FAIRSEA (ID 10046951)

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

D 3.4.2 – Policy brief to EUSAIR key implementers

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Policy brief to EUSAIR key implementers

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

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Photo: Jacopo Pasotti

A Shared Ecosystem Approach for the Sustainability of Adriatic Fisheries

Fisheries play central role in coastal communities of the Adriatic Sea and for their ecological, economic and social sustainability a quantitative integrated platform is co-developed and used in participatory approaches. The platform, integrating from physics to fish and fisheries, represents a multidisciplinary decision support tool and it is the cornerstone element of a broad approach for increasing technical capacities and consensus toward sustainable solutions for the Adriatic Sea fisheries.

Challenges that require action

Fisheries of the Adriatic and Ionian region represent a set of economic activities vital for the coastal communities of the area and one of the most important fishing ground in the Mediterranean Sea. Other than employing approximately 18000 fishers directly and generating a revenues of about 600 million USD,

KEY ELEMENTS

The FAIRSEA integrated platform is developed into 7 modules each at a resolution of 1/16 of degree with data from 2000 to 2020.

HYDRO - describing water masses circulation and connectivity

BGC – representing biogeochemical planktonic processes and productions

BSTAT – describing distribution over time and space of main exploited resources

FSTAT - disaggregated catches and fleet capacity changes over time

EFFORT - spatial distribution of effort obtained from VMS/AIS data analyses

BIOECO – fisheries bioeconomic modelling and Multicriteria Decision Analysis

FWM - food web, multispecies dynamics (FWM)

fisheries in the area are strongly rooted in history and represent a tradition that permeates coastal societies. More than 100 species are commercially exploited by Adriatic fisheries with a set of different gears that developed through time.

Yet the key exploited populations of the Adriatic, such as anchovy, sardine, hake, Norway lobster, deep-water rose shrimp and common sole result to be overexploited, the exploitation is often at the limit of economical sustainability, the sector requires continuous forms of support and is affected by a continuous leakage of fishers. External factors such as changing marine conditions due to global warming, establishment of invasive species, anthropogenic source of disturbance on nutrient cycling and habitats all influence dynamics of resources thus affecting fisheries. A complex institutional framework involving several international and national entities and organizations are setting regulations and policies to overcome the critical situation, that are perceived by the fisheries sector as a continuous ineffective interference that do not allow strategic programming of fisheries enterprise business. The novel multiannual management plans set to provide solution to the sector represent a large source of criticalities for its strong socio-economic effects on the fisheries. Policies for fisheries and marine environment are mainly sectoral and strongly topdown, but in the next future they are leaving the place to policies based on quantitative integrated approaches developed using multisectoral analyses and involving stakeholders.

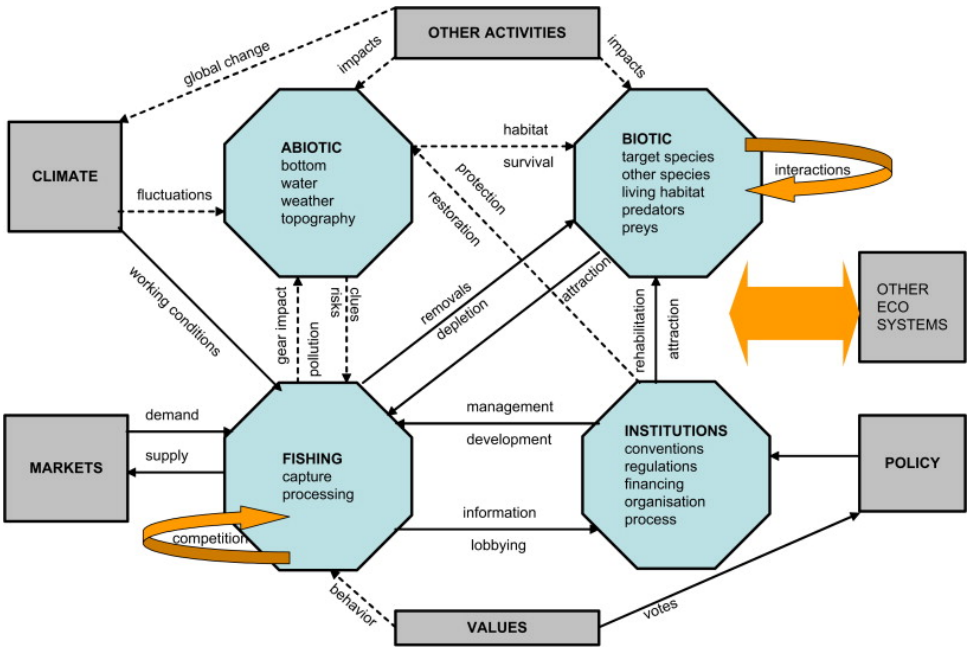


Diagram of fisheries socio-economic ecological system and its components

(Modified from: FAO Fisheries Technical Paper. No. 443)

The complex and interlinked nature of the Adriatic marine ecosystem implies that fisheries management, to be effective, must be evaluated at comprehensive scale, and can be efficient only if policies transcend national borders and involve the stakeholders in participatory processes to facilitate the achievement of the objectives of the Common Fisheries Policy (CFP). Most of the fish stocks are shared among bordering countries, thus requiring transnational plans and policies are needed. A proper management of marine resources in these conditions presupposes sharing information, methods and the development of transnational process, which implies cooperation in several areas. Furthermore, policies for fisheries and marine environment are increasingly based on quantitative integrated approaches, involving stakeholders for better acceptance and developed using multisectoral analyses.

