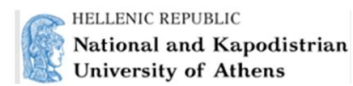




CINEA/EMFAF/2021/3.1.2/03/SC04/SI2.881222

Specific Contract 2021/3.1.2/03/SC04

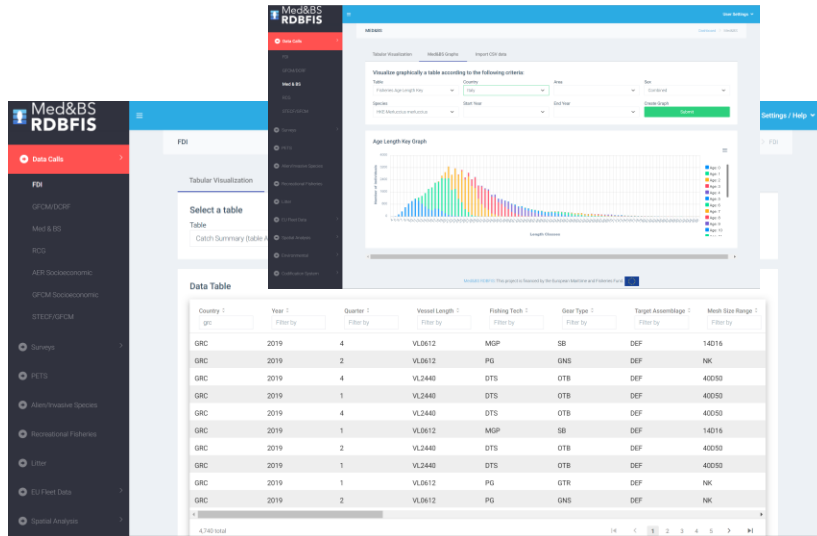
Hosting, maintenance and further development of the Regional Database for the
Mediterranean and Black Seas



RCG Med&BS technical meeting
26-30 August 2024

Developing a fisheries information system for the Med&BS

RDBFIS: a web-based integrated fisheries information system for the Med&BS



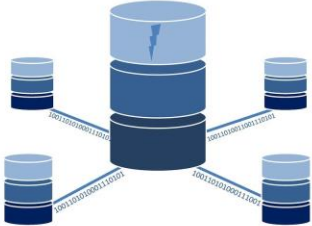
FRAMEWORK CONTRACT –
EASME/EMFF/2020/OP/0021
Duration: 24months,
Project Start: April 1st 2023

Purpose of the project

The main aim of the study is to work on the hosting, maintenance, fine-tuning and further development of the end product of regional grant RDBFIS and to provide support to the users of the end product.

- Centralized database system hosting aggregated DCR/DCF data sets including MEDITS, MEDIAS & BS surveys as well as detailed biological data with a user-friendly interface that make it easier to interact with the system, even if the users do not have deep technical expertise;
- Common syntax and consistency procedures ensures the quality of data;
- The MS can visualize and manipulate their data;
- A “Processing” package support the creation of the datacalls;
- Other components are included in the system (spatial effort & landings for SSF, fleet analysis, data entry forms for stomach contents, alien species, ...)

*populate
the system with data*



AER

EU Fishing Fleet Socio-
Economic data call

Aggregated data

- Med&BS
- FDI
- AER
- GFCM/DCRF

MEDITS

TA, TB, TC

Detailed biological
& landings data

MEDIAS

acoustics, pelagic
trawl, CTDs

MEDIAS database

- Acoustics
- Pelagic trawl
- CTDs

Validation scheme

Processing

Abundance

Biomass

Abundance-Biomass

Eggs & Larvae db

Updated versions

RoME

RoMEBS

BioIndex

RDBQc

RDBProcessing

AER database

- map_capacity
- map_fs
- map_fsfa0
- map_fssub
- map_ms
- map_msfa0
- map_recatch
- map_social

Validation scheme

Consistency checks

(JRC, RDBFIS)

Processing

RDBFIS progress work

FDI - A space-time tool to estimate spatial effort, weight and value of landings for SSF

FDI – SQL scripts to calculate the fishing effort from VMS data, landings by ERS rectangle

Fleet Analysis:
an open access dynamic tool has started to be developed to illustrate the evolution of the fleet dynamics in Europe; possible link with the landings, discards and value (FDI Table A);

FDI - quality checks on FDI spatial data (Table H & Table I)
Maurizio, ...

Stomach contents
Med&BS - ICES structures were adopted

.... in progress

Eggs&Larvae including daily eggs production

Recreational fisheries
PETS
Alien species
Diadromous species??

RDBFIS & MSFD

Common Estimation system



Synergies between QualiTrain and RDBFIS have been established (any improvement made for RDBQc, RoME & RoMEBS R packages are incorporated into the RDBFIS);

Communication and cooperation with ICES has been established aiming to investigate compatibilities between RDBFIS and RDBES

The RDBFIS consortium is open to collaboration with RCG ECON and experts to improve the AER component. Suggestions are welcome.

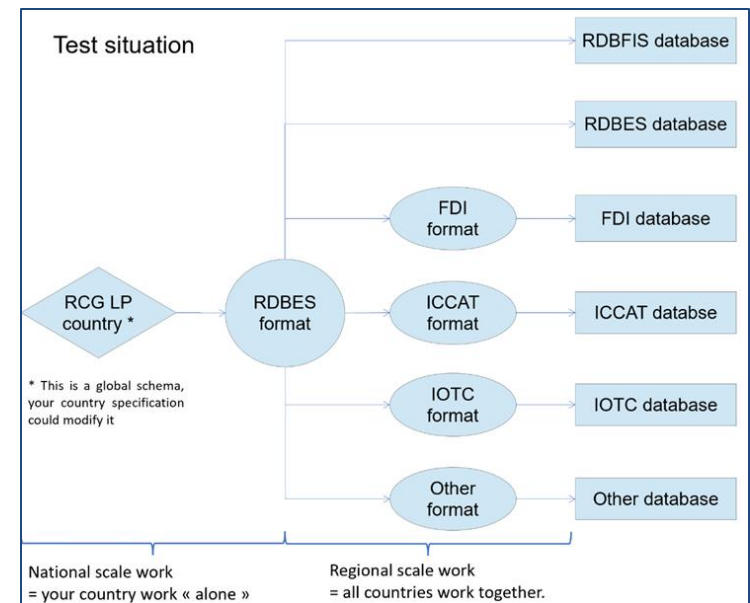


Updated versions
RDBQc
RoME
RoMEBS

Compatibilities
RCG LP
adopt H10
CL, CE

*Cooperation with the **RDBES chair and experts** aiming (a) to investigate possible compatibilities, (b) to avoid duplication work in case components already implemented in RDBES should be integrated into RDBFIS and (c) RDBFIS includes RDBES db structure for compatibility purposes (issues are open concerning the data validation as well as the elaboration routines);*

