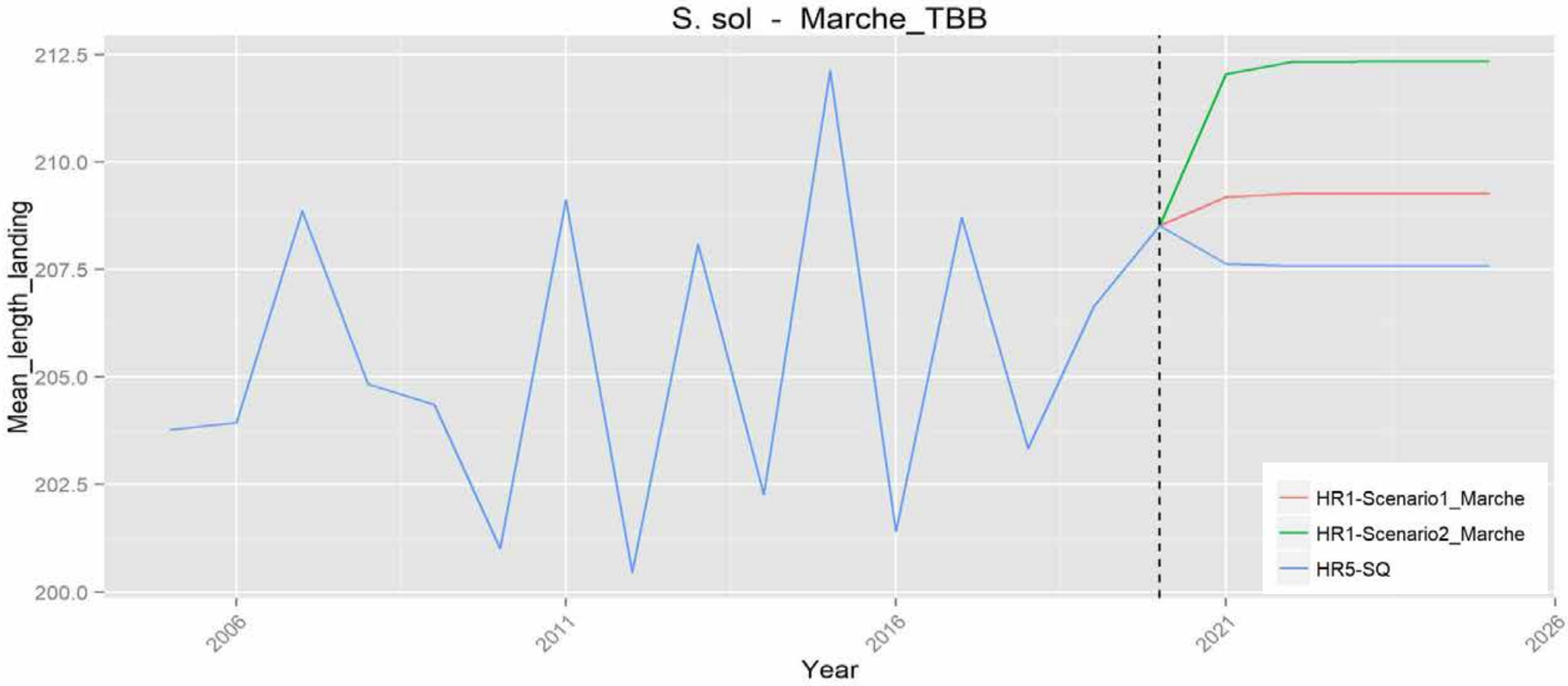


Space for Logos

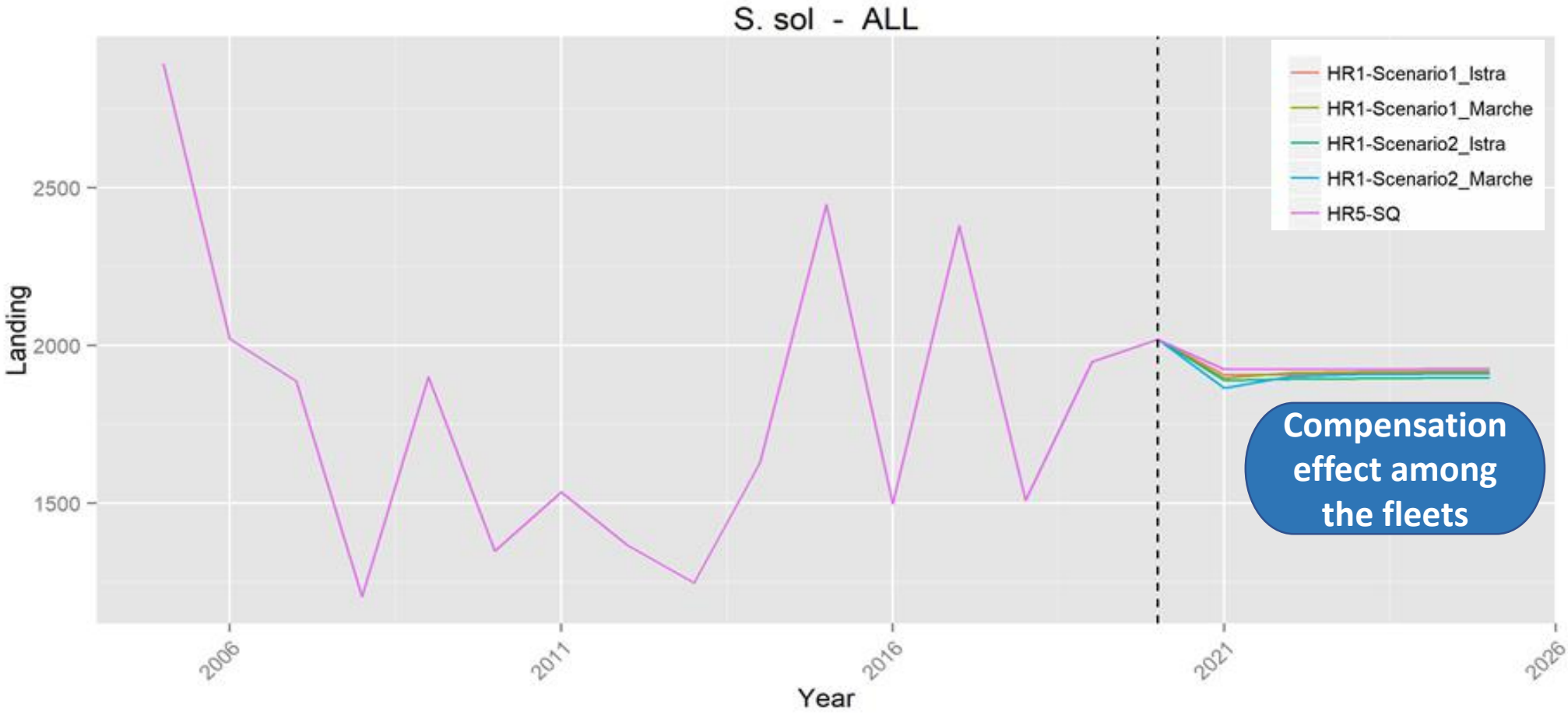
BIOECO scenarios – Marche – trend of TBB Landing



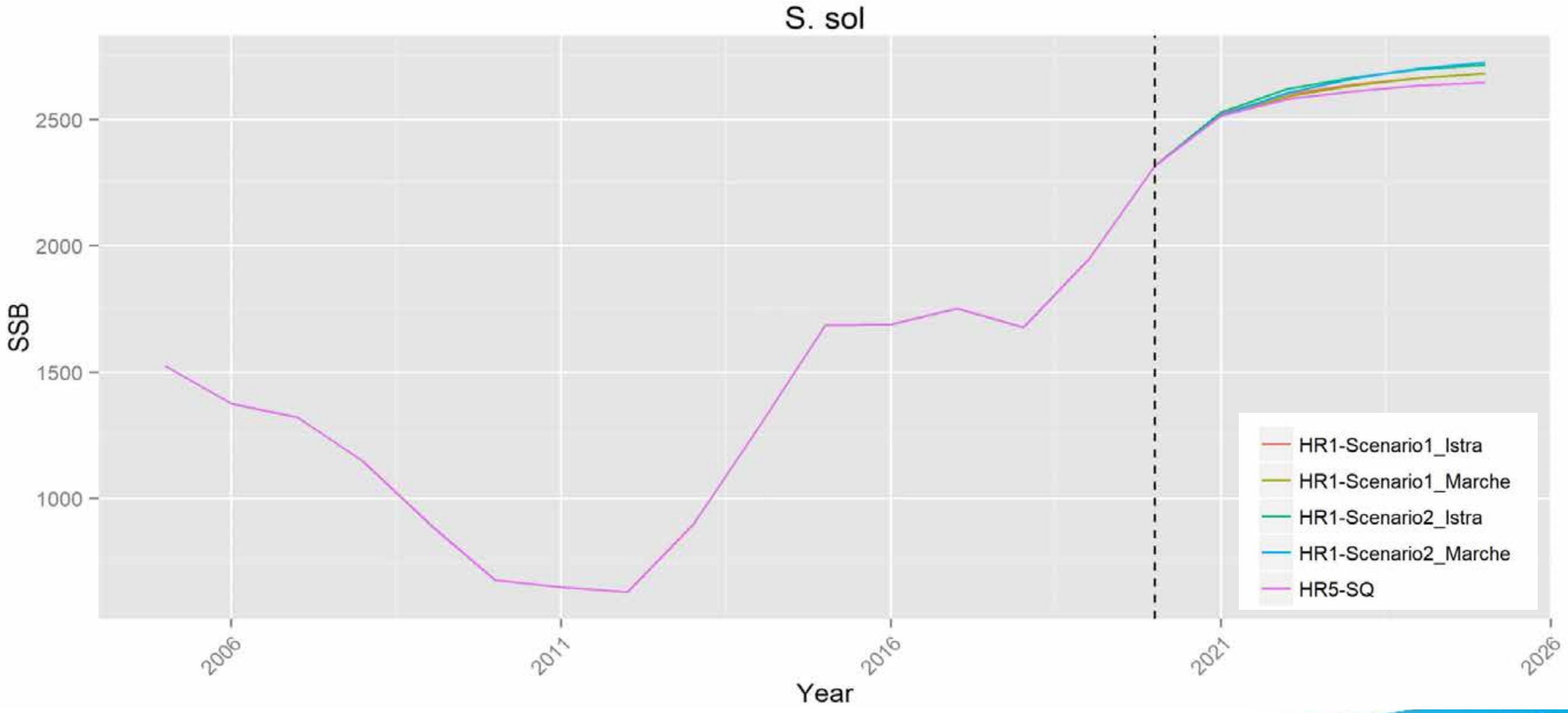
BIOECO scenarios - Marche
trend of mean length in TBB landing