The FAIRSEA approach

The approach developed in the Interreg Italy-Croatia project FAIRSEA (Fisheries in the Adriatic Region – a Shared Ecosystem Approach) is based on participation and co-creation, quantitative and multidisciplinary, and based on a cooperation at different scales. The asset for the project is the partnership involving scientific institutions, regional and national agencies, institutional policy makers.

FAIRSEA aims at creating grounds for an applicative, shared, crossborder and integrated platform for an ecosystem approach to fisheries (EAF) through a participative approach involving stakeholders, scientists and policy makers. FAIRSEA approach has three bases: 1) the experiences of the Regional Advisory Councils that initiated the stakeholder involvement in fisheries policies, ii) the quantitative integrated approaches (models) that are increasingly adopted by scientific community for an exhaustive EAF, and iii) the experience of cross-border frameworks that are expanding their activities by including socio-economic sectors into biological assessments and analyses.

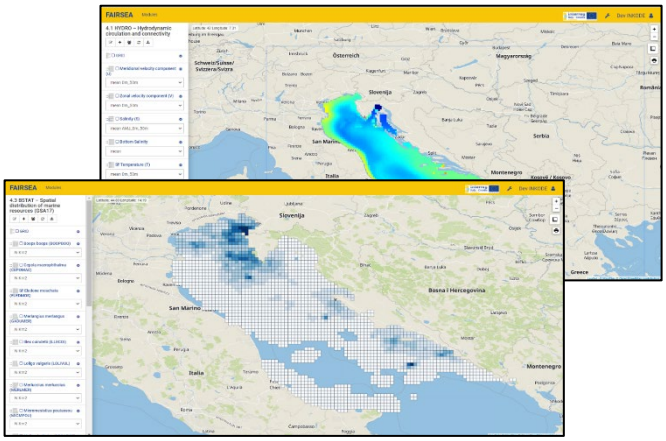
These three bases are harmonised in the FAIRSEA approach and will result in the practical development of a new integrated platform for EAF in the Adriatic area based on a participated process and through the involvement of a transboundary and transdisciplinary network of partners. Interactions between different levels (institutional, scientific, operators, policy makers) permit to share knowledge, capabilities, data and tools in order to enhance transnational cooperation and process integration. The approach builds on scientific and technical instruments already developed, that will be adopted and integrated opportunely on the basis of information, questions, issues and challenges identified during interactions with stakeholders and policy makers. Their involvement is considered fundamental for a common understanding (learning by doing), which is on the basis of trust and acceptance of results. This new collective approach will result in an operational decision support integrated tool useful for developing harmonised recommendations and for supporting policymakers to make new policies and laws based on solid scientific shared evidence that comes from a range of marine disciplines integrated across boundaries. The integration of transnational data and ecological processes will result in the development of common standards and best practices for the region, possibly exported in other areas of the Mediterranean Sea.

The project main output is a science-based shared integrated platform that will constitute an innovative and applied framework in the Adriatic region for management and planning. Using the platform development, conceptualization, application and demonstration in a series of events (summer schools, technical meetings and others) specific for authorities, policy-makers, scientific experts and civil society organisations will result in an enhancement of technical capacities and increase awareness on Ecosystem Approach to Fisheries (EAF) in the region.

Scheme of the pivotal role of the FAIRSEA integrated platform in the EAF process implemented in the Adriatic-Ionian region

Objective 1: Implement a shared "state of the art" integrated platform for the region

Develop an operational spatially explicit platform that integrates in 7 modules from physics to fish and fisheries dynamics. The tool results from a novel integration of existing information and numerical approaches applied in the Adriatic (GSA17 and GSA18) and western Ionian (GSA19) basins. The FAIRSEA integrated platform will permit testing different exemplificative policies that will be analysed and presented to stakeholders and policy makers for discussion.



Examples of layers of information regarding socio-ecological system of fisheries in the Adriatic and western Ionian sea.

Objective 2: Enhance transboundary integrated competence in the field of ecosystem approach to fisheries

Enhancing the transnational competencies and skills in the field of EAF in all network's members, by crossing and pooling resources and complementary expertise, exchanging and integrating knowledge and sharing the results. The goal is to develop a territorially integrated conceptualization of the EAF beyond existing differences and boundaries, and to strengthen and structure a network for future transnational plans useful in the framework of the Common Fisheries Policy (CFP).

Participants of the FAIRSEA First Advanced School on Ecosystem Approach to Fisheries and their provenience .

Objective 3: Share benefits and challenges of ecosystem approach to facilitate the achievement of CFP objectives

Implement participatory processes for sharing the integrated conceptualization of the ecosystem approach to fisheries and the insights obtained from pilot applications. Project process enhances collaborative and participated definition of policies to test, also through the involvement of a wide range of key stakeholders. The production of guidelines and best practices for transnational integrated frameworks useful for an ecosystem approach to fisheries is another aim of FAIRSEA.