RCG LP ISSG RDB: Proposal for next steps for the RCG LP regional database is to test the RDBES data format with integration of LP data



Populate the system with data: Bilateral Meetings

 <p>CYPRUS (18/12/23, 19/12/23, 5/3/2024) <u>Participants:</u> Ch. Charilaou, M. Ioannou, S. Kavadas, I. Dokos and M. Pantazi</p>	 <p>CROATIA (08/01/24 & 09/01/24 & 28/02/24) <u>Participants:</u> I. Vukov, S. Visnic, V. Cikes, T. Jelanic, Igor, S. Kavadas and M. Pantazi</p>
 <p>SPAIN (15/01/24) <u>Participants:</u> J. P. Rosa, M. Conzalez Aguilar, S. F. Naranjo, J. Santo, J. M. Serna Quintero, P. L. Torres Cutillas, V. Shievka, J. Ubeda, S. Kavadas and M. Pantazi</p>	 <p>SLOVENIA (15 & 16/01/24, 15/02/2024) <u>Participants:</u> P. Pasvic, S. Kavadas and M. Pantazi</p>
 <p>ROMANIA (26/01/24) <u>Participants:</u> G. Tiganov, G. Alexandru, S. Kavadas and M. Pantazi</p>	 <p>ITALY (22/01/24) <u>Participants:</u> P. Carrara, P. Didato, E. Arneri, A. Mannini, M. Zilioli, B. Marzocchi, L. Pappalardo, S. Kavadas and M. Pantazi</p>
 <p>MALTA (08/02/24) <u>Participants:</u> J. Mifsud, K. Camilleri, S. Kavadas and M. Pantazi</p>	 <p>GREECE (12/02/24) <u>Participants:</u> K. Katsafaros, M. Chatziefstathiou, T. Papadopoulou, C. Raftoudi, S. Kavadas and M. Pantazi</p>
 <p>FRANCE (17/06/2024) <u>Participants:</u> A. Roussel, E. Tessier, M. Depetris, N. Billet, A. Chassanite, DGMARE, CINEA and S. Kavadas</p>	 <p>BULGARIA (16/02/24) <u>Participants:</u> S. Nicheva, K. Zhelev, I. Bikarska, F. Tserkiva, V. Raykov, E. Petrova-Pavlova and S. Kavadas</p>

Background contribution (data preparation, RDBFIS stability and revisions):

Stefanos Kavadas (HCMR), Ioannis Chamodrakas (University of Athens), Walter Zupa (COISPA), Isabella Bitetto (COISPA), Ioannis Dokos (HCMR), Konstantinos Kalkavouras (HCMR)

RDBFIS progress work (data validation & uploading)

The screenshot shows the Med&BS RDBFIS web application. The left sidebar contains a menu with categories like FDI, GFCM/DCRF, Med & BS, RCG, and AER Socioeconomic. The main content area is titled 'AER SOCIOECONOMIC' and has tabs for 'Tabular Visualization' and 'Import CSV data'. Under 'Import CSV data', there's a section 'Import CSV files for AER Socioeconomic' with a 'Select Table' dropdown set to 'AER map capacity (base fleet segment data)'. Below this is a 'Select CSV file to import' section with a 'Choose File' button and a 'No file chosen' message. At the bottom, there are 'Syntax Check' and 'Restart Import Procedure' buttons. A breadcrumb trail at the top right reads 'Dashboard > AER Socioeconomic'.

This screenshot shows the 'Data Table' view within the Med&BS RDBFIS application. The left sidebar is identical to the previous screenshot. The main content area is titled 'AER SOCIOECONOMIC' and has tabs for 'Tabular Visualization' and 'Import CSV data'. The 'Select a table' section shows the 'Table' dropdown set to 'AER map capacity (base fleet segment data)' with an 'Open Advanced Query Form' button. Below this is the 'Data Table' section, which displays a table with columns: Country, Acronym, Value, Unit, Year, Supra Region, Fishing Tech, and Vessel Length. The table contains 10 rows of data for GRC. At the bottom, there's a pagination bar showing '483 total' and a set of navigation controls.

Country	Acronym	Value	Unit	Year	Supra Region	Fishing Tech	Vessel Length
GRC	totves	1	number	2022	MBS	PS	VL0612
GRC	totves	77	number	2022	MBS	PS	VL1218
GRC	totves	119	number	2022	MBS	PS	VL1824
GRC	totves	28	number	2022	MBS	PS	VL2440
GRC	totgt	2495.03	GT	2022	MBS	PS	VL2440
GRC	totgt	1757.55	GT	2022	MBS	DFN	VL1218
GRC	totkw	25841.39	kW	2022	MBS	DFN	VL0006
GRC	totgt	15487.43	GT	2022	MBS	DFN	VL0612
GRC	totgt	1887	GT	2022	MBS	DFN	VL0006
GRC	totves	8	number	2022	MBS	HOK	VL1824

The screenshot shows a file explorer window with the address bar displaying 'rdbfisapi / src / main / resources / static / assets / validationcsv /'. The file list shows a folder named '..' and several CSV files: 'AerMapCapacity.csvs', 'AerMapFs.csvs', 'AerMapFsfaos.csvs', 'AerMapFssub.csvs', 'AerMapMs.csvs', 'AerMapMsfaos.csvs', 'AerMapRecatch.csvs', and 'AerMapSocial.csvs'. The user 'stefanoskavadas' is shown at the top with the text 'Update DcRcgSampling.csvs'.