BIOECO All scenarios – trend of landings for all the fleets



BIOECO All scenarios – trend of SSB



Some remarks and next steps

A new assessment will be carried out, new elements will be taken into account depending on the timing

New scenarios to be implemented, inputs needed:

a. *Extending to the other beam trawlers and trawlers the same measure as for Marche beam trawlers?*
b. *Extending best practices of Istria small scale to the western Adriatic fleets?*
c. *Introducing a fishing ban for small scale fisheries in winter time when common sole reproduces?*
d. *A combination of measures?*
e. *Other suggestions?*

Preliminary results of Pilot Actions case studies

COISPA
Maria Teresa Spedicato

COISPA
Tecnologia & Ricerca
Stazione Sperimentale
per lo Studio delle
Risorse del Mare

Address: COISPA, Bari, Italy

spedicato@coispa.it

+390805433596

www.italy-croatia.eu/acronym

FAIRSEA
Fisheries in the Adriatlc Region - a Shared Ecosystem Approach

Second Stakeholder meeting 23 February 2021

Kudo platform

Preference modelling techniques to facilitate the participatory process DEMERSAL

European Regional Development Fund

0

EN Survey's participants	ITA Partecipanti all'indagine	HR Ispitanici
Citizenship: Italian	Cittadinanza: Italiana	Državljanstvo: talijansko
Citizenship: Croatian	Cittadinanza: Croata	Državljanstvo: hrvatsko
Citizenship: Slovenian	Cittadinanza: Slovena	Državljanstvo: slovensko
Citizenship: Other (specify)	Cittadinanza: Altro (specificare)	Državljanstvo: ostalo (navesti)
Fisherman: Small scale fishery	Pescatore: Piccola pesca	Ribar: mali priobalni ribolov
Fisherman: Trawl fishery	Pescatore: Pesca a strascico	Ribar: povlačne mreže (koće)
Fisherman: Small pelagic fishery	Pescatore: Cianciolo/Volante	Ribar: plivarice/ pelagijske povlačne mreže
Fisherman: Long line fishery	Pescatore: Palangaro	Ribar: parangal
Fishermen Association/Cooperative	Associazione Pescatori/Cooperative	Ribarska udruga /zadruga
NGOs	NGOs	Nevladina organizacija (NGO)
Public Authorities	Pubblica Amministrazione	Javna uprava
Researcher	Ricercatore	Istraživač
Other (specify)	Altro (specificare)	Ostalo (navesti)

1	2	3
LESS IMPORTANT	IMPORTANT	MOST IMPORTANT
MENO IMPORTANTE	IMPORTANTE	PIÙ IMPORTANTE
MALO VAŽNO	VAŽNO	VRLO VAŽNO

EN *Which of the following factors should be taken into account in the management of demersal species?*	**ITA** *Quali fattori dovrebbero esser maggiormente considerati nella gestione degli stock demersali?*	**HR** *O kojim bi čimbenicima trebalo voditi više računa pri upravljanju pridnenim stokovima?*
Fishing mortality	Mortalità da pesca	Ribolovna smrtnost
Effects of pollution	Effetto dell'inquinamento	Učinak onečišćenja
Climate change and related environmental changes influencing the target species	Cambiamento climatico e relative variazioni ambientali che influiscono sulle specie target	Klimatske promjene i povezane okolišne promjene koje utječu na ciljane vrste
Climate change and related impact due to the arrival of alien species	Cambiamento climatico e relativo impatto per l'arrivo di specie aliene	Klimatske promjene i povezani učinak zbog dolaska stranih vrsta
Interactions between species (prey-predator, marine mammals etc.)	Interazioni tra specie (preda-predatore, ad es. tonno, mammiferi marini etc.)	Interakcija među vrstama (lovina – grabežljivac, npr. morski sisavci itd.)
Other	Altro	Ostalo

2.1

EN *Which of the following scenarios do you consider most important/useful in order to support the sustainable management of the fishery?*	ITA *Quale dei seguenti scenari considera più importante/adatto allo scopo di promuovere una gestione sostenibile della pesca?*	HR *Koji od sljedećih scenarija smatrate najvažnijim/najprikladnijim u svrhu promicanja održivog upravljanja ribarstvom?*
Fleet withdrawal	Ritiro dei battelli	Trajna obustava ribolova-scrapping
Seasonal fishing ban	Fermo di pesca stagionale	Sezonska zabrana ribolova
Managing fishing days per year	Gestione del numero di giorni di pesca nell'anno	Upravljanje brojem ribolovnih dana u godini
Managing fishing hours per year	Gestione del numero delle ore di pesca nell'anno	Upravljanje brojem ribolovnih sati u godini
Spatial fishing ban	Fermo di pesca su base spaziale	Prostorna zabrana ribolova
Managing nursery/spawning areas	Gestione delle aree di nursery e di concentrazione dei riproduttori	Upravljanje rastilištima i mrjestilištima
Managing sensitive habitat	Gestione degli habitat sensibili	Upravljanje osjetljivim staništima
Managing gear selectivity	Selettività degli attrezzi da pesca	Promjena selektivnosti ribolovnih alata
Managing fishing mortality proportionally to the fleet capacity	Gestione della mortalità da pesca in misura proporzionale alla capacità delle singole flotte	Upravljanje ribolovnom smrtnošću proporcionalno s kapacitetom pojedinih flota

2.2

EN *Which of the following scenarios do you consider most important/useful in order to support the sustainable management of the fishery?*	ITA *Quale dei seguenti scenari considera più importante/adatto allo scopo di promuovere una gestione sostenibile della pesca?*	HR *Koji od sljedećih scenarija smatrate najvažnijim/najprikladnijim u svrhu promicanja održivog upravljanja ribarstvom?*
Managing fishing mortality proportionally to the fleet landings	Gestione della mortalità da pesca in misura proporzionale allo sbarcato delle singole flotte	Upravljanje ribolovnom smrtnošću proporcionalno s iskrcanim količinama pojedinih flota
Introduce TAC for some stock	Introdurre TAC per alcuni stock	Uvođenje ukupnih dopuštenih količina (TAC) za neke stokove
Managing a mix of measures	Gestire un mix di misure	Upravljanje kombinacijom mjera
Keeping status quo	Mantenere lo status quo	Zadržati status quo
Introducing short term restrictive measures	Introdurre misure restrittive ma solo nel breve periodo	Uvođenje kratkoročnih restriktivnih mjera
Balanced exploitation	Pescare in modo bilanciato su un ampio spettro di stock e taglie, in proporzione alla loro produttività	Uravnoteženo iskorištavanje stokova
Managing fleets in order to permit reallocation of labour between fleets	Gestire le flotte permettendo una riallocazione del lavoro fra flotte	Upravljanje flotama na način da se dopusti preraspodjela rada među flotama

3.1

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
Can you provide more detailed information on how a balanced allocation of the TACs or effort quotas can be ensured between the fleet segments?	*Fornire indicazioni più dettagliate su come potrebbe essere garantita una più bilanciata allocazione delle quote di catture o di sforzo tra i segmenti della flotta*	*Navesti detaljnije na koji bi se način moglo jamčiti uravnoteženiju raspodjelu ulovnih kvota ili napora među segmentima flote*

3.2

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
Can you provide information on the limits of reduction in terms of effort/catches in terms of socioeconomic impact? Which are the factors to be considered in order to support the sector?	*Puoi fornire indicazioni sui limiti di riduzione di sforzo/quantità ritenuti sostenibili dal punto di vista socio-economico. Fattori su cui intervenire per tutelare il settore?*	*Ili navesti ograničenja za smanjenje napora /količine za koje se smatra da su održive sa socioekonomskog gledišta. Postoje li čimbenici u pogledu kojih treba djelovati kako bi se zaštitio sektor?*

3.3

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
Do you think that it is better to regulate demersal fisheries by catches and fishing effort limitation or by spatial and temporal regulations at the spawning or nursery grounds for the most important species?	*Ritenete meglio regolamentare la pesca demersale attraverso le catture e lo sforzo di pesca o attraverso regolamenti spazio-temporali nei fondali di riproduzione e aree nursery per le specie più importanti?*	*Mislite li da je bolje regulirati pridneni ribolov ribe putem limitiranja ulova i ribolovnog napora ili putem prostorne i vremenske regulacije ribolova u rastilištima i mrijestilištima najvažnijih vrsta?*

3.4

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN *Other?*	ITA *Altro?*	HR *Ostalo?*

