

# FAIRSEA (ID 10046951)

## “Fisheries in the Adriatic Region - a Shared Ecosystem Approach”

### D 2.2.3 – Webinar

<b>Work Package:</b>	WP2 – Communication activities  Activity 2.2 – Digital activities
<b>Type of Document</b>	Webinar organized on the topic of Ecosystem Based Approach to Fisheries organized by PP during the entire duration of the project.
<b>Use</b>	Public
<b>Responsible PP</b>	PP1, IOF
<b>Authors</b>	Nedo Vrgoč, Phd - Katarina Bozanic Svilicic, PP7 – IOF; Francesca Petrera – Simone Libralato, OGS
<b>Version and date</b>	Final Version, December 2021

# Deliverable 2.2.3

## Webinars

### **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*

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## Acronyms used

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

## INTRODUCTION

The FAIRSEA project (Fisheries in the Adriatic Region – a Shared Ecosystem Approach) aims at enhancing transnational capacity and cooperation in the field of an ecosystem approach to fisheries (EAF) in the Adriatic region by exchanging knowledge and sharing good practices among partners. The complementary expertise of the partners is shared, interlinked and integrated, considering also challenges and opportunities identified by stakeholders.

Communication to general public and stakeholders is crucial for the effective dissemination of the importance of ecosystem approach and its effect on the society at large.

### About FAIRSEA Project

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 in conformity with the Common Fisheries Policy (CFP). 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 and might require patent.

Overall objective will be achieved through three specific objectives as in the following.

### Project specific objectives

- Enhance trans boundary integrated competence in the field of ecosystem approach to fisheries
- Implement a shared “state of the art” integrated platform for the region
- Share benefits and challenges of ecosystem approach to facilitate the achievement of CFP objectives.

## FAIRSEA WEBINARS

A series of webinars have been run underlining the principles of EAF, introducing different aspects related to the project and illustrating the integrated tool (theory and application).

FAIRSEA activities and principles of EAF have been presented during 3 webinars: 2 during RP3 and 1 during RP4.

### COISPA webinar in AdriaMed meeting

A Webinar was organized by COISPA as part of AdriaMed meeting and the FAIRSEA project was presented to the participants of the meeting. The topic of the webinar was - The standardization of trawl survey data. The webinar was organized using Skype tool.


The webinar was organized in the context of the Working Group of Demersal of Adriamed. It was planned for the day 28 May 2020 and held by Isabella Bitetto (COISPA).

The webinar consisted in a presentation from the title:

Roadmap to *Mullus barbatus*.

Authors: Bitetto I., Zupa W., Angelini S., Santojanni A., Panfili M., Piccinetti C., Manfredic., Isajlovičl., Vrgoc N., Ikica, Z., Joksimovic A., A. Palluqui, M. Kule, Carbonara P., Casciaro, L., Ceriola L., Milone N., Libralato S., Panzeri D., Lembo, G., Spedicato M.T.

**Training/testing**



A technique of model calibration and validation, based on algorithms that can learn from and make predictions on data. Such algorithms work by making data-driven predictions or decisions, through building a mathematical model from input data.

**Models explored with training/testing approach**

- Delta-GAM: the predictions of the two models will be combined together
  - Binomial model (Delta-binomial) of presence/absence (PA)
  - Gaussian model (Delta-gaussian) (applied only on the positive observations; response variable log-transformed:  $\log(N_{km})$ )
- Gaussian (applied on the complete dataset; response variable log-transformed);
- Tweedie

**Formulas explored (example for delta presence/absence)**

Formula 1:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

Formula 2:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

Formula 3:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

Formula 4:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

Formula 5:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

Formula 6:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

Formula 7:  $\mu = \text{logit}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$

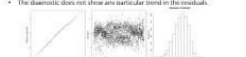
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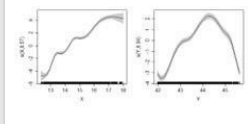
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**RESULTS**  
Standardization of abundance indices GSA 17 (WGSAD 2015)