1. MEDIAS database structure
Acoustics, Pelagic trawl, CTDs
2. Integration with RDBFIS
3. Validation scheme (*acoustics, pelagic trawl*)
4. Consistency check (*R*)
5. Processing (SQL)
Abundance, Biomass, Abundance-Biomass
6. Eggs & Larvae database structure

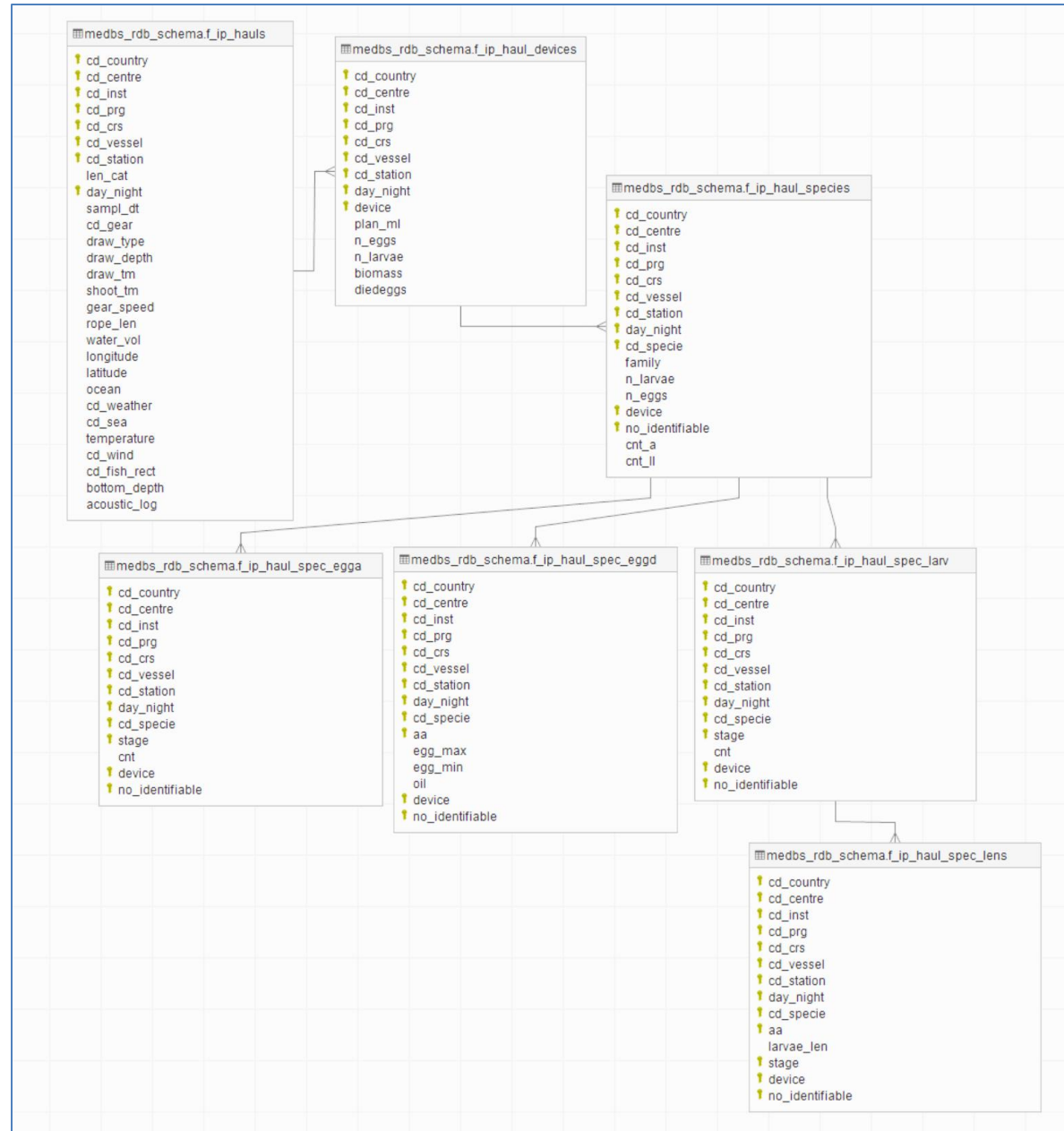
MEDIAS datacall and doodle for the workshop
are running

RDBFIS: Eggs & Larvae data base structure (existing in RDBFIS)

*In the context of implementing the RDBFIS and particularly within Activity 3.2.5 (Data entry forms and data elaboration routines), the development of data entry forms for **Eggs&Larvae**, PETS, alien species and recreational fisheries commenced*

Eggs & Larvae database structure:

A workshop with experts is scheduled to be organized, with the aim of adapting the structure to meet contemporary needs



RDBFIS: Eggs & Larvae data entry form (an example from IMAS-Fish)

FFFE E. Larval

Company: EAKEOE User: DB Administrator

Larval Haul

Country	GRC	Sampling Date		Longitude		Latitude	
Centre	HCMR	ShootingTime		Temperature		Fish Rect.	
Institute	IMBR	Draw Time (min)		Draw Depth		Draw Type	
Program	KRIP	Gear				Gear Speed	
Cruise		Water Volume		Rope Len			
Vessel		Weather Condition					
Length Category	01-12	Sea Condition					
Station		Oceanographic					
Acoustic log		Data					

Day/ Night Day

Devices used

Devices	Plankton ML	No of eggs	No of Larvae	Plankton Biomass	Died eggs

Species composition

Species	No of identifiable species	Family	Abundance Num	Diameter Num	Larval Num	Length Num

Eggs Abundance per Stage

Stage	No of Eggs

Eggs Diameter

Max Diameter	Min Diameter	Oil Diameter

Larval Stages

Stage	No of larval

Larval Length

Larvae Length	Larvae stage

Eggs & Larvae data entry form: an example from IMAS-Fish

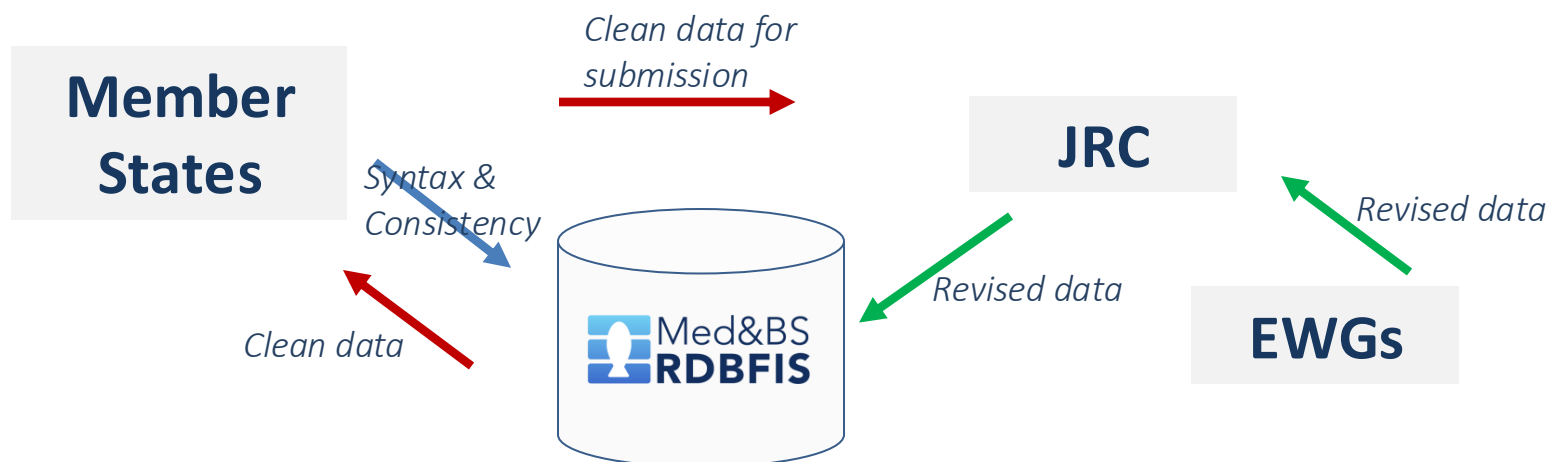
***Fleet analysis:** an open access dynamic tool has started to be developed to illustrate the evolution of the fleet dynamics in Europe; possible link with the landings, discards and value (FDI Table A);*