The FAIRSEA First International Stakeholder meeting held in Venice (February 2019)

Interreg Italy - Croatia FAIRSEA

EUROPEAN UNION

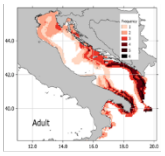
Main project outputs

FAIRSEA project finalized a series of outputs and results that has the potential to be extended to other areas and could be used at larger scale in the Mediterranean Sea.

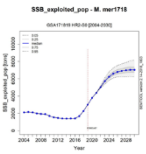
A decision support tool in the form of the integrated platform for an ecosystem approach to fisheries

The integrated tool gather together in a easily accessible and transferable way a large set of 3D oceanographic variables, distribution of renewable marine resources, fisheries effort at fleet segment level and other fisheries data. These layers of data were used in a set of different, complementary models (SDM, SMART, BEMTOOL, ECOSPACE) used to test scenarios.

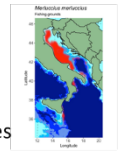
SDM
Hot spots identification for efficient management



BEMTOOL
Socioeconomic effects of management alternatives



S M A R T
Identification of fishing grounds,fisheries/resources effects of management



ECOSPACE
Spatial distribution of resources & effort under spatial management & climatic scearios

Large engagement of scientific and technical experts

3 international stakeholder meetings (Venice 2019; Ancona 2021; Split 2021) with approx. 150 representatives of fisheries, NGOs, academia.

2 Advanced International Summer Schools (one full week each) on quantitative tools for EAF (Venice 2019, Split June 2021) addressed to young researchers and scientists (approx. 50 people);

8 technical events for policy makers in different Italian and Croatian regions of the Programme area (Zadar, 2019; Mali Ston 2020; Komiza 2020; Ancona 2021; Bibione 2021; Trieste 2021; Porec/Tar 2021; Bari 2021) for local policy makers, fisheries representatives (approx. 120).

3 pilot studies developed in the form of identification of local issue and potential management scenario analysis (Veneto – Recreational fishery; Marche – Rapido Fishing for common sole; Istra – Trammel net for common sole).

Several climate and fisheries management scenarios tested including: Status quo, Closure 6 NM to trawlers, Reduction effort for trawlers, longer fishing ban, selectivity changes, Climate RPC 8.5, Additional Fisheries Restricted Areas.

Developed innovative communication tools

Innovative communication tools for all classes of targets were developed in order to explain complexity of fisheries socio-ecological system.

Simplified integrated platform in the form of a toy model for educational and teaching purposes (available upon request)

FAIRSEA Playdecide discussion game (IT, HR, EN) available online https://playdecide.eu/playdecide-kits/167469

Fish n' Ships card game (900 copies in IT, HR, EN) freely distributed upon request to schools, universities, and educational groups

Fish n' Ships online game (IT, EN) accessible at https://fishnships.it/

Lessons for policy makers

The two years experience of FAIRSEA provided basis for understanding 6 key elements for a successful implementation of Ecosystem Approach to Fisheries.

1) EARLY INVOLVEMENT OF STAKEHOLDERS

The participatory process tend to be demonstrative of conceptualizations, tools and results developed, while early involvement in any of the above points while developing the approach facilitate acceptance of results and allows introduce novel areas of discussion.

2) CONTINUITY OF INVOLVEMENT

Trust is emerging from knowing each other through a series of progressively more simple interactions. Thus the use of series of events for engaging stakeholders of different type allows to grow the possibilities for understanding, appreciating, and for discussing.

3) DIFFERENT SCALES OF ENGAGEMENT

Although inevitably the main policies are developed at the scale of the basin, involvement of actors at different scales in dedicated events allows to develop consensus at different scales. Since the institutional frameworks are interconnected this result in highly efficient cascading effects.

4) FACILITATING DISCUSSION

Some arguments are difficult and parties feel since the beginning stuck in their opinion. A third party such as an external facilitator more expert in participatory approach than in fisheries can produce very useful discussions and results, and more easily can obtain accepted compromising visions.

5) BE QUANTITATIVE

The management of fisheries implies introducing changes that affects life of people. Being quantitative is necessary to put into evidence the needs, the scope of intervention, the best options.

Future challenges and opportunities

A set of limitations can be identified:

- it is not possible for an external user to upload new data or update existing datasets: in the future uploading/update of the platform should be accessible;
- testing different scenarios other than those developed requires intervention of project partners: in the future modelling should be directly linked to the platform;

A set of feasible upgrades can be identified:

- increase resolution;
- permit aggregation of data in different ways;
- develop more fisheries management and climatic scenarios (also combined);
- develop further the socio-economic aspects and data;
- include data from neighboring areas;
- link with other platforms;
- online dynamic modelling.

This brief highlights key findings from the project FAIRSEA (Fisheries in the Adriatic Region—a Shared Ecosystem Approach) funded by the 2014–2020 Interreg V-A Italy—Croatia CBC Programme (Standard Project ID 10046951).

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