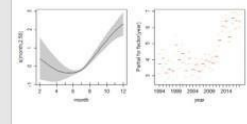
- The Variance Inflation Factor (VIF) of all the variables is smaller than 3 (Zuur, 2002)
- The variables to be retained were chosen according to the Pearson's correlation.
- For the  $N_{km}^2$  the best model is characterized by a gaussian distribution and was estimated applying a logarithm transformation to the data by hand:  $\log(N_{km}^2) = \text{Reaction}(\text{depth}) + \text{Age} + \text{Sex} + \text{Month} + \text{Year}$ ,  $\text{log}(\text{prob}) = \beta_0 + \beta_1 \text{depth} + \beta_2 \text{depth}^2 + \beta_3 \text{depth}^3 + \beta_4 \text{depth}^4 + \beta_5 \text{depth}^5 + \beta_6 \text{depth}^6 + \beta_7 \text{depth}^7 + \beta_8 \text{depth}^8 + \beta_9 \text{depth}^9 + \beta_{10} \text{depth}^{10} + \beta_{11} \text{depth}^{11} + \beta_{12} \text{depth}^{12} + \beta_{13} \text{depth}^{13} + \beta_{14} \text{depth}^{14} + \beta_{15} \text{depth}^{15} + \beta_{16} \text{depth}^{16} + \beta_{17} \text{depth}^{17} + \beta_{18} \text{depth}^{18} + \beta_{19} \text{depth}^{19} + \beta_{20} \text{depth}^{20}$
- The diagnostic does not show any particular trend in the residuals.



**RESULTS**  
Standardization of abundance indices GSA 17



**RESULTS**  
Standardization of abundance indices GSA 17




34


35

36

**MEDITS INDICES STANDARDIZATION**



**New developments of the methodology for indices standardization**

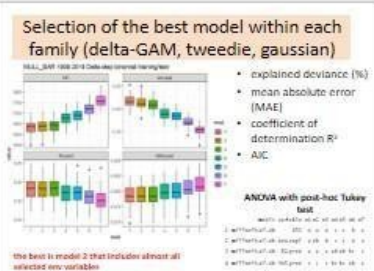


- Inclusion of environmental variables;
- Exploratory analysis with VIF for avoiding redundancy among the explanatory variables;
- GAM modelling of density indices using backward stepwise selection;
- Training/test approach (70% 30% resp.; 50 runs);
- Delta, tweedie, gaussian model explored;
- Selection of the best according to explained deviance (%), mean absolute error (MAE), coefficient of determination  $R^2$  and root mean square error (RMSE).

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26

**Selection of the best model within each family (delta-GAM, tweedie, gaussian)**



- explained deviance (%)
- mean absolute error (MAE)
- coefficient of determination  $R^2$
- AUC

ANOVA with post-hoc Tukey test

the best is model 2 that includes almost all selected env. variables

**Selection of the best model among the best of each family**

- At the end of training/testing, the best model for each family is selected;
- Among these three, the best is selected according to MAE,  $R^2$  and RMSE