FAIRSEA
Fisheries in the Adriatlc Region - a Shared Ecosystem Approach

Second Stakeholder meeting 23 February 2021

Kudo platform

Preference modelling techniques to facilitate the participatory process SMALL PELAGICS

European Regional Development Fund

0

EN Survey's participants	ITA Partecipanti all'indagine	HR Ispitanici
Citizenship: Italian	Cittadinanza: Italiana	Državljanstvo: talijansko
Citizenship: Croatian	Cittadinanza: Croata	Državljanstvo: hrvatsko
Citizenship: Slovenian	Cittadinanza: Slovena	Državljanstvo: slovensko
Citizenship: Other (specify)	Cittadinanza: Altro (specificare)	Državljanstvo: ostalo (navesti)
Fisherman: Small scale fishery	Pescatore: Piccola pesca	Ribar: mali priobalni ribolov
Fisherman: Trawl fishery	Pescatore: Pesca a strascico	Ribar: povlačne mreže (koće)
Fisherman: Small pelagic fishery	Pescatore: Cianciolo/Volante	Ribar: plivarice/ pelagijske povlačne mreže
Fisherman: Long line fishery	Pescatore: Palangaro	Ribar: parangal
Fishermen Association/Cooperative	Associazione Pescatori/Cooperative	Ribarska udruga /zadruga
NGOs	NGOs	Nevladina organizacija (NGO)
Public Authorities	Pubblica Amministrazione	Javna uprava
Researcher	Ricercatore	Istraživač
Other (specify)	Altro (specificare)	Ostalo (navesti)

1	2	3
LESS IMPORTANT	IMPORTANT	MOST IMPORTANT
MENO IMPORTANTE	IMPORTANTE	PIÙ IMPORTANTE
MALO VAŽNO	VAŽNO	VRLO VAŽNO

EN *Which of the following factors should be taken into account in the management of small pelagic species?*	**ITA** *Quali fattori dovrebbero esser maggiormente considerati nella gestione degli stock di piccoli pelagici?*	**HR** *O kojim bi čimbenicima trebalo voditi više računa pri upravljanju stokovima male plave ribe?*
Fishing mortality	Mortalità da pesca	Ribolovna smrtnost
Effects of pollution	Effetto dell'inquinamento	Učinak onečišćenja
Climate change and related environmental changes influencing the target species	Cambiamento climatico e relative variazioni ambientali che influiscono sulle specie target	Klimatske promjene i povezane okolišne promjene koje utječu na ciljane vrste
Climate change and related impact due to the arrival of alien species	Cambiamento climatico e relativo impatto per l'arrivo di specie aliene	Klimatske promjene i povezani učinak zbog dolaska stranih vrsta
Interactions between species (prey-predator, marine mammals etc.)	Interazioni tra specie (preda-predatore, ad es. tonno, mammiferi marini etc.)	Interakcija među vrstama (lovina – grabežljivac, npr. morski sisavci itd.)
Other	Altro	Ostalo

2.1

EN *Which of the following scenarios do you consider most important/useful in order to support the sustainable management of the fishery?*	ITA *Quale dei seguenti scenari considera più importante/adatto allo scopo di promuovere una gestione sostenibile della pesca?*	HR *Koji od sljedećih scenarija smatrate najvažnijim/najprikladnijim u svrhu promicanja održivog upravljanja ribarstvom?*
Fleet withdrawal	Ritiro dei battelli	Trajna obustava ribolova-scrapping
Seasonal fishing ban	Fermo di pesca stagionale	Sezonska zabrana ribolova
Managing fishing days per year	Gestione del numero di giorni di pesca nell'anno	Upravljanje brojem ribolovnih dana u godini
Managing fishing hours per year	Gestione del numero delle ore di pesca nell'anno	Upravljanje brojem ribolovnih sati u godini
Spatial fishing ban	Fermo di pesca su base spaziale	Prostorna zabrana ribolova
Managing nursery/spawning areas	Gestione delle aree di nursery e di concentrazione dei riproduttori	Upravljanje rastilištima i mrjestilištima
Managing sensitive habitat	Gestione degli habitat sensibili	Upravljanje osjetljivim staništima
Managing gear selectivity	Selettività degli attrezzi da pesca	Promjena selektivnosti ribolovnih alata
Managing fishing mortality proportionally to the fleet capacity	Gestione della mortalità da pesca in misura proporzionale alla capacità delle singole flotte	Upravljanje ribolovnom smrtnošću proporcionalno s kapacitetom pojedinih flota

2.2

EN *Which of the following scenarios do you consider most important/useful in order to support the sustainable management of the fishery?*	**ITA** *Quale dei seguenti scenari considera più importante/adatto allo scopo di promuovere una gestione sostenibile della pesca?*	**HR** *Koji od sljedećih scenarija smatrate najvažnijim/najprikladnijim u svrhu promicanja održivog upravljanja ribarstvom?*
Managing fishing mortality proportionally to the fleet landings	Gestione della mortalità da pesca in misura proporzionale allo sbarcato delle singole flotte	Upravljanje ribolovnom smrtnošću proporcionalno s iskrcanim količinama pojedinih flota
Introduce TAC for some stock	Introdurre TAC per alcuni stock	Uvođenje ukupnih dopuštenih količina (TAC) za neke stokove
Managing a mix of measures	Gestire un mix di misure	Upravljanje kombinacijom mjera
Keeping status quo	Mantenere lo status quo	Zadržati status quo
Introducing short term restrictive measures	Introdurre misure restrittive ma solo nel breve periodo	Uvođenje kratkoročnih restriktivnih mjera
Balanced exploitation	Pescare in modo bilanciato su un ampio spettro di stock e taglie, in proporzione alla loro produttività	Uravnoteženo iskorištavanje stokova
Managing fleets in order to permit reallocation of labour between fleets	Gestire le flotte permettendo una riallocazione del lavoro fra flotte	Upravljanje flotama na način da se dopusti preraspodjela rada među flotama

3.1

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
Do you agree on a TAC/quota for one of the two species of small pelagics (or sardine, Sardina pilchardus, or anchovy, Engraulis encrasicolus)? If not, why?	*Ritenete applicabile una definizione di quota specie-specifica (o per sardina, Sardina pilchardus, o per acciuga, Engraulis encrasicolus)? Se no, perché?*	*Smatrate li da je moguće definirati zasebne kvote za pojedine vrste (ili za srdelu, Sardina pilchardus, ili za inćun, Engraulis encrasicolus)? Ako ne, zašto?*

3.2

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
How a balanced allocation of the TACs or effort quotas can be ensured between the fleet segments?	*Nel caso di definizione di quote di pescato/quote di sforzo, come garantire una corretta allocazione tra i diversi segmenti di pesca?*	*U slučaju utvrđivanja kvota ulova /kvota napora, na koji je način moguće zajamčiti ispravnu raspodjelu među različitim segmentima ribolova?*

3.3

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
Please, provide information on the limits of effort/quantity reductions potentially sustainable in a socioeconomic perspective. How the fishery sector could be protected?	*Fornire indicazioni sui limiti di riduzione di sforzo/quantità ritenuti sostenibili dal punto di vista socio-economico. Fattori su cui intervenire per tutelare il settore?*	*Navesti do koje mjere smatrate da je smanjenje napora /količine održivo sa socioekonomskog gledišta. Postoje li čimbenici u pogledu kojih treba djelovati kako bi se zaštitio sektor?*

3.4

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN	ITA	HR
Do you think that it is better to regulate small pelagic fisheries by catches and fishing effort limitation or by spatial and temporal regulations at the spawning or nursery grounds for the most important species?	*Ritenete meglio regolamentare la pesca dei piccoli pelagici attraverso le catture e lo sforzo di pesca o attraverso regolamenti spazio-temporali nei fondali di riproduzione e aree nursery per le specie più importanti?*	*Mislite li da je bolje regulirati ribolov sitne plave ribe putem limitiranja ulova i ribolovnog napora ili putem prostorne i vremenske regulacije ribolova u rastilištima i mrijestilištima najvažnijih vrsta?*

3.5

COMMENTS ON MANAGEMENT MEASURES
OSSERVAZIONI RILEVANTI RELATIVAMENTE ALLE DIVERSE MISURE
MIŠLJENJE O MJERAMA UPRAVLJANJA

EN *Other?*	ITA *Altro?*	HR *Ostalo?*

FAIRSEA
Fisheries in the Adriatlc Region - a Shared Ecosystem Approach

Second Stakeholder meeting 24 February 2021

Kudo platform

WORKING GROUP 1

The Area in the North Adriatic Sea and socio-economic effects of different management scenarios for common sole

European Regional Development Fund

“HAVE YOUR SAY!”
Debate and inputs from stakeholders on the next steps of pilot actions
1

EN	ITA	HR
Which is the stock status of solea, in your view?	*Secondo il vostro punto di vista quale è lo stato della risorsa sogliola?*	*Prema Vašem mišljenju, kakvo je stanje stoka lista?*

“HAVE YOUR SAY!”
Debate and inputs from stakeholders on the next steps of pilot actions
2

EN	ITA	HR
Did the fishing ban within the 6 nm after the closed season influence marine resources?	*Secondo il vostro punto di vista il divieto di pescare entro le 6mn dopo la fine del fermo pesca ha avuto effetto sulla risorsa?*	*Prema Vašem mišljenju, je li zabrana ribolova unutar 6 nautičkih milja nakon isteka lovostaja utjecala na resurs?*