Data from the professional fishing fleet, spanning the period from 1991 to 2023, was downloaded from the official EU Fleet Register portal. GIS techniques were employed to spatially join the fishing ports with various geographical entities, including NUTS2 and NUTS3, FDI subregions, Geographical areas (GFCM, ICES). The fishing ports were match to LOCODE from the CIRCAMB Master Data Register. The accuracy of the fishing port locations was validated using information available from the IFREMER Sextant portal. The tool is accessible through the "EU Fleet Data/Fleet Vessels" component of the RDBFIS. Reports can be generated based on user-defined queries about active or decommissioned fishing vessels

The screenshot displays the Med&BS RDBFIS web application. The left sidebar contains a navigation menu with items: Data Calls, Surveys, Stormchase Contents, PETS, Alien/Invasive Species, Recreational Fisheries, Litter, EU Fleet Data (highlighted in red), Fleet Vessels, Spatial Analysis, Environmental, Certification System, and User Settings. The main content area is titled 'VESSELS' and has a 'Fleet' > 'Vessels' breadcrumb. Below this, there are tabs for 'Tabular Visualization' and 'Fleet Analysis'. The 'Fleet Analysis' tab is active, showing 'Fleet Analysis - Query Parameters'. The query is set to 'Active Fleet'. Vessel Length Segmentation is set to 'Med&BS'. The 'Type of Query' is 'Between', with 'Start' year 1991 and 'End' year 2023. There are filters for 'Filter on vessel characteristics' (Yes/No), 'Filter Results Geographically' (Yes/No), and 'Group Results' (Yes/No). An 'Execute Fleet Analysis' button is at the bottom. The footer mentions 'RDBFIS: Financed by EMFF (2021-2022) and CINEA/EMFAR (2023-2025)' and includes the European Union flag.

AER module has been integrated in the RDBFIS

- *Perform syntax and consistency checks before submitting data to the JRC. The aim is to decrease discrepancies between the AER and FDI datacalls (cross checking between AER & FDI is a goal for the project)*
- *Calculate specific economic performance indicators for STECF EWG purposes*



RDBFIS progress work (data validation & uploading)

The screenshot shows the Med&BS RDBFIS web application. The left sidebar contains a menu with categories like FDI, GFCM/DCRF, Med & BS, RCG, and AER Socioeconomic. The main content area is titled 'AER SOCIOECONOMIC' and has tabs for 'Tabular Visualization' and 'Import CSV data'. Under 'Import CSV data', there's a section 'Import CSV files for AER Socioeconomic' with a 'Select Table' dropdown set to 'AER map capacity (base fleet segment data)'. Below this is a 'Select CSV file to import' section with a 'Choose File' button and a 'No file chosen' message. At the bottom, there are 'Syntax Check' and 'Restart Import Procedure' buttons. A breadcrumb trail at the top right reads 'Dashboard > AER Socioeconomic'.

This screenshot shows the 'Data Table' view within the 'Import CSV data' section of the Med&BS RDBFIS application. It features a table with columns: Country, Acronym, Value, Unit, Year, Supra Region, Fishing Tech, and Vessel Length. Each column has a filter dropdown. The table displays 10 rows of data for GRC, with values ranging from 1 to 1887. A pagination bar at the bottom indicates '483 total' records and shows page numbers 1 through 5.

Country	Acronym	Value	Unit	Year	Supra Region	Fishing Tech	Vessel Length
GRC	totves	1	number	2022	MBS	PS	VL0612
GRC	totves	77	number	2022	MBS	PS	VL1218
GRC	totves	119	number	2022	MBS	PS	VL1824
GRC	totves	28	number	2022	MBS	PS	VL2440
GRC	totgt	2495.03	GT	2022	MBS	PS	VL2440
GRC	totgt	1757.55	GT	2022	MBS	DFN	VL1218
GRC	totkw	25841.39	kW	2022	MBS	DFN	VL0006
GRC	totgt	15487.43	GT	2022	MBS	DFN	VL0612
GRC	totgt	1887	GT	2022	MBS	DFN	VL0006
GRC	totves	8	number	2022	MBS	HOK	VL1824

The screenshot shows a file explorer interface for the path `rdbfisapi / src / main / resources / static / assets / validationcsv /`. It displays a list of CSV files: `AerMapCapacity.csvs`, `AerMapFs.csvs`, `AerMapFsfaos.csvs`, `AerMapFssub.csvs`, `AerMapMs.csvs`, `AerMapMsfaos.csvs`, `AerMapRecatch.csvs`, and `AerMapSocial.csvs`. At the top, it shows the user 'stefanoskavadas' and the file 'Update DcRcgSampling.csvs'.