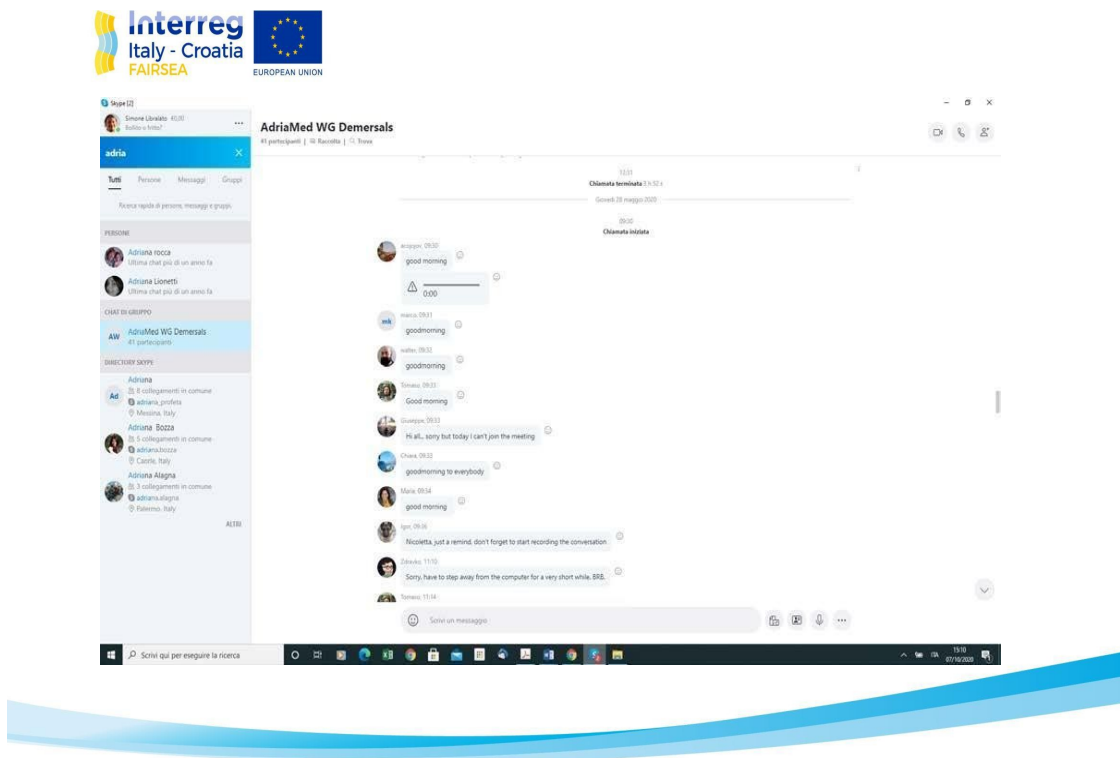
	MAE	$R^2$	RMSE
DELTA	1155.919	0.245347	2840.342
TW	2502.737	0.322756	7496.97
GAUSS	1865.732	0.122043	8836.451

31

32

17 participants followed the webinar

OMISSIS - List of participants



European Regional Development Fund

The presentation given by Isabella Bitetto concerned the work carried out in the framework of the Module BSTAT of the WP4 of FAIRSEA. In particular was deeply discussed the procedure developed and considered useful for future analysis of trawl survey data.

The group of people present at the meeting was very active in posing questions and provided arguments of discussion in order to understand the improvements gained with the approach proposed.



## IOF project team Second webinar on the topic of EAF

The Second webinar was organized by IOF (Split) for the students from University Department of Marine Studies in Split



The poster features a blue background with a white dotted pattern. At the top left, there are logos for Interreg FAIRSEA and the European Union. A large blue circle on the right contains the word 'WEBINAR' and a yellow sailboat icon. Below the logos, the text reads: 'Institut za oceanografiju i ribarstvo', 'Projekt FAIRSEA sufinanciran je sredstvima programa Interreg Italija Hrvatska 2014-2020.', 'Pozivamo da sudjelujete u:', 'Webinaru "Ekosistemski pristup u ribarstvu"', 'KADA: 05.12.2019. U 9:00 SATI', 'PUTEM SKYPE-a', 'Link: nedovrgoc', and 'OPIS WEBINARA: prof.dr.sc. Nedo Vrgoč sa Instituta za oceanografiju i ribarstvo održati će predavanje na temu ekosistemskog pristupa u ribarstvu s posebnim osvrtom na projekt FAIRSEA.' At the bottom, there is a navigation bar with 'Page 1 / 1' and a search icon.

**Interreg**  
FAIRSEA

**WEBINAR**

**Institut za oceanografiju i ribarstvo**

Projekt FAIRSEA sufinanciran je sredstvima programa Interreg Italija Hrvatska 2014-2020.