Interreg Italy - Croatia FAIRSEA
EUROPEAN UNION
MEDAC MEDITERRANEAN ADVISORY COUNCIL
OGS
COISPA Tecnologia & Ricerca
Stazione Sperimentale per lo Studio delle Risorse del Mare
IRBIM
VeGAL
Assam
GoNISMa
MINISTARSTVO POLJOPRIVREDE
INSTITUT ZA OCEANOGRAFIJU I RIBARSTVO SPLIT
sunce
rerasd

FAIRSEA
Fisheries in the Adriatlc Region - a Shared Ecosystem Approach

Second Stakeholder meeting 24 February 2021

Kudo platform

WORKING GROUP 2

Decision support tool applied to the management of the Veneto professional and recreational fisheries

European Regional Development Fund

“HAVE YOUR SAY!”
Debate and inputs from stakeholders on the next steps of pilot actions
1

EN	ITA	HR
In which sectors and to what extent, should the fishing effort be changed?	*Di quali comparti, e di quanto, sarebbe interessante modificare lo sforzo?*	*U kojim bi sektorima i do koje mjere trebalo izmijeniti ribolovni napor?*

Interreg Italy - Croatia FAIRSEA
EUROPEAN UNION
MEDAC MEDITERRANEAN ADVISORY COUNCIL
OGS
COISPA Tecnologia & Ricerca
Stazione Sperimentale per lo Studio delle Risorse del Mare
IRBIM
VeGAL
Assam
GoNISMa
MINISTARSTVO POLJOPRIVREDE
INSTITUT ZA OCEANOGRAFIJU I RIBARSTVO SPLIT
sunce
rerasd

“HAVE YOUR SAY!”
Debate and inputs from stakeholders on the next steps of pilot actions
2

EN	ITA	HR
Which management proposals would be reasonable to be tested at spatial level (i.e. fishing ban in some areas for different fishing segments, or the alternation of different types of fishing activities in an area, or the removal of the current restrictions)?	*A livello spaziale, quali idee di gestione sarebbe ragionevole testare (ad esempio, interdizione di alcune zone ad un tipo di pesca piuttosto che ad un altro, alternanza di vari tipi di pesca in una stessa zona, oppure anche rimozione di limitazioni che adesso sono presenti)?*	*Koje bi prijedloge upravljanja bilo razumno testirati na prostornoj razini (primjerice, zabrana određenih segmenata ribolova u određenim područjima, izmjenjivanje različitih vrsta ribolova u određenom području ili uklanjanje sadašnjih ograničenja)?*

STAKEHOLDERS' PARTICIPATORY PROCESS

The participatory management represents an approach of paramount importance to address the sustainable development of the fishery sector.

This survey is based upon a questionnaire aimed to understand how the stakeholders rank the importance of the economic, social and biological factors affecting the fishery. The scoring table is to be used for ranking preference.

The overall goal is the biological, economic and social fishery sustainability.

Scoring table

Relative importance	Score
Equally important	1
Slightly more important	2
Moderately more important	3
More important	4
Extremely more important	5

Example of compilation of pairwise comparison

- Which of the following objectives is more relevant to achieve the goal?
- Tick the numbers on the left or on the right to indicate your choice between the pairwise objectives.

Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Avoid overfishing
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Preserve fishing yield
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Reduce unwanted catches

QUESTIONNAIRE

Survey's participants	
Citizenship: Italian	☐
Citizenship: Croatian	☐
Citizenship: Slovenian	☐
Citizenship: Other (specify)	
Fisherman: Small scale fishery	☐
Fisherman: Trawl fishery	☐
Fisherman: Small pelagic fishery	☐
Fisherman: Long line fishery	☐
Fishermen Association/Cooperative	☐
NGOs	☐
Public Authorities	☐
Researcher	☐
Other (specify)	

Pairwise comparisons

Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Avoid overfishing
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Preserve fishing yield
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Reduce unwanted catches
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Preserve job salaries
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Preserve employment
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Preserve profits in the short term
Preserve safe levels of reproductive potential	5 4 3 2 1 2 3 4 5	Preserve profits in the long term
Avoid overfishing	5 4 3 2 1 2 3 4 5	Preserve fishing yield
Avoid overfishing	5 4 3 2 1 2 3 4 5	Reduce unwanted catches
Avoid overfishing	5 4 3 2 1 2 3 4 5	Preserve job salaries
Avoid overfishing	5 4 3 2 1 2 3 4 5	Preserve employment
Avoid overfishing	5 4 3 2 1 2 3 4 5	Preserve profits in the short term
Avoid overfishing	5 4 3 2 1 2 3 4 5	Preserve profits in the long term
Preserve fishing yield	5 4 3 2 1 2 3 4 5	Reduce unwanted catches
Preserve fishing yield	5 4 3 2 1 2 3 4 5	Preserve job salaries
Preserve fishing yield	5 4 3 2 1 2 3 4 5	Preserve employment
Preserve fishing yield	5 4 3 2 1 2 3 4 5	Preserve profits in the short term
Preserve fishing yield	5 4 3 2 1 2 3 4 5	Preserve profits in the long term
Reduce unwanted catches	5 4 3 2 1 2 3 4 5	Preserve job salaries
Reduce unwanted catches	5 4 3 2 1 2 3 4 5	Preserve employment
Reduce unwanted catches	5 4 3 2 1 2 3 4 5	Preserve profits in the short term
Reduce unwanted catches	5 4 3 2 1 2 3 4 5	Preserve profits in the long term
Preserve job salaries	5 4 3 2 1 2 3 4 5	Preserve employment
Preserve job salaries	5 4 3 2 1 2 3 4 5	Preserve profits in the short term
Preserve job salaries	5 4 3 2 1 2 3 4 5	Preserve profits in the long term
Preserve employment	5 4 3 2 1 2 3 4 5	Preserve profits in the short term
Preserve employment	5 4 3 2 1 2 3 4 5	Preserve profits in the long term
Preserve profits in the short term	5 4 3 2 1 2 3 4 5	Preserve profits in the long term

PARTICIPATIVNI PROCES DIONIKA

Za održivi razvoj ribarskog sektora od ključne je važnosti participativno upravljanje.
Osnova za prikupljanje podataka je upitnik kojemu je cilj otkriti koliku važnost dionici daju gospodarskim, socijalnim i biološkim čimbenicima koji utječu na ribolov. Bodovna tablica koristi se za klasifikaciju važnosti pridane određenom cilju.
Cilj je održivost ribolova s gospodarskog, biološkog i socijalnog gledišta.

Bodovna tablica

Relativna važnost	**Bodovi**
Jednako važno	1
Malo važnije	2
Umjereno važnije	3
Važnije	4
Iznimno važnije	5

Primjer usporedbe ciljeva

- Koji je od sljedećih ciljeva prikladniji za postizanje cilja?
- Označite broj na lijevoj ili desnoj strani ovisno o tome koji cilj smatrate važnijim.

Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Izbjeći prelov
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Očuvati ribolovne ulove
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Smanjiti neželjeni ulov

UPITNIK

Ispitanici	
Državljanstvo: talijansko	☐
Državljanstvo: hrvatsko	☐
Državljanstvo: slovensko	☐
Državljanstvo: ostalo (navesti)	
Ribar: mali priobalni ribolov	☐
Ribar: povlačne mreže (koće)	☐
Ribar: plivarice/ pelagijske povlačne mreže	☐
Ribar: parangal	☐
Ribarska udruga /zadruga	☐
Nevladina organizacija (NGO)	☐
Javna uprava	☐
Istraživač	☐
Ostalo (navesti)	

Usporedba parova

Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Izbjeći prelov
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Očuvati ulove
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Smanjiti neželjeni ulov
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Očuvati plaće
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Očuvati radna mjesta
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Očuvati kratkoročnu dobit
Očuvati sigurne razine reproduktivnog potencijala	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit
Izbjeći prelov	5 4 3 2 1 2 3 4 5	Očuvati ribolovne ulove
Izbjeći prelov	5 4 3 2 1 2 3 4 5	Smanjiti neželjeni ulov
Izbjeći prelov	5 4 3 2 1 2 3 4 5	Očuvati plaće
Izbjeći prelov	5 4 3 2 1 2 3 4 5	Očuvati radno mjesto
Izbjeći prelov	5 4 3 2 1 2 3 4 5	Očuvati kratkoročnu dobit
Izbjeći prelov	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit
Očuvati ribolovne ulove	5 4 3 2 1 2 3 4 5	Smanjiti neželjeni ulov
Očuvati ribolovne ulove	5 4 3 2 1 2 3 4 5	Očuvati plaće
Očuvati ribolovne ulove	5 4 3 2 1 2 3 4 5	Očuvati radno mjesto
Očuvati ribolovne ulove	5 4 3 2 1 2 3 4 5	Očuvati kratkoročnu dobit
Očuvati ribolovne ulove	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit
Smanjiti neželjeni ulov	5 4 3 2 1 2 3 4 5	Očuvati plaće
Smanjiti neželjeni ulov	5 4 3 2 1 2 3 4 5	Očuvati radno mjesto
Smanjiti neželjeni ulov	5 4 3 2 1 2 3 4 5	Očuvati kratkoročnu dobit
Smanjiti neželjeni ulov	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit
Očuvati plaće	5 4 3 2 1 2 3 4 5	Očuvati radno mjesto
Očuvati plaće	5 4 3 2 1 2 3 4 5	Očuvati kratkoročnu dobit
Očuvati plaće	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit
Očuvati radno mjesto	5 4 3 2 1 2 3 4 5	Očuvati kratkoročnu dobit
Očuvati radno mjesto	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit
Očuvati kratkoročnu dobit	5 4 3 2 1 2 3 4 5	Očuvati dugoročnu dobit

PROCESSO PARTECIPATO DEGLI STAKEHOLDER

La gestione partecipata rappresenta un approccio di fondamentale importanza per affrontare lo sviluppo sostenibile del settore della pesca.

