



Webinar: “Data and information management and sharing in the Decade:
why, who, what and how?”

Digital innovation Hand-in-Hand with fisheries and ecosystems scientific monitoring; the FAO Fisheries & Environmental Atlas

by **Marc Taconet**, alternate focal point SDG Indicator 14.4.1



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FAO Fisheries and Aquaculture Division. Rome

with contributions from NFISI team: Anton Ellenbroek, Aureliano Gentile, Tamsin
Vicary, Emmanuel Blondel, Yann Laurent; and Gianpaolo Coro (CNR-ISTI)



Food and Agriculture
Organization of the
United Nations

BLUE TRANSFORMATION

Sustainable fisheries



Upgraded Value Chains

Roadmap 2022–2030

A vision for FAO's work on aquatic food systems

Sustainable Aquaculture



Overview of the Goal 14

Goal 14 is to conserve and sustainably use the oceans, seas and marine resources; 10 targets to address land- and marine-based threats

Custodian agencies

- UNEP
- IOC
- UN DOALOS
- FAO



10 targets to address:

Degradation of marine environment / ocean health	Reduce marine pollution	Address ocean acidification							
Protection of marine environment	Manage/Restore ecosystems		Conserve marine areas						
Sustainable use of marine living resources			Effective management to restore fishery stocks	prohibit fisheries subsidies	increase economic benefits		Promote rights of SSF		

Increase science, research, technology

implement international law



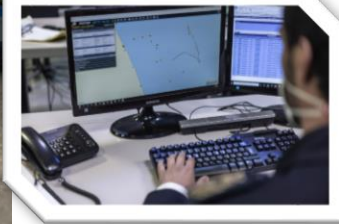
Scope of intervention – Catch and Effort data from field data collection to policy

POLICY

SCIENCE

DATA

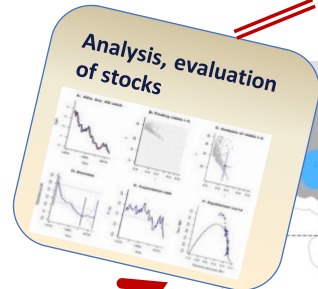
Questionnaire SDG14.4.1 indicator



National fisheries information systems

LOCAL \ NATIONAL

Calipseo



Regional databases and shared stocks assessment

REGIONAL

WECAFC



FIRMS



Global catch statistics

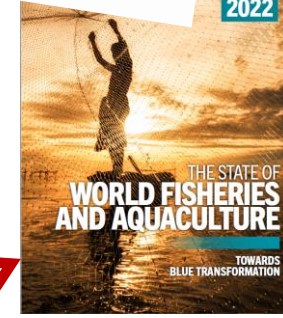
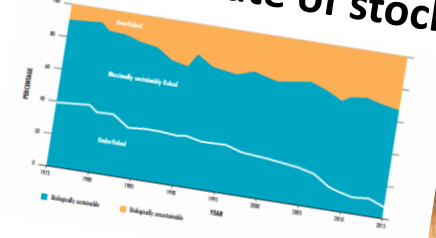
Quantity (t)

Area	Species	Scientific Name	2010	2011	2012	2013	2014	2015	2016	2017
Atlantic, Southwest	Patagonian grenadier	Macrurus magellanicus	87 000	75 951	53 423	51 207	50 842	52 021	37 547	22 561
	Patagonian redfish	Sebastes ocellatus	2	7	1	0	0	4	0	0
	Patagonian squid	Loligo gahi	58 003	50 058	54 841	38 203	43 224	28 709	43 850	54 000
	Patagonian toothfish	Dissostichus eleginoides	4 910	4 946	4 824	5 100	4 428	5 850	5 850	5 200
Sub-total Atlantic, Southwest			150 923	131 062	112 904	102 500	109 444	68 590	87 200	61 677
	Patagonian grenadier	Macrurus magellanicus	1 584	3 132	797	481	705	359	211	10
	Patagonian squid	Loligo gahi	0	0	0	0	0	0	0	567
	Patagonian toothfish	Dissostichus eleginoides	802	1 800	1 222	1 919	1 816	2 003	2 049	2 398
Sub-total Atlantic, Southwest			2 386	5 032	2 019	2 397	2 511	2 402	2 260	3 004
	Patagonian grenadier	Macrurus magellanicus	13 744	16 212	11 843	11 613	5 353	6 062	6 008	3 898
	Patagonian rockcod	Patagonotothen brevicauda	0	0	0	0	100	41	0	20
	Patagonian squid	Loligo gahi	6 537	4 218	16 473	10 424	18 119	8 337	8 850	12 134
Sub-total Atlantic, Southwest			22 667	21 210	28 485	22 458	21 762	12 717	18 183	16 742
	Patagonian toothfish	Dissostichus eleginoides	0	0	0	0	0	0	0	91
	Patagonian toothfish	Dissostichus eleginoides	0	0	0	0	0	0	0	91
	Patagonian toothfish	Dissostichus eleginoides	0	0	0	0	0	0	0	91
Grand total		176 106	138 097	193 408	127 415	133 627	151 709	137 623	161 714	