Pozivamo da sudjelujete u:

**Webinaru "Ekosistemski pristup u ribarstvu"**

**KADA:**  
05.12.2019. U 9:00 SATI

**PUTEM SKYPE-a**  
Link: nedovrgoc

**OPIS WEBINARA:** prof.dr.sc. Nedo Vrgoč sa Instituta za oceanografiju i ribarstvo održati će predavanje na temu ekosistemskog pristupa u ribarstvu s posebnim osvrtom na projekt FAIRSEA.

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The aim of the webinar was to present the FAIRSEA project to all participants. The topic of the webinar was „Ecosystem approach in fisheries“ with special reference to the FAIRSEA project . The webinar was organized using Skype tool.

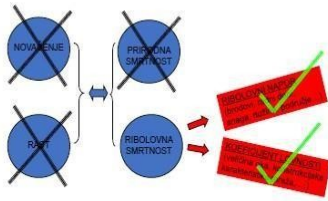
It was planned for the day 05. December 2020 and held by Nedo Vrgoč (Institute for Oceanography and fisheries).

The topic of the webinar was to show the possibilities of regulating population dynamics, how to reduce the cost of fishing and how to show the vicious circle of irrational exploitation. The indirect effects of fishing and the impact on the ecosystem were also discussed.

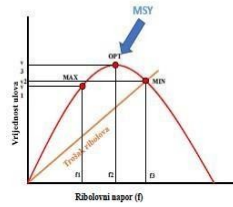
On this webinar participants were from different target groups:

- Splitsko dalmatinska county- TG 2 (Local, regional and national public authorities)
- Zadarska county - TG 2 (Local, regional and national public authorities)
- Zadra Nova – TG 3 (Regional and local development agencies, chambers of commerce and other business support organizations)
- FLAG Škoji – TG 6 (NGOs, associations, innovation agencies, business incubators, cluster management bodies and network)
- Association „20000 milja pod morem“ – TG 6 (NGOs, associations, innovation agencies, business incubators, cluster management bodies and network)
- Natural museum of Split – TG 7 (Education and training organisations as well as social partners and labor-market institutions)
- PMF Split (Education and training organisations as well as social partners and labor-market institutions)

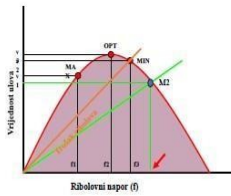
Mogućnosti reguliranja dinamike populacija



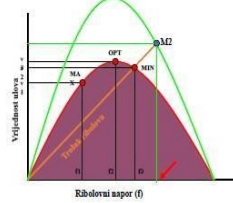
JEDNOSTAVNI EKONOMSKI MODEL RIBOLOVA



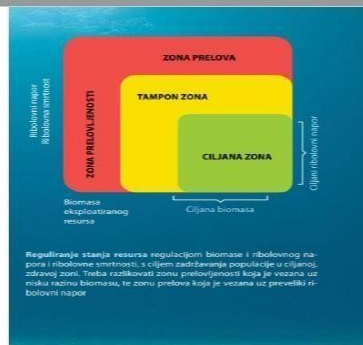
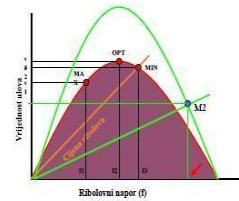
UČINAK SMANJENJA TROŠKA RIBOLOVA



UČINAK POVEĆANJA CIJENE RIBE



UČINAK ISTOVREMENOG SMANJENJA TROŠKOVA RIBOLOVA I POVEĆANJA CIJENE RIBE



### INDIREKTI UČINCI RIBOLOVA

**PRILIV I ODBAČNI LEĐI**

**BIOLOŠKO DELOVANJE**

- Pijen predator
- konkurencija
- Promjena fiziološkog stanja
- Imunna struktura i funkcije ekosistema