Questa raccolta di informazioni è basata su un questionario finalizzato a capire come gli stakeholder classifichino l'importanza dei fattori economici, sociali e biologici che influiscono sulla pesca. La tabella del punteggio deve essere utilizzata per la classificazione delle preferenze.

L'obiettivo è la sostenibilità della pesca da un punto di vista economico, biologico e sociale.

Tabella dei punteggi

Importanza relativa	**Punteggio**
Ugualmente importante	1
Leggermente più importante	2
Moderatamente più importante	3
Più importante	4
Estremamente più importante	5

Esempio di compilazione del confronto a coppie

- Quale dei seguenti obiettivi è più appropriato per raggiungere l'obbiettivo?
- Spuntare I numeri sulla sinistra o sulla destra per indicare la scelta tra la coppia di obiettivi.

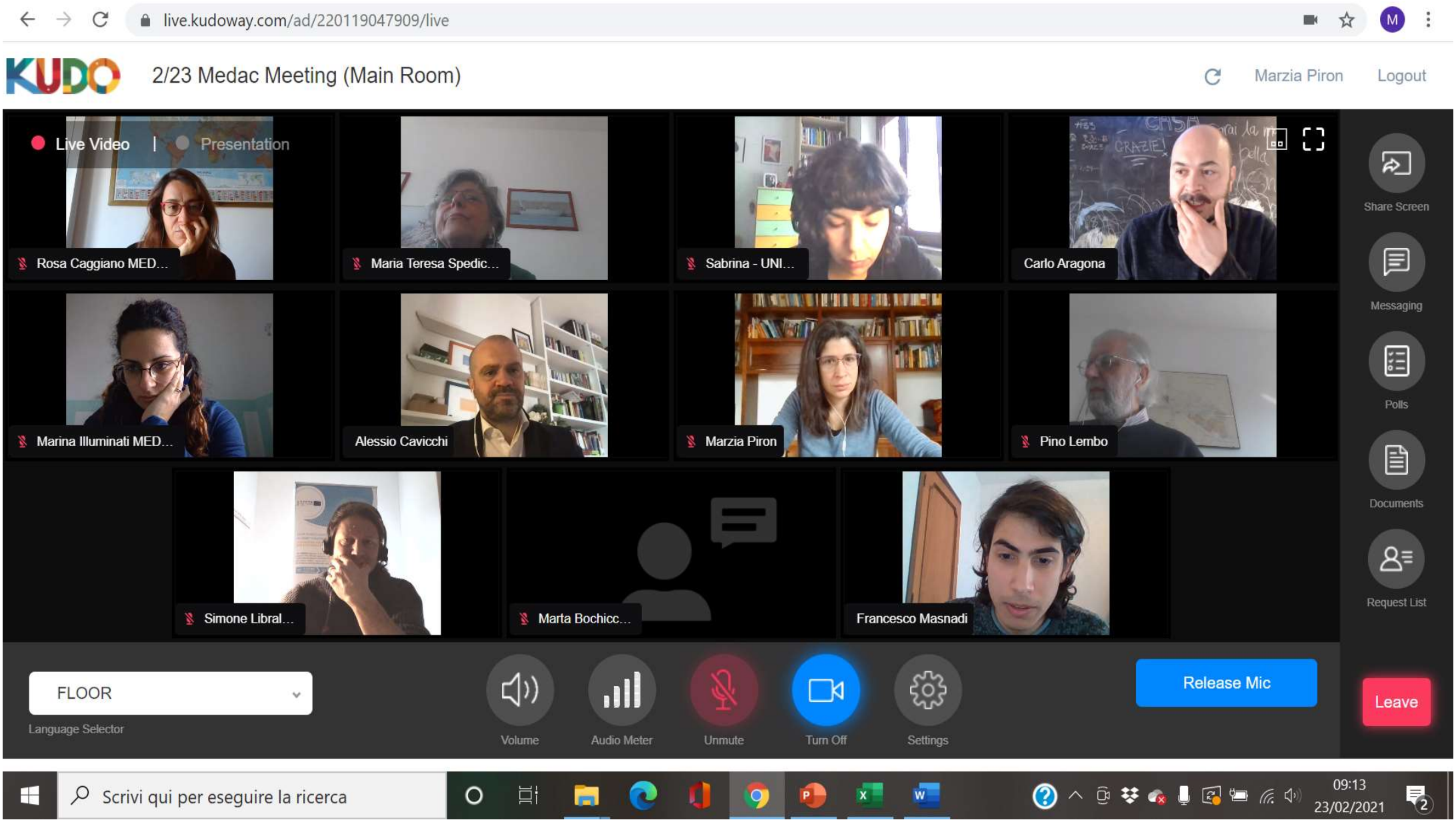
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Evitare la sovrapesca
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Preservare le catture di pesca
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Ridurre le catture non volute