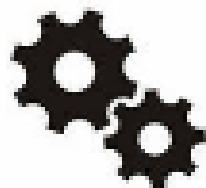
FAO - Fisheries and Aquaculture Information and Statistics Branch - 23/09/2019

GLOBAL

Global State of stocks



Broad partnerships for FAIR implementation and data sharing



ASFIS
ISSCFG
ISSCFV
ISSCFC



GLOBAL
REGIONAL
NATIONAL



CWP



European Commission

D4SCIENCE

Regional Fisheries Bodies



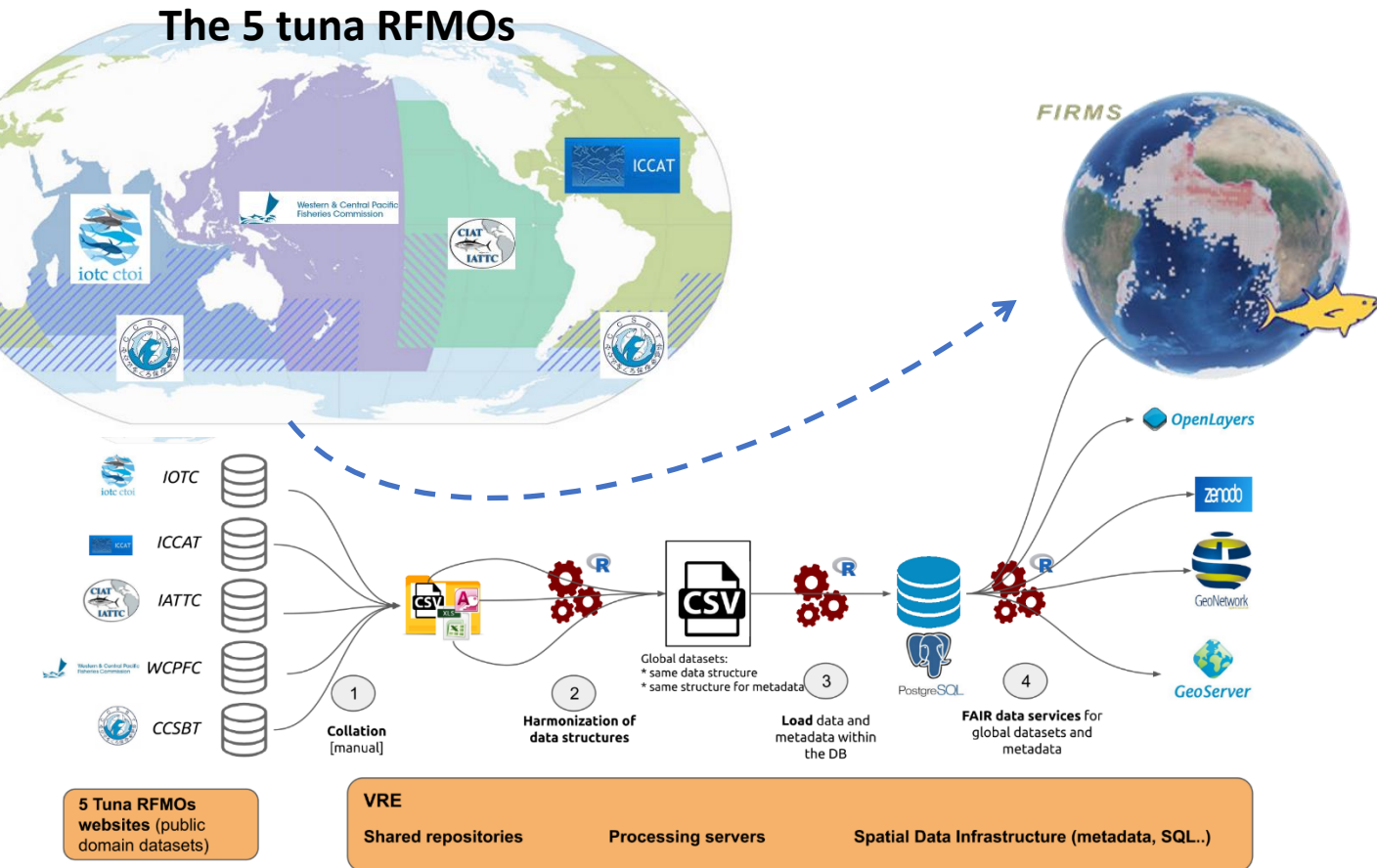
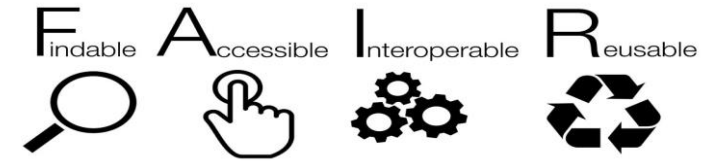
National technology institutes