RDBFIS progress work (AER validation scheme)

rdbfisapi / src / main / resources / static / assets / validationcsv / AerMapFsfa.csvs



stefanoskavadas Update AerMapFsfa.csvs

54c7682 · 3 weeks ago History
























Code Blame 24 lines (24 loc) · 29 KB Your organization can pay for GitHub Copilot

Raw Copy Download Edit View

```
1 version 1.2
2 @totalColumns 20
3 @permitEmpty
4 @ignoreColumnNameCase
5 country: any("BEL","BGR","DNK","DEU","EST","IRL","GRC","ESP","FRA","HRV","ITA","CYP","LVA","LTU","MLT","NLD","POL","PRT","ROU","SVN","FIN","SWE","GBR","ENG","GBC","GBG","GBJ","IOM")
6 acronym: any("totvallandg","totwghtlandg")
7 value: range(0,*)
8 unit: any("kg","euro")
9 species: any("CGM","LLO","MYU","SPW","RJT","ALK","AML","AUD","DJO","DPQ","DUM","EFB","EHZ","FCG","FPE","FRF","GOU","JCH","JFB","JRX","LNV","LSE","MMI","MRA","MYR","NDX","NFA","NUW")
10 sub_region: any("34","34.3.1.1","34.3.1.3","51","51.6","51.3","51.4","51.5","34.3.1","51.7","34.3.3","sa 1","sa 2","sa 3","sa 4","sa 5","sa 6","sa 7","sa 8","sa 9","sa 10","sa 11.1")
11 year: positiveInteger range(2008,2023)
12 supra_region: any("MBS","NAO","OFR","BS","NA","NS","NONE","AREA37","AREA27")
13 fishing_tech: any("DFN","DRB","DTS","FPO","HOK","INACTIVE","MGO","MGP","NO","PG","PGO","PGP","PMP","PS","TBB","TM")
14 vessel_length: any("VL0006","VL0612","VL0010","VL1012","VL1218","VL1824","VL2440","VL40XX","NK")
15 geo_indicator: any("NGI","NEU","IWE","P2","P3","IC","MA","GF","GP","MQ","MF","RE","YT","NK")
16 gear: any("FAD","HAR","MIS","DRB","DRH","FPN","FPO","FYK","GEF","GNC","GND","GNS","GTN","GTR","HMD","LA","LHM","LHP","LLD","LLS","LNB","LNS","LTL","NA","NK","NO","OTB","OTM","OTT")
17 fishery: any("NAFO","NEAFC","ICCAT","IOTC","CECAF","WECAFC","SFPA","SFPA_NA","SFPA_IO","SFPA_AO","SFPA_PO","PELAG","DEMER","NK")
18 activity: any("L","A","NU") or empty
19 comments: length(*,256)
20 sampling_strategy: switch(($year/range(2008,2015),any("C","PSS","NSS","NR")),any("C","PSS","NSS"))
21 achieved_sample_rate: range(0, 100) or empty
22 coefficient_of_variation: range(0, 1) or empty
23 response_rate: range(0, 100) or empty
24 data_source: length(*,256)
```


AER database

- map_capacity
- map_fs
- map_fsfa0
- map_fssub
- map_ms
- map_msfa0
- map_recatch
- map_social

- >  p_aer_acronyms
- >  p_aer_acronyms_template
- >  p_aer_activity
- >  p_aer_age_class
- >  p_aer_capacity_acronyms
- >  p_aer_education
- >  p_aer_employment_status
- >  p_aer_fishery
- >  p_aer_fishing_activity
- >  p_aer_fs_acronyms
- >  p_aer_fsfa0_acronyms
- >  p_aer_fssub_acronyms
- >  p_aer_gender
- >  p_aer_ms_acronyms
- >  p_aer_ms_unit
- >  p_aer_msfa0_acronyms
- >  p_aer_nationality
- >  p_aer_recatch_acronyms
- >  p_aer_region
- >  p_aer_sampling_strategy
- >  p_aer_social_acronyms
- >  p_aer_sub_region
- >  p_aer_unit

AER

EU Fishing Fleet Socio-Economic data call

- *The publicly available data was provided by the JRC*
- *Three variables are missing: achieved_sample_rate, coefficient_of_variation, response_rate*
- *Differences between publicly available data and data hosted on JRC db have been reported*

Validation scheme

Consistency checks (JRC, RCGECON, experts)

[Processing routines](#)

AER codification system

gear = NK where no value is available

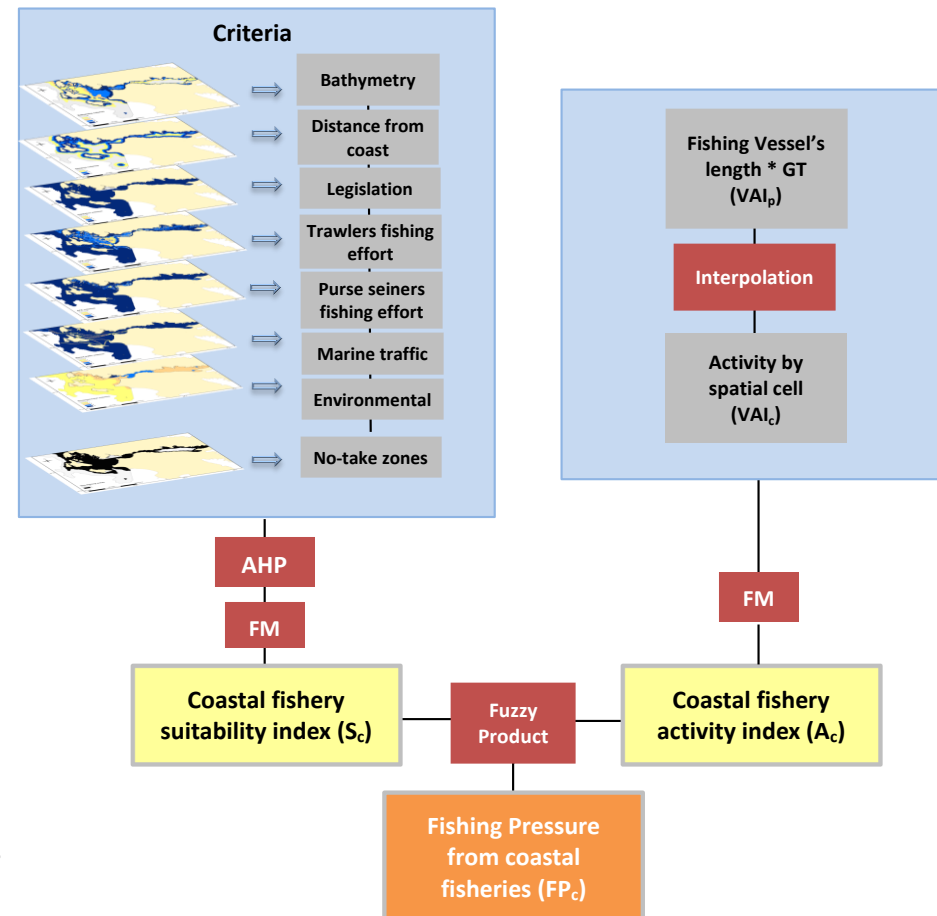
fishery = NK where no value is available

activity = ?? where null

Mapping spatial distribution of SSF
in data limited cases: A space-time
tool to estimate spatial effort,
weight and value of landings

Introduction: MCDA – Multi-Criteria Decision Analysis¹

- Small-Scale Fishing (SSF) is highly important for the Mediterranean fisheries
- The spatial distribution of SSF (LOA <12 m) effort and landings is **unknown** since data on fishing vessels locations, e.g. VMS/AIS data, are not available
- Certain, **SSF techniques** (e.g. bottom longlines) might have **impacts** on maerl beds, coralligenous formations etc.
- An approach that combines geospatial data and experts' knowledge (**GIS-MCDA**) has been employed to estimate fishing pressure.