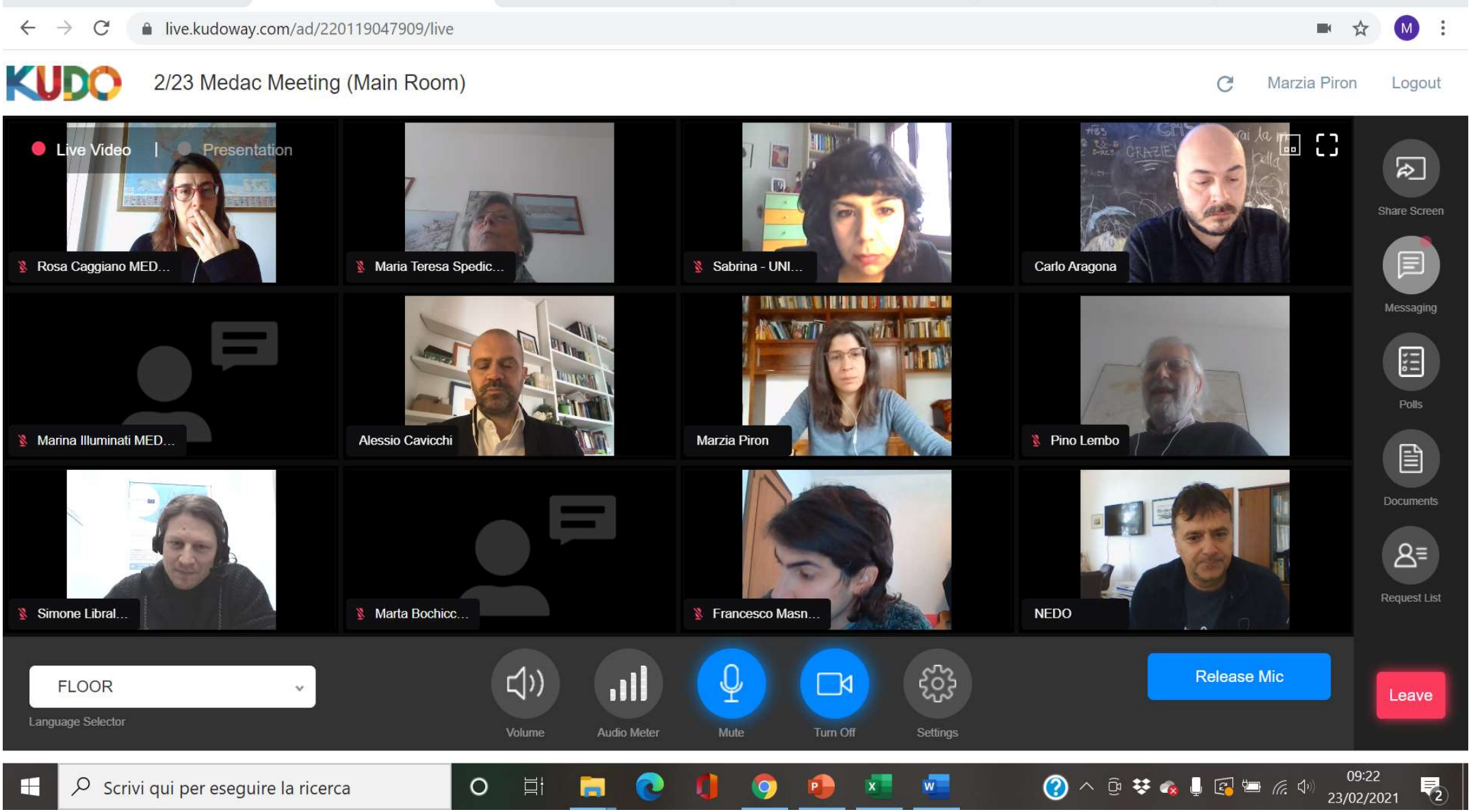
QUESTIONARIO

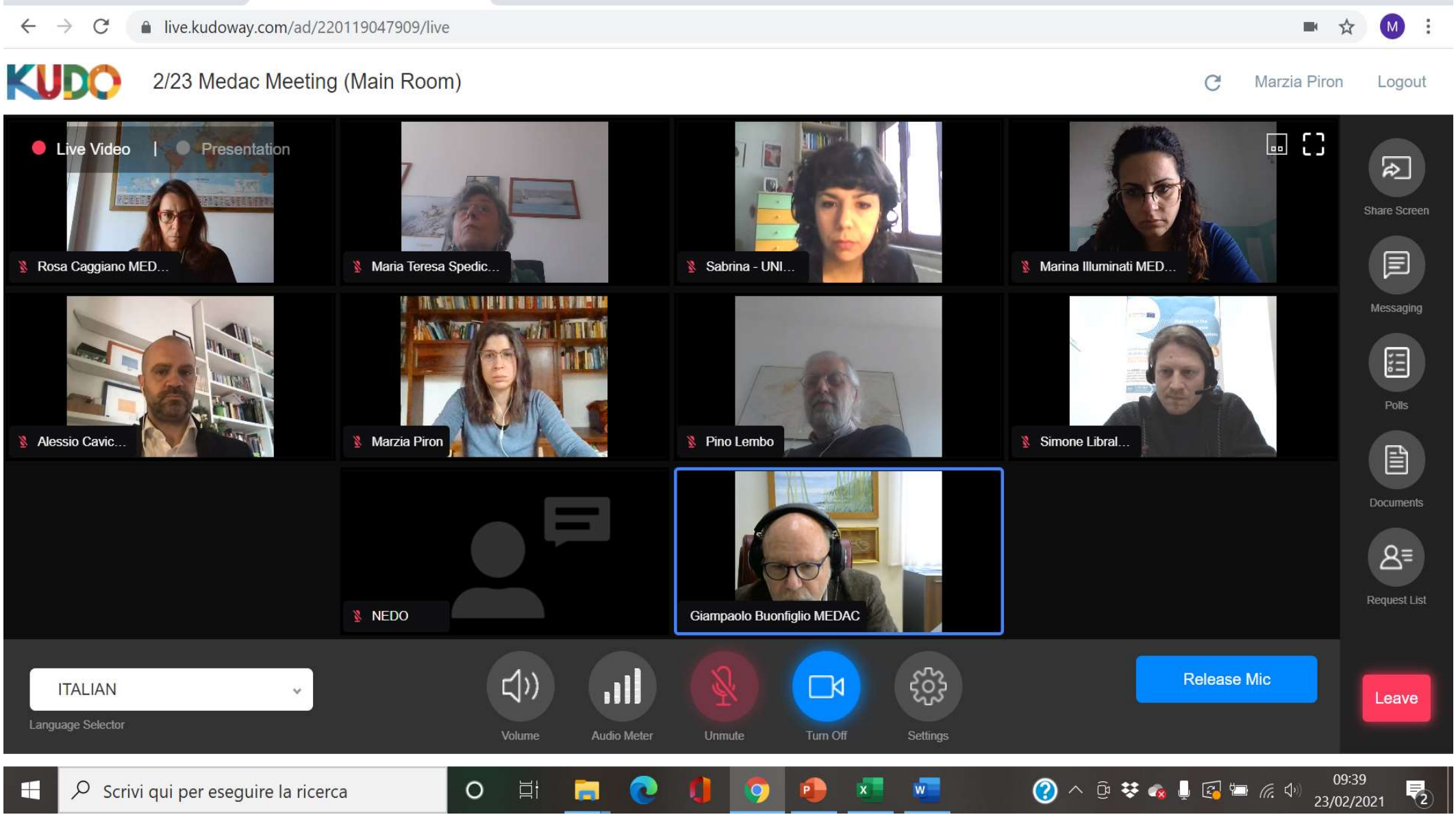
Partecipanti all'indagine	
Cittadinanza: Italiana	☐
Cittadinanza: Croata	☐
Cittadinanza: Slovena	☐
Cittadinanza: Altro (specificare)	
Pescatore: Piccola pesca	☐
Pescatore: Pesca a strascico	☐
Pescatore: Cianciolo/Volante	☐
Pescatore: Palangaro	☐
Associazione Pescatori/Cooperative	☐
ONG	☐
Pubblica Amministrazione	☐
Ricercatore	☐
Altro (specificare)	

Pairwise comparisons

Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Evitare la sovrapesca
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Preservare le catture di pesca
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Ridurre le catture non volute
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Preservare gli stipendi
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Preservare l'impiego
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Preservare i profitti nel breve termine
Preservare livelli sicuri del potenziale riproduttivo	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine
Evitare la sovrapesca	5 4 3 2 1 2 3 4 5	Preservare le catture di pesca
Evitare la sovrapesca	5 4 3 2 1 2 3 4 5	Ridurre le catture non volute
Evitare la sovrapesca	5 4 3 2 1 2 3 4 5	Preservare gli stipendi
Evitare la sovrapesca	5 4 3 2 1 2 3 4 5	Preservare l'impiego
Evitare la sovrapesca	5 4 3 2 1 2 3 4 5	Preservare i profitti nel breve termine
Evitare la sovrapesca	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine
Preservare le catture di pesca	5 4 3 2 1 2 3 4 5	Ridurre le catture non volute
Preservare le catture di pesca	5 4 3 2 1 2 3 4 5	Preservare gli stipendi
Preservare le catture di pesca	5 4 3 2 1 2 3 4 5	Preservare l'impiego
Preservare le catture di pesca	5 4 3 2 1 2 3 4 5	Preservare i profitti nel breve termine
Preservare le catture di pesca	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine
Ridurre le catture non volute	5 4 3 2 1 2 3 4 5	Preservare gli stipendi
Ridurre le catture non volute	5 4 3 2 1 2 3 4 5	Preservare l'impiego
Ridurre le catture non volute	5 4 3 2 1 2 3 4 5	Preservare i profitti nel breve termine
Ridurre le catture non volute	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine
Preservare gli stipendi	5 4 3 2 1 2 3 4 5	Preservare l'impiego
Preservare gli stipendi	5 4 3 2 1 2 3 4 5	Preservare i profitti nel breve termine
Preservare gli stipendi	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine
Preservare l'impiego	5 4 3 2 1 2 3 4 5	Preservare i profitti nel breve termine
Preservare l'impiego	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine
Preservare i profitti nel breve termine	5 4 3 2 1 2 3 4 5	Preservare i profitti nel lungo termine


live.kudoway.com/ad/220119047909/live
KUDO
2/23 Medac Meeting (Main Room)
Marzia Piron
Logout
Live Video | Presentation
Rosa Caggiano MED...
Maria Teresa Spedic...
Sabrina - UNI...
Carlo Aragona
Marina Illuminati MED...
Alessio Cavicchi
Marzia Piron
Pino Lembo
Simone Libral...
Marta Bochicc...
Francesco Masnadi
Share Screen
Messaging
Polls
Documents
Request List
FLOOR
Language Selector
Volume
Audio Meter
Unmute
Turn Off
Settings
Release Mic
Leave
Scrivi qui per eseguire la ricerca
09:13
23/02/2021


live.kudoway.com/ad/220119047909/live
KUDO
2/23 Medac Meeting (Main Room)
Marzia Piron
Logout
Live Video | Presentation
Rosa Caggiano MED...
Maria Teresa Spedic...
Sabrina - UNI...
Carlo Aragona
Marina Illuminati MED...
Alessio Cavicchi
Marzia Piron
Pino Lembo
Simone Libral...
Marta Bochicc...
Francesco Masn...
NEDO
Share Screen
Messaging
Polls
Documents
Request List
FLOOR
Language Selector
Volume
Audio Meter
Mute
Turn Off
Settings
Release Mic
Leave
Scrivi qui per eseguire la ricerca
09:22
23/02/2021


live.kudoway.com/ad/220119047909/live
KUDO
2/23 Medac Meeting (Main Room)
Marzia Piron
Logout
Live Video | Presentation
Rosa Caggiano MED...
Maria Teresa Spedic...
Sabrina - UNI...
Marina Illuminati MED...
Alessio Cavic...
Marzia Piron
Pino Lembo
Simone Libral...
NEDO
Giampaolo Buonfiglio MEDAC
Share Screen
Messaging
Polls
Documents
Request List
Leave
ITALIAN
Language Selector
Volume
Audio Meter
Unmute
Turn Off
Settings
Release Mic
Scrivi qui per eseguire la ricerca
09:39
23/02/2021

live.kudoway.com/ad/220119047909/live

KUDO 2/23 Medac Meeting (Main Room) Marzia Piron Logout

Live Video | Presentation

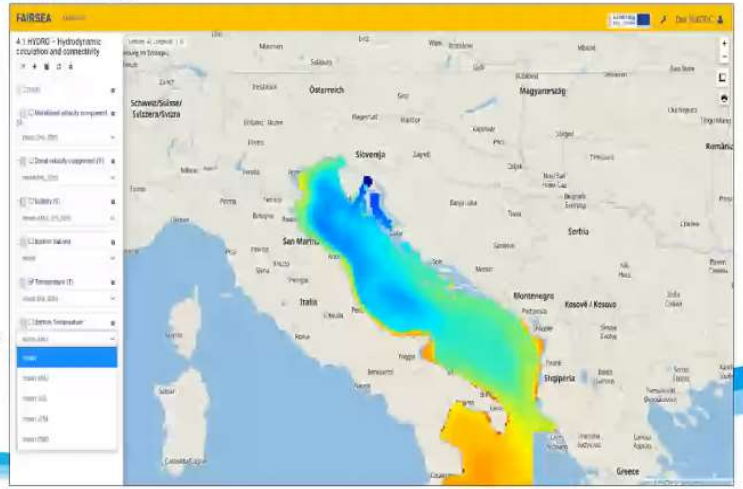
WP4 - The innovation approach of the FAIRSEA platform

HYDRO – Hydrodynamic circulation and connectivity

This module contains the description of the physical properties of the Adriatic and Ionian basins provided by a multidecadal reanalysis of the Mediterranean Sea for the past 20 years.
(CMEMS data, http://marine.copernicus.eu/).