National fisheries / research institutes

National libraries

FAIR data flows along the data value chain

– ex. the FIRMS Tuna Atlas [fisheries Atlas]



F_{indable}

Discovery metadata
DOIs



A_{ccessible}

Map viewer,
Well known standard data formats and protocols



I_{nteroperable}

Implement standards in different domains:
- fisheries classifications
- OGC
- Data Cite

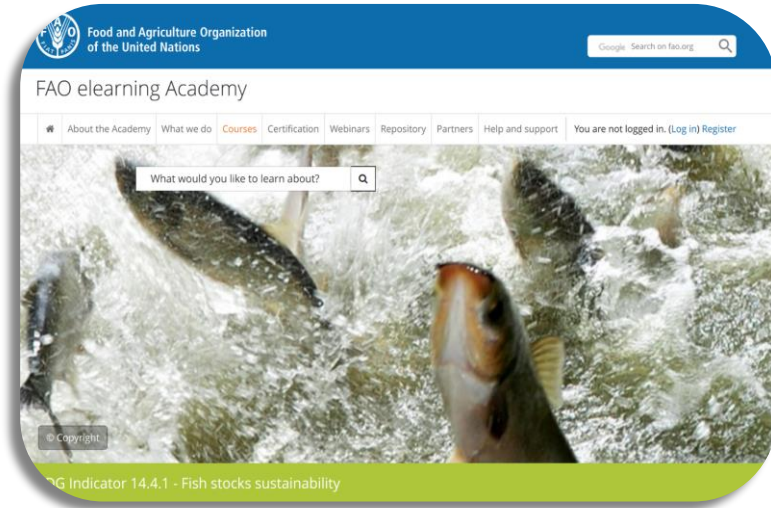


R_{eusable}

Rich usage metadata
DOIs
R for OpenScience



FAO eLearning ACADEMY



eLearning course (EN, FR, ES, RU) :

<https://elearning.fao.org/course/view.php?id=502>



SDG 14.4.1 indicator - online and in person workshops

The banner includes the FAO logo, the Sustainable Development Goals logo, and the SDG 14 icon. The text reads:

Global online workshops on SDG Indicator 14.4.1 Part 3 (E)

Proportion of fish stocks within biologically sustainable levels

Date: 8 - 10 February 2022

Time: 8.00 - 11.00am (Rome time)

A world map is shown with several regions highlighted in different colors: North America (purple), South America (orange), Europe (blue), Africa (green), Asia (pink), and Australia (yellow).

SDG Indicator 14.4.1_Lesson 5

Lesson 5

Guidelines for national reporting of SDG Indicator 14.4.1

The focus of this lesson is on how to report Indicator 14.4.1 at the national level and to build a link between the output of this indicator and the actions of policy-makers.

Once the proportion of sustainable fish stocks is estimated, reporting the results of this indicator to FAO is critical for determining fisheries status at national and global scales. Understanding stock status provides a basis for determining where interventions may be most important and useful, including identifying stocks or regions where the greatest fisheries management support is required.