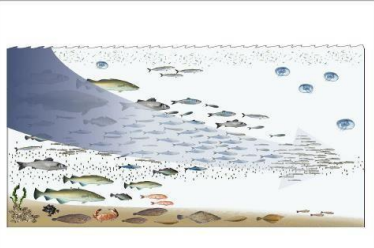
**IZMENA STRUKTURE I FUNKCIJE SEDIMENTA**

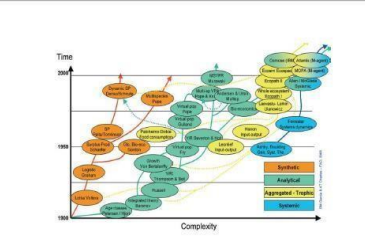
**PROMENA U UMREŽENJE STANIŠTA**

**GHOT FISHING**

### INDICES OF ECOSYSTEM HEALTH

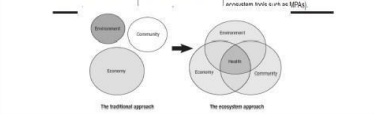
Year	1990	1995	2000	2005	2010	2015	2020
Indicator 1	100	95	90	85	80	75	70
Indicator 2	100	95	90	85	80	75	70
Indicator 3	100	95	90	85	80	75	70
Indicator 4	100	95	90	85	80	75	70





### Ekosustavni pristup u ribarstvu


	Conventional fisheries management	Ecosystem approach to fisheries
Species considered	Target species	All species in ecosystem, particularly those impacted by fishing
Assessment method	Stock assessments	Multiproxy assessments/indicators
Management objectives	Mainly biological	Ecological, economic and social
Policy and decision-making	Largely government	Participatory with major stakeholders
Management intervention	Mainly control of fishing	Broad-based incentives (including avoidance, trade, etc. on MSC)



### Ključni principi EAF

1. Dobra upravljanje
2. Održivost i zdravica cijevu
3. Doprinosi participacije
4. Više ciljeva
5. Suradnja i koordinacija
6. Prilagodljivo upravljanje
7. Pristup proizvodnosti

### Primjer međusobna različitih čimbenika u ekosustavnom pristupu u ribarstvu



### FAIRSEA THE PLATFORM

Integrating processes (not only layers)

- HYDRO: water circulation & connectivity
- BIO: biogeochemical & population processes
- SPAT: distribution of resources
- PROF: catches and fleet dynamics
- ECON: spatial distribution and dynamics
- BIOECO: bio-economic responses
- PLAT: food web dynamics

**FAIRSEA**  
 Institut za oceanografiju i ribarstvo Split  
 Prof.dr.sc. Nedo Virgoć

Name and short description of the event	Date of event	Place of the event	Country	Agenda (to be attached in pdf or docx file)	Participant list (to be attached in pdf or docx file)	Photos (to be attached in pdf or docx file)	Other materials (presentations; videos; audio; etc) please specify	Participant name (if general public write "General Public")	Institution name (duplicated or FAIRSEA Partners should be highlighted in yellow)	Targetgroup	General Public	Local, regional and national public authorities	Regional and local development agencies, chambers of commerce and other business support organizations	SMEs	Universities, technology transfer institutions, research institutions	NGOs, associations, innovation agencies, business incubators, cluster management bodies and networks	Education and training organisations as well as social partners and labor-market institutions
A project Webinar was organized in December 2019 by IOF where NedoVrgoc, Phd presented a project and presented the principles of EAF to the project target groups.	12.12.2019.	Split	Croatia	NO	NO	YES	Video, presentation, invitation		Split Dalmatia county	Targetgroup 2							
A project Webinar was organized in December 2019 by IOF where NedoVrgoc, Phd presented a project and presented the principles of EAF to the project target groups.	12.12.2019.	Split	Croatia	NO	NO	YES			Zadar county	Targetgroup 2		1					
A project Webinar was organized in December 2019 by IOF where NedoVrgoc, Phd presented a project and presented the principles of EAF to the project target groups.	12.12.2019.	Split	Croatia	NO	NO	YES			Regional development agency Zadar (Zadra Nova)	Targetgroup 3			1				
A project Webinar was organized in December 2019 by IOF where NedoVrgoc, Phd presented a project and presented the principles of EAF to the project target groups.	12.12.2019.	Split	Croatia	NO	NO	YES			FLAG Škoji	Targetgroup 6						1	
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A project Webinar was organized in December 2019 by IOF where NedoVrgoc, Phd presented a project and presented	12.12.2019.	Split	Croatia	NO	NO	YES			Faculty of NaturalScience and Mathematics Split	Targetgroup 5					1		