The variables selected for the period 1999-2018 are:

- **Temperature**
- **Bottom Temperature**
- **Salinity**
- **Currents** (meridional and zonal component used as a proxy of the connectivity)



Interreg Italy - Croatia FAIRSEA EUROPEAN UNION

live.kudoway.com sta condividendo il tuo schermo. Interrompi condivisione Nascondi

CNR IRBIM

4

Francesco Masnadi

Share Screen
Messaging
Polls
Documents
Request List

ITALIAN
Language Selector

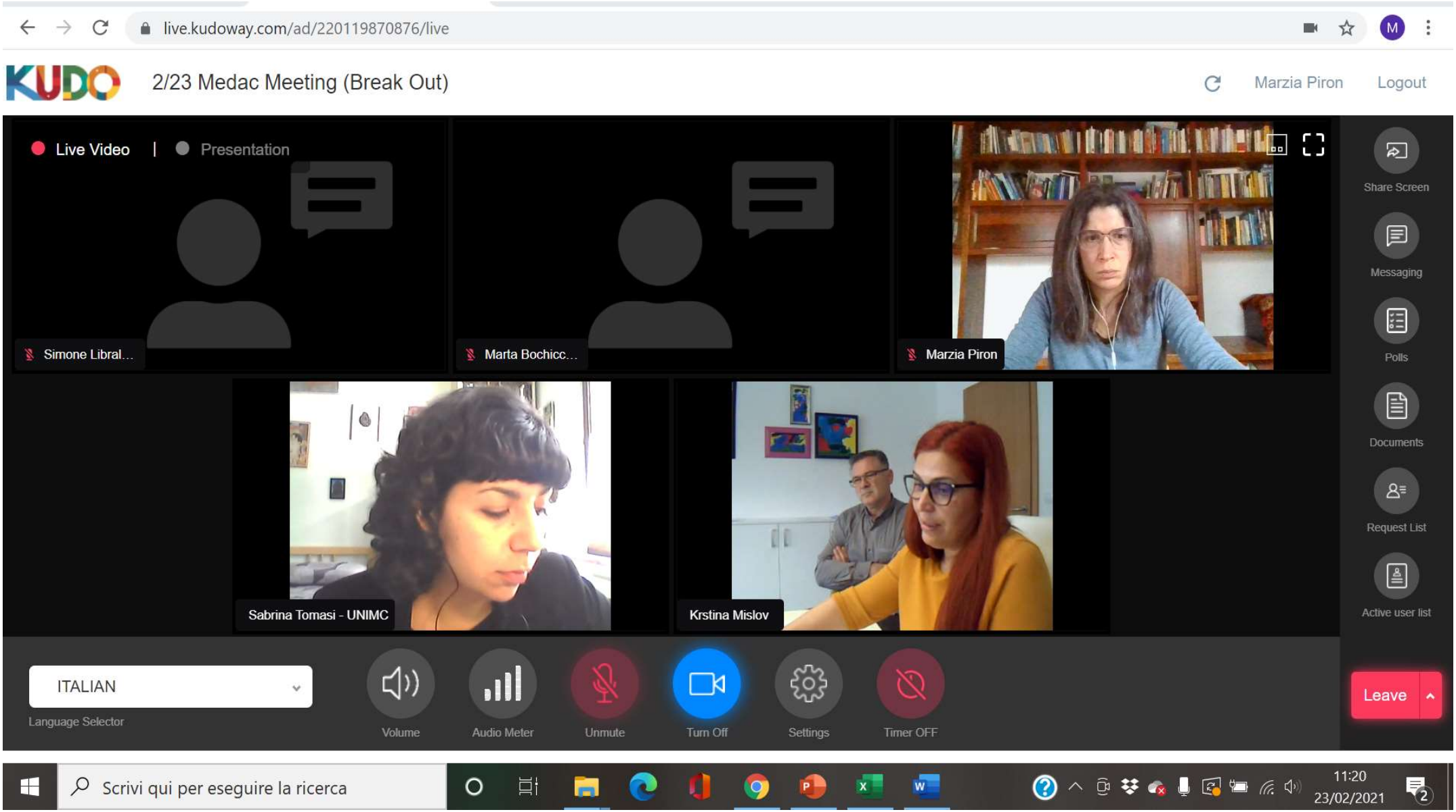
Volume Audio Meter Unmute Turn Off Settings

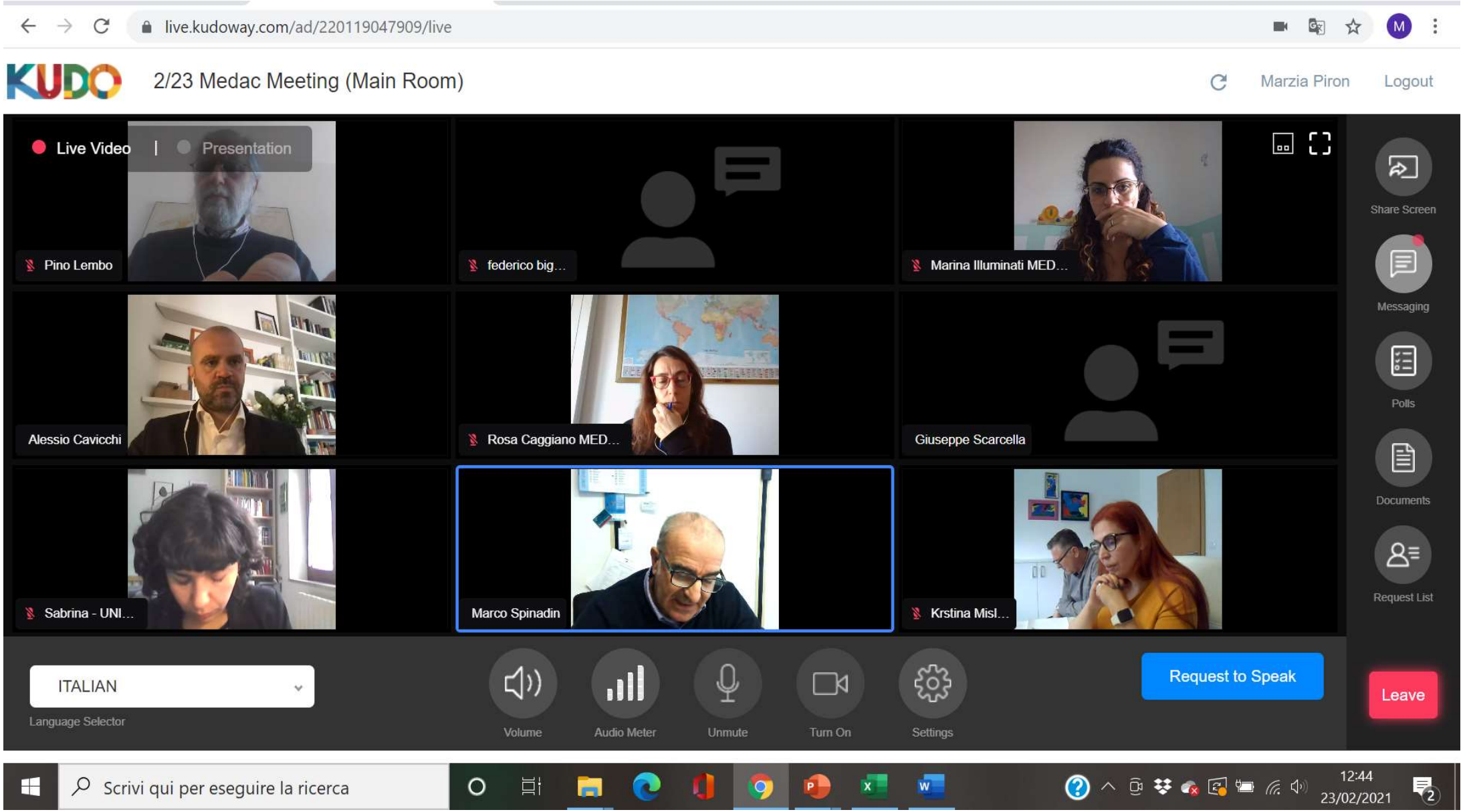
Release Mic

Leave

Scrivi qui per eseguire la ricerca

10:10
23/02/2021


live.kudoway.com/ad/220119870876/live
KUDO
2/23 Medac Meeting (Break Out)
Marzia Piron
Logout
Live Video
Presentation
Simone Libral...
Marta Bochicc...
Marzia Piron
Sabrina Tomasi - UNIMC
Krstina Mislov
Share Screen
Messaging
Polls
Documents
Request List
Active user list
ITALIAN
Language Selector
Volume
Audio Meter
Unmute
Turn Off
Settings
Timer OFF
Leave
Scrivi qui per eseguire la ricerca
11:20
23/02/2021


live.kudoway.com/ad/220119047909/live
KUDO
2/23 Medac Meeting (Main Room)
Marzia Piron
Logout
Live Video
Presentation
Pino Lembo
federico big...
Marina Illuminati MED...
Alessio Cavicchi
Rosa Caggiano MED...
Giuseppe Scarcella
Sabrina - UNI...
Marco Spinadin
Krstina Misl...
Share Screen
Messaging
Polls
Documents
Request List
ITALIAN
Language Selector
Volume
Audio Meter
Unmute
Turn On
Settings
Request to Speak
Leave
Scrivi qui per eseguire la ricerca
12:44
23/02/2021

live.kudoway.com/ad/220111304558/live

KUDO 2/24 Medac Meeting (Main Room) Marzia Piron Logout

Live Video | Presentation

Activity 5.2. Pilot actions: identification of conflicts and possible solutions

THE DATA

- The data used for pilot actions was collected by IOF, Split
- The data was collected for the INTERREG project Ariel (ARIEL overall objective is to promote technological and non-technological solutions for innovation up take of small-scale fishery and aquaculture in Adriatic-Ionian basin)
- during the period from June 2018 to December 2019, in fishing area A1 (around Salvore and Umago)
- The catch and discard by 15 fishermen was analyzed in detail, two mash sizes were used