Recent advances of the MCDA method

The method has been expanded to include :

1. other **fishing effort, landing weight and value estimations** performed in **coarser** spatial scales (e.g. by Geographical Sub-Area - GSA and country level as reported in STECF-FDI tables A and G)
2. **criteria** that drive spatiotemporal patterns of fishing pressure (e.g. **weather/climate conditions**)
3. **species distribution** (based on modeling e.g. GAMs, interpolation)

The merit of including the above information to the MCDA is that:

- Maps of fishing effort can be:
 - expressed in commonly used indicators (e.g. **days at sea**)
 - assessed in several **temporal** scales (e.g. year-quarter) and.
 - **Spatial landings and weight** can be now delineated **by species**.
-
- In the framework of RDBS a development of an **r-package** is ongoing aiming to support and automate the following processes
 - 1) Estimate fishing pressure index (FPI) from MCDA
 - 2) estimate spatial effort and landings in the format of table H and I

In the framework of RDBS a development of an r-package is ongoing aiming to support and automate the procedure and includes the following

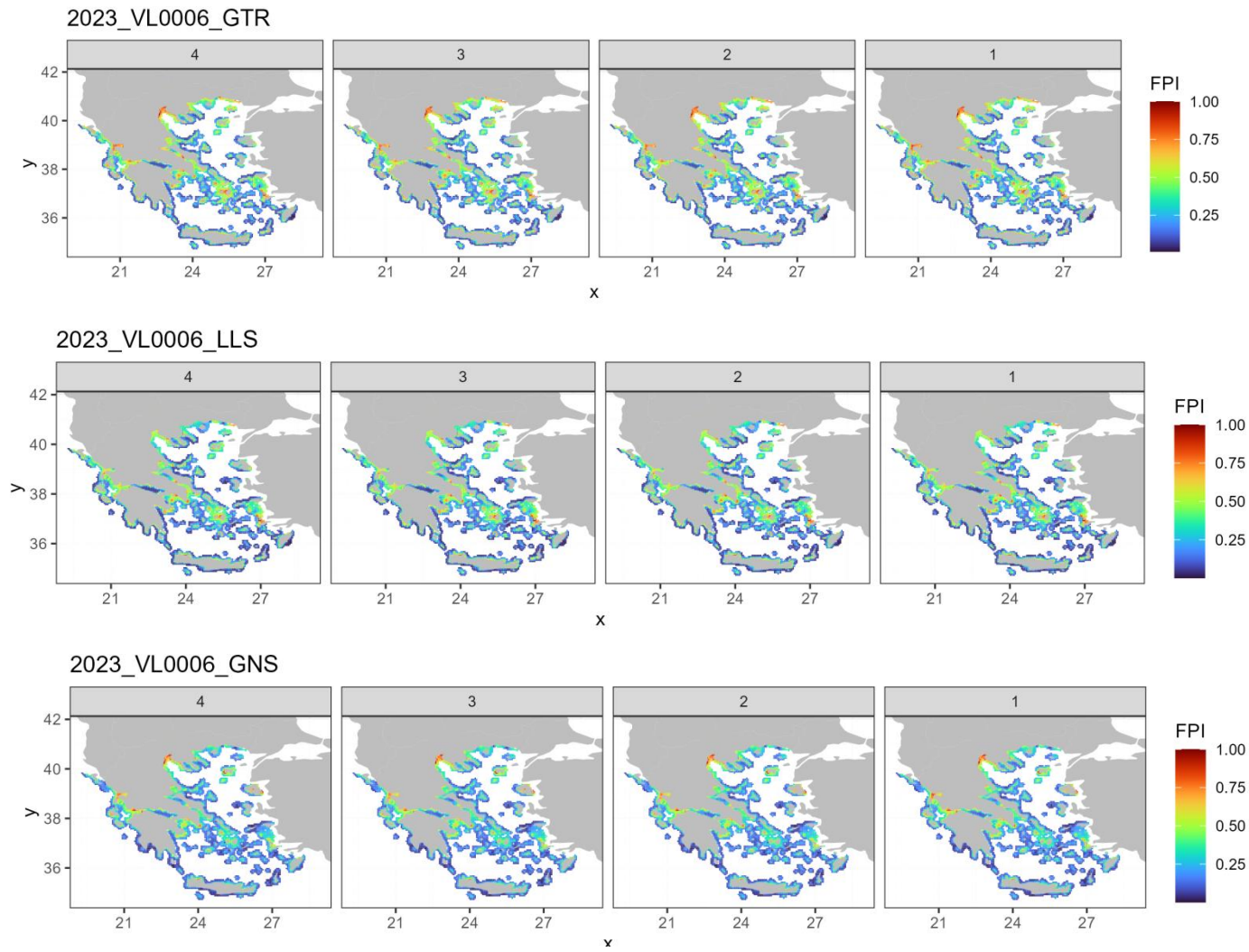
1) preparatory work on local machine

- Estimation of fishing pressure index (FPI) from MCDA by gear, quarter, year/s and country
- example procedures: grading of criteria, AHP, interpolation, other spatial analytical techniques and plotting