the principles of EAF to the project target groups.																	
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## OGS webinar for teachers

OGS presented FAIRSEA project and EAF during a webinar for 144 school teachers held on 6 November 2020.

The webinar was held online in synergy with other initiatives, and it was the occasion to present the tools developed by FAIRSEA project (i.e. Play Decide discussion game and Fish n ships card game).

6 novembre, ore 16.00-18.00  
su piattaforma ZOOM

**WEBINAR PER EDUCATORI**

# REGALI DI BIODIVERSITÀ

I servizi ecosistemici dell'ambiente marino-costiero

EVENTO ONLINE  
ISCRIZIONE SU:

[https://zoom.us/join/zoom/register/WN\\_Pkji31MVR\\_EsawkHOU4tNMg](https://zoom.us/join/zoom/register/WN_Pkji31MVR_EsawkHOU4tNMg)

Info:  
040 224147 int.3 (lun-ven 10-13)  
[info@riservamarinamiramare.it](mailto:info@riservamarinamiramare.it)



## PROGRAMMA

ore 16:00  
**Introduzione e saluti**  
Maurizio Spoto,  
direttore AMP Miramare

ore 16:15  
**I servizi ecosistemici dell'ambiente marino-costiero: un racconto interattivo, multimediale e multitarget.**  
Fabrizio Bulgarini e Marco Papatot (AMP Miramare)


Ore 17:00  
**Prodotti dal mare, sfruttati dall'uomo: percorsi di sostenibilità della pesca.**  
Simone Libralato (OGS)

Ore 17.45  
**presentazione del gioco Fish&Ships e del discussion game sui servizi ecosistemici**  
A cura di Simone Libralato e Marco Papatot

Ore 18.00  
**Conclusioni e saluti**







**6 novembre, ore 16.00-18.00**  
**su piattaforma ZOOM**

**WEBINAR PER EDUCATORI**

**REGALI DI BIODIVERSITÀ**

I servizi ecosistemici dell'ambiente marino-costiero

**EVENTO ONLINE**  
**ISCRIZIONE SU:**  
<https://zoom.us/join/registration?ref=join&refcode=554W4K0U5TNY6>

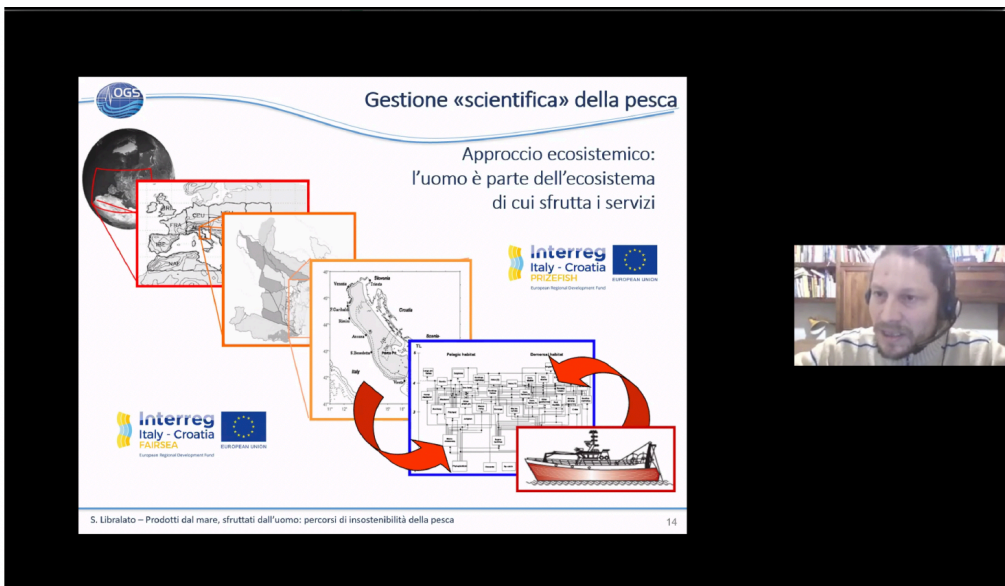
Info:  
 040 224147 int.3 (lun-ven 10-13)  
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 A cura di Simone Libralato e Marco Paparot
- Ore 18:00 **Conclusioni e saluti**