Interreg Italy - Croatia FAIRSEA EUROPEAN UNION

live.kudoway.com dijeli vaš zaslon. Zaustavi dijeljenje Sakrij preglednik

Danijela MPS

Share Screen
Messaging
Polls
Documents
Request List
Active user list

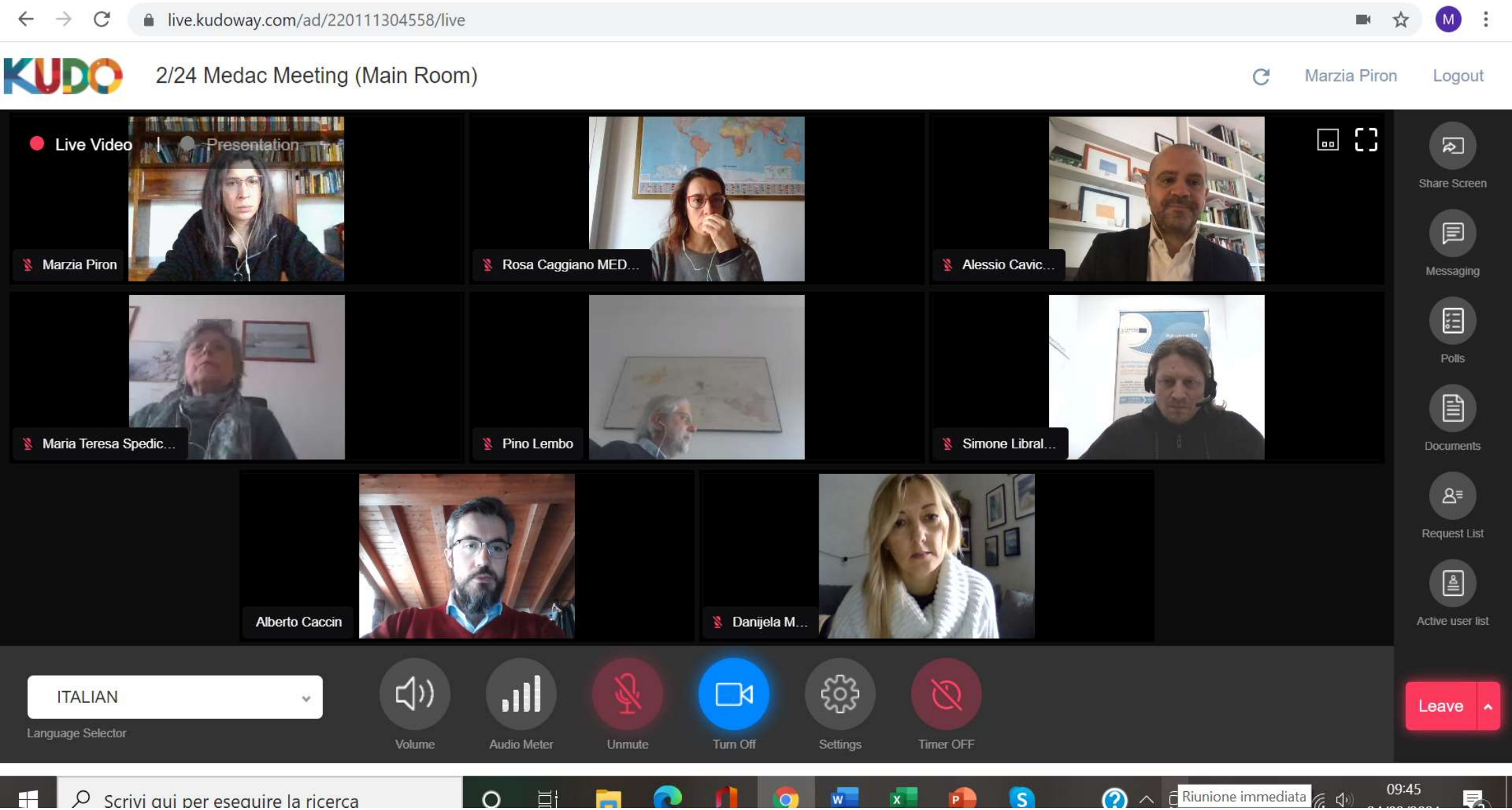
ITALIAN
Language Selector

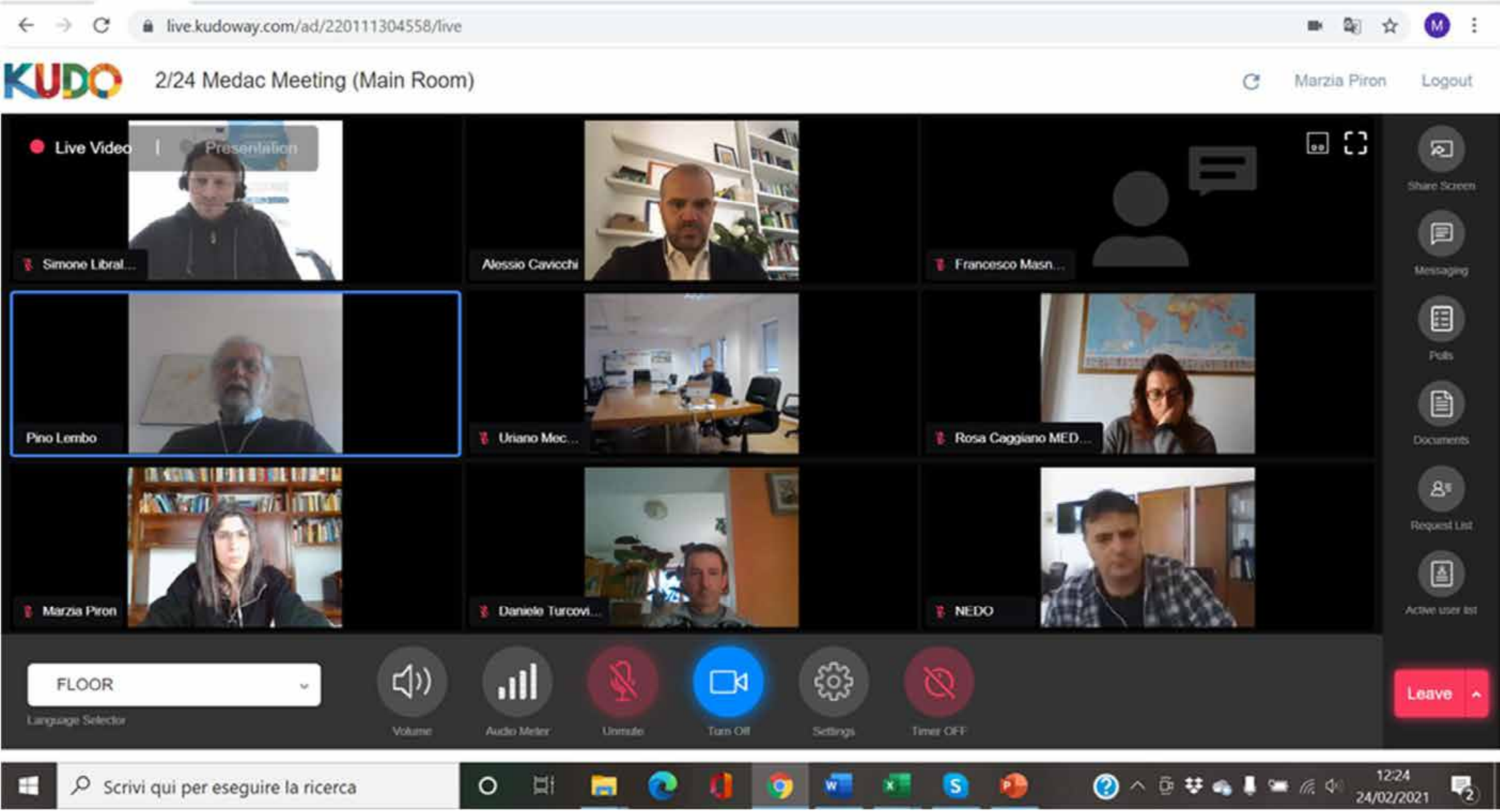
Volume | Audio Meter | Unmute | Turn Off | Settings | Timer OFF

Leave

Scrivi qui per eseguire la ricerca

09:43
24/02/2021


live.kudoway.com/ad/220111304558/live
KUDO
2/24 Medac Meeting (Main Room)
Marzia Piron
Logout
Live Video
Presentation
Marzia Piron
Rosa Caggiano MED...
Alessio Cavic...
Maria Teresa Spedic...
Pino Lembo
Simone Libral...
Alberto Caccin
Danijela M...
Share Screen
Messaging
Polls
Documents
Request List
Active user list
ITALIAN
Language Selector
Volume
Audio Meter
Unmute
Turn Off
Settings
Timer OFF
Leave
Scrivi qui per eseguire la ricerca
Riunione immediata
09:45


live.kudoway.com/ad/220111304558/live
KUDO
2/24 Medac Meeting (Main Room)
Marzia Piron
Logout
Live Video
Presentation
Simone Libral...
Alessio Cavicchi
Francesco Masn...
Pino Lembo
Uriano Mec...
Rosa Caggiano MED...
Marzia Piron
Daniele Turcovi...
NEDO
Share Screen
Messaging
Polls
Documents
Request List
Active user list
FLOOR
Language Selector
Volume
Audio Meter
Unmute
Turn Off
Settings
Timer OFF
Leave
Scrivi qui per eseguire la ricerca
12:24
24/02/2021