2) integrated within RDBFIS part

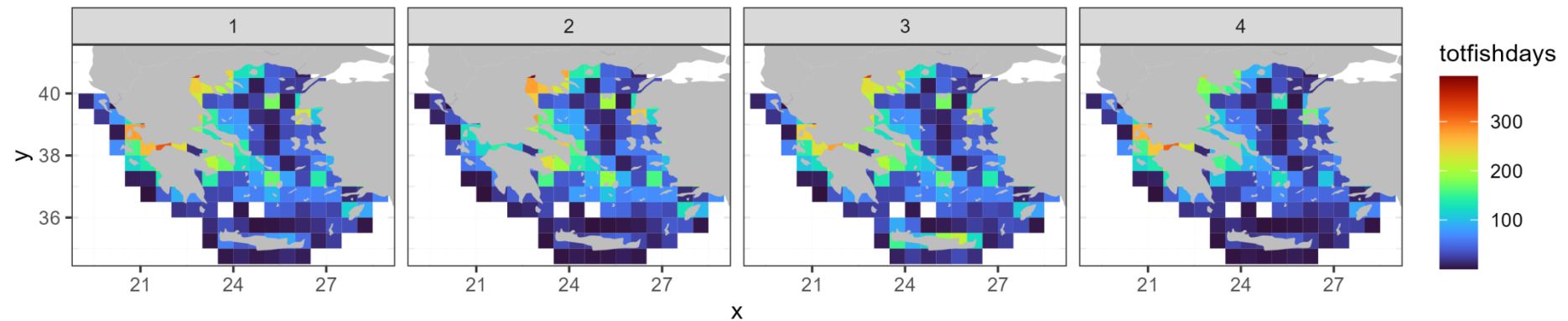
- estimate spatial effort and landings in the format of table H and I
- example procedures: use the proxy FPI produced by MCDA and combining with tables A and G based on Fisheries Dependent Information - FDI (in the format submitted in the data call <https://stecf.jrc.ec.europa.eu/dd/fdi>), combine with species distribution (if available), estimate spatial effort, landings and value in fine resolution and plotting

1) Examples of fishing pressure index outcomes expressed by vessel length category and quarter for 2023

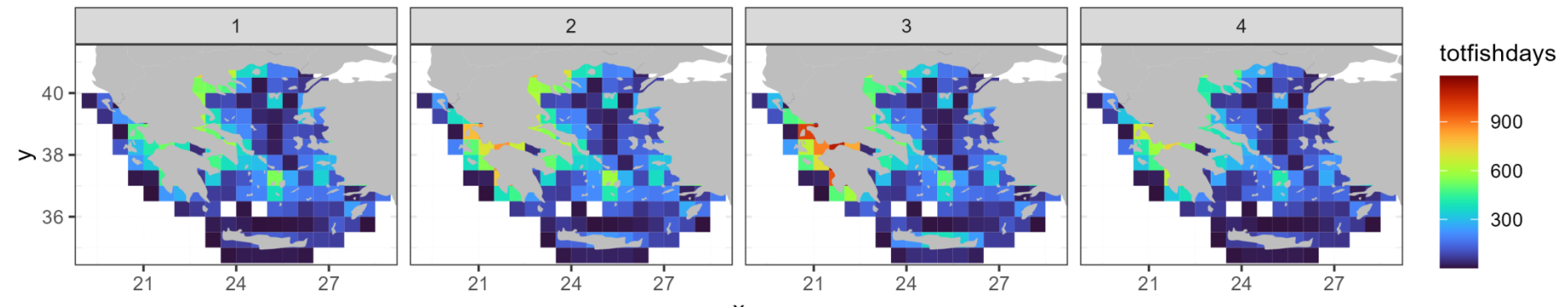


2) Examples of spatial fishing effort expressed in the format of Table I *

2023_VL0006_DFN_GNS_DEF_GNS_DEF_>0_0_0



2023_VL0006_DFN_GTR_DEF_GTR_DEF_>0_0_0



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U	V
country	year	quarter	vessel_length	fishing_tech	gear_type	target_assemblage	mesh_size	metier	metier_7	supra_region	sub_region	eez_indicator	geo_indicator	specon_tech	deep	rectangle	latitude	longitude	c_square	totfishdays	confidential
GRC	2023	1	VL0006	DFN	GNS	DEF	NK	GNS_DEF	NK	MBS	GSA23	NA	NK	NK	NA	05*05	34.75	23.75	NA	3.163038422	N
GRC	2023	2	VL0006	DFN	GNS	DEF	NK	GNS_DEF	NK	MBS	GSA23	NA	NK	NK	NA	05*05	34.75	23.75	NA	1.681401098	N

* based on MCDA and Fisheries Dependent Information - FDI (Effort by country.csv Table G in the data call <https://stecf.jrc.ec.europa.eu/dd/fdi>) and expert knowledge

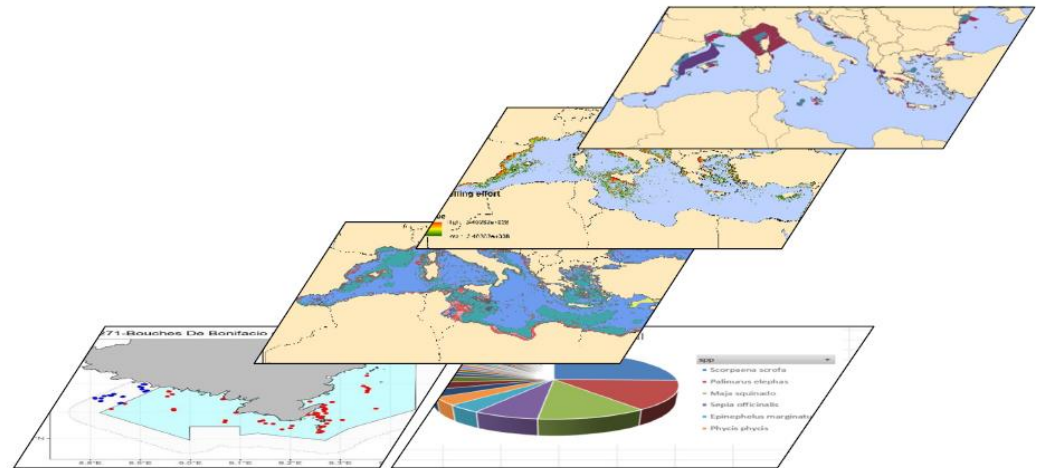
Development of an **r-package** to support and automate the process

Components	General description of the functions developed (ongoing work of RDBFIS project)
Spatial Fishing Pressure Index (FPI) by MCDA	Grading of a dataset (ranking procedure)
	Normalization of a data object (fuzzyfication process)
	Analytic Hierarchy Process (AHP)
	Fishing gear interpolation for estimating Activity index based on Inverse Distance Weighted
Fishing effort estimation	Compare fishing effort in days at sea estimated using Fishing Pressure Index as a proxy with effort estimations by GSA/gear/quarter/year/country (based on table G)
	Estimate fishing effort for Small Scale Fisheries (SSF) expressed in days at sea using Fishing Pressure Index as a proxy
Spatial landings by species	Estimate spatial landing weight or value using Fishing effort and landings per unit effort as a proxy
	Compare catch expressed in landing weight, landing value, discard weight estimated using Fishing Pressure Index as a proxy with table A by GSA/gear/quarter/year/country
Spatio-temporal FPI by MCDA	Convert netcdf containing meteorological data from Copernicus products to a data.frame and store in a csv.
	Create meteorological criterion
	Convert netcdf containing meteorological data (other from Copernicus) to csv.
Supplementary functions	Dataframe to RasterLayer conversion
	Combine Fishing Pressure Index (FPI- estimated by MCDA) with EEZ polygons to estimate the country
	Combine Fishing Pressure Index (FPI- estimated by MCDA) with GSA polygons to estimate the Geographical Sub-Area.
	Extract values from Fishing Pressure Index RasterLayer in a data frame with longitude, latitude
	Shapefile to RasterLayer conversion
	Plotting