**Partecipanti (100)**

- Agatha Arkanas
- Alessandra Biondo
- Alessandra Tribuson
- Alessandro Battistella
- Alessandro Cavali
- Alessandro Filardo
- Alessia d'Angelo
- Alessia Zotto
- Alice Bottaro
- ANA GRINEZ
- Anna Calcon
- Anna Gregolo
- Antonio Stadlich
- antonio Cereno
- Antonio Romano
- Arianna Marrocchi
- Aurora Benalis
- Barbara Iardi
- Beatrice Magarotto
- Bonato Matteo
- Carlo Cecamelli
- Chiara Calabelli



**Gestione «scientifica» della pesca**

Approccio ecosistemico:  
 l'uomo è parte dell'ecosistema di cui sfrutta i servizi

OGS

interreg Italy - Croatia FAIRSEA

interreg Italy - Croatia FAIRSEA

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S. Libralato – Prodotti dal mare, sfruttati dall'uomo: percorsi di insostenibilità della pesca

## Fish n' Ships

1 manuale  
 120 carte specie (divise in 36 specie e 16 gruppi ecologici)  
 10 carte bonus  
 6 carte malus  
 32 carte di pesca (8 attrezzi diversi)

**MALUS**

**CAMBIAIMENTI CLIMATICI**  
Il riscaldamento globale e il cambiamento delle precipitazioni dovuto al cambiamento climatico, influisce sui cicli di vita di molte specie marine. Ogni governo deve essere attento e serio al riguardo.

**BONUS**

**AREA MARENA PROTETTA**  
Definire e implementare piani di gestione delle risorse ittiche marine. In pratica creare la carta di pesca (FP) che è il nostro programma. **VALE 3 PEEI CONTEGGIO PUNTI**









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## FAIRSEA

La pesca in Adriatico – un approccio ecosistemico condiviso

REGALI DI BIODIVERSITÀ





FAIRSEA



OGS | Simone Libralato

Regali di Biodiversità - Webinar per Educatori | Trieste | 06 Novembre 2020








### Aumentare la sensibilità pubblica

Sul settore della pesca



BIOLOGICAL DIVERSITY

Competence in complex system dynamics

FAIRSEA PLATFORM objectives

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






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### Playdecide – FAIRSEA

- Aiuta a capire i problemi della pesca
- Aiuta a vedere la questione da punti di vista differenti
- Porta a chiarire le posizioni dei personaggi (occorre immedesimarsi!)
- Invita i giocatori a vedere le questioni di gruppo invece che individuali, per il raggiungimento del consenso





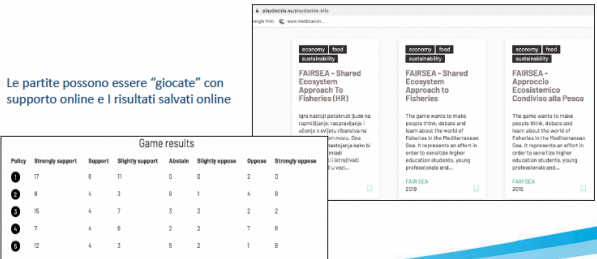



### Playdecide – FAIRSEA





E' online in Italiano, inglese e croato (da scaricare e stampare a colori possibilmente)