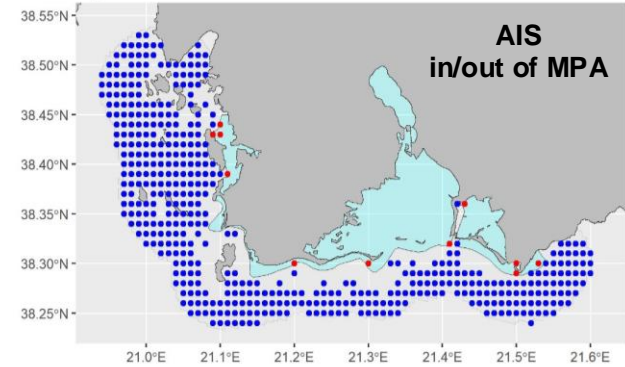
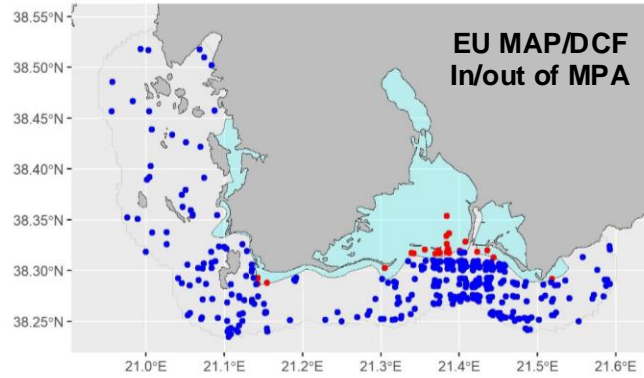
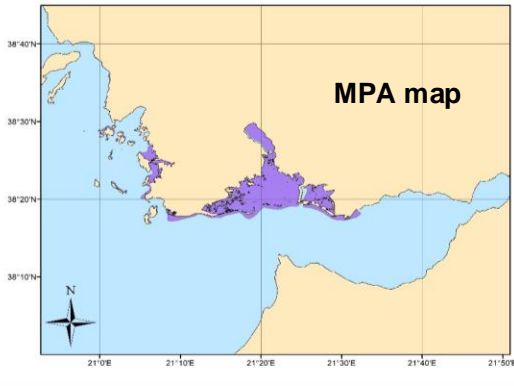
MAPAFISH-MED integration to MED & BS RDBFIS



- Map visualization
- Per MPA, layers of:
 - Info sheet of MPA
 - Fishing footprint
 - Catch composition
 - Seabed habitats



Fishing footprint

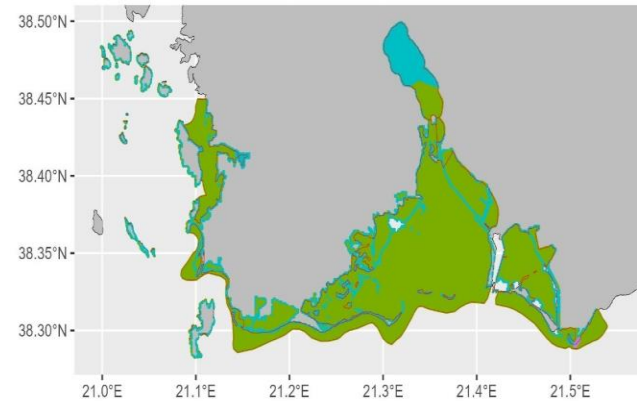


Effort

Effort (apparent fishing hours)			
Fishing gear category	Inside	Outside	Grand Total
fishing		22	22
other_purse_seines	204	12535	12739
purse_seines	38	2410	2448
set_gillnets		6	6
trawlers	297	26141	26438
Grand Total	539	41114	41653

Landings

Landings (in kg)	Fishing gear									Grand Total
	GNS	GNS	GTR	GTR	LLS	LLS	NETS	OTB	PS	
species	Inside	Outside	Inside	Outside	Inside	Outside	Outside	Outside	Outside	
<i>Sardina pilchardus</i>		0.6		0.1				28.8	17947.0	17976.4
<i>Engraulis encrasicolus</i>		0.5		0.0				21.1	6900.5	6922.2
<i>Sardinella aurita</i>				0.2				1.9	6504.3	6506.3
<i>Merluccius merluccius</i>	0.6	1613.4	4.7	30.3		5.2	50.2	1361.5	6.1	3072.0
<i>Boops boops</i>	0.2	2.2	0.3	1.7	2.2	2.4		363.5	1809.3	2181.7
<i>Scorpaenopsis</i>		99.3	0.5	1.6		0.2		32.4	1086.1	1220.2
<i>Scorpaenopsis</i>		6.2	7.5	99.8	45.7	303.1	8.1	379.2	93.4	942.9
<i>Paralichthys</i>		26.9	5.3	81.8	4.0	201.4		431.6	0.6	751.5
<i>Mullus barbatus</i>		29.9	15.5	75.6		0.3	0.9	508.4	0.7	631.3
<i>Paranereis longirostris</i>		5.2		0.1			1.5	601.6	0.0	608.4
<i>Scopelogadus</i>		10.1	86.1	414.0			0.4	61.5	0.2	552.4
<i>Loligo vulgaris</i>	0.4	294.0	11.5	109.5			3.4	75.4		499.1
<i>Loligo vulgaris</i>		0.4	1.6	9.2			0.8	416.3	67.6	495.9
<i>Trachurus trachurus</i>	0.2	187.0		11.1	0.1		2.6	83.7	120.5	405.1



Seabed habitat

- MSFD_BBHT
- Circalittoral sand
 - Infralittoral sand
 - Na
 - Offshore circalittoral sand



CINEA/EMFAF/2021/3.1.2/03/SC04/SI2.881222

Specific Contract 2021/3.1.2/03/SC04

Hosting, maintenance and further development of the
Regional Database for the Mediterranean and Black Seas

We thank you for your attention
<https://rdbfis.eu/>



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(checks on spatial information and mapping for the FDI EWG)*