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

Le partite possono essere "giocate" con supporto online e i risultati salvati online



	Strongly support	Support	Slightly support	Abstain	Slightly oppose	Oppose	Strongly oppose
1	17	6	0	0	0	2	0
2	8	4	3	0	1	4	0
3	6	4	3	3	3	2	2
4	7	4	6	2	2	7	0
5	2	4	3	6	2	1	0

### Strumenti di discussione per creare consenso: Playdecide-FAIRSEA

Sull'APPROCCIO ECOSISTEMICO ALLA PESCA

Discussion game usage  
13 Sept 2019, Master Sustainable blue growth, Trieste

Upcoming events using FAIRSEA playdecide

FAIRSEA PLATFORM objectives

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








### Playdecide FAIRSEA

- 10 story cards (personaggi/lavori)
- 23 info cards (fatti reali)
- 25 issue cards (questioni o problemi)
- 16 challenge cards (to encourage the debate)
- 5 posizioni finali da scegliere per la gestione. Necessaria discussione!!!








### Fish n' Ships

**OBBIETTIVO**

Pescare nel proprio mare mantenendo l'ecosistema in buono stato di salute ed in modo da ottenere più punti possibili

Pescare in modo sostenibile!

- 2-4 giocatori
- 8+ anni
- 45 minuti








### Fish n' Ships

- 1 manuale
- 120 carte specie (divise in 36 specie e 16 gruppi ecologici)
- 10 carte bonus
- 6 carte malus
- 32 carte di pesca (8 attrezzi diversi)










### Fish n' Ships: il proprio mare

Costruzione della piramide ecologica  
 Del proprio ecosistema marino  
 Con specie diverse tra  
 Produttori primari,  
 Erbivori, carnivori e predatori apicali



Alcuni giri di mano.....

Per imparare le basi dell'ecologia



### Fish n' Ships: attenzione agli eventi esterni!



Per imparare la variabilità degli ecosistemi naturali, impariamo ad essere precauzionali: mantenere il capitale naturale!!



### Fish n' Ships: peschiamo!



PS	circuizione
GXX	Reti da posta
FPO	Trappole e nasse
TBB	rapido
DRB	Draga idraulica
PTM	Volante (traino pelagico)
OTB	strascico
LLX	palangaro

Per imparare che non tutte le attività di pesca sono uguali, che c'è un inevitabile scarto di pesca; si impara che per avere il servizio ecosistemico serve mantenere in buona salute il capitale naturale in biodiversità!



### Fish n' Ships: vince la strategia sostenibile!



Il gioco finisce quando un giocatore ha pescato con almeno 5 attrezzi diversi! Vince chi ha più punti tra carte pescate e carte nell'ecosistema  
**Imparare a bilanciare beneficio economico (punti del pescato) e impatto ambientale (punti specie in ecosistema)**



1  
3



**CREDITI:**

**Fish n' Ships**, un gioco di Diego Manna  
**Grafica:** Roberta Zucca  
**Edizioni White Cocal Press**

**Co-progettazione e revisione scientifica:** Simone Libralato, Davide Agnetta, Igor Celic, Giulia Massolino, Diego Panzeri.

**Copyright:** Istituto Nazionale di Oceanografia e di Geofisica Sperimentale - OGS

**Progetto:** questo gioco è progettato e realizzato nell'ambito del progetto Interreg Italia-Croazia FAIRSEA (Fisheries in the Adriatic Region - a Shared Ecosystem Approach)



Tra poco anche online grazie alla collaborazione con progetto Mare e Salute



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## GRAZIE

Istituto Nazionale di Oceanografia e di Geofisica Sperimentale – OGS  
Simone Libralato, FAIRSEA project coordinator



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