40 minutes Text-only version

The video player shows a map of the world with a focus on the Atlantic Ocean, displaying data points for fish stocks.

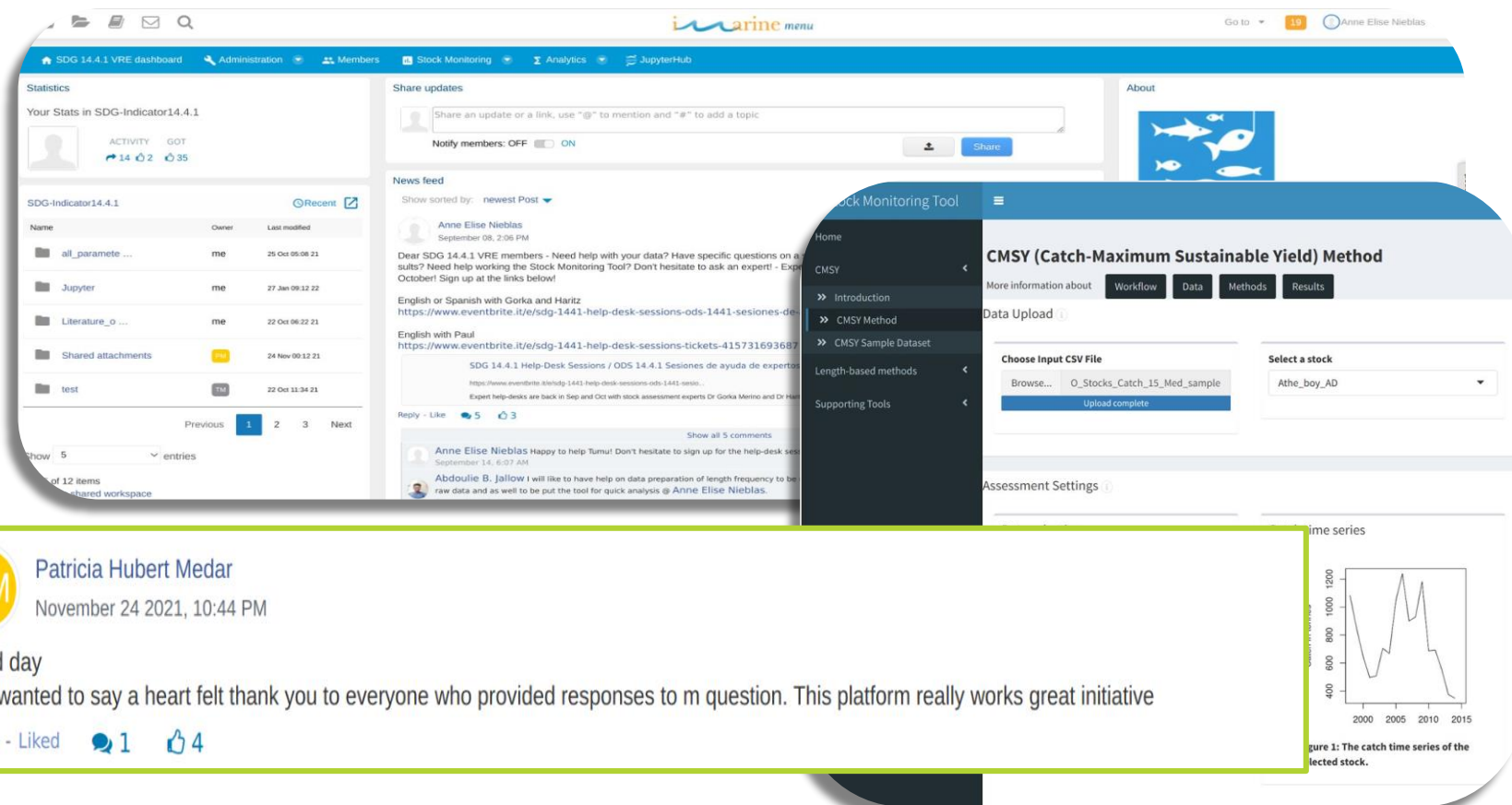
PO_ROU_201804140033.jpg © FAO/Glau

Digital innovation in support to capacity building

i-marine Virtual Research Environments (VREs) for hands-on training:

- R shiny SDG 14.4.1 **Stock Monitoring Tool** to explore data-limited methods
- SOFIA-Transparent Assessment Framework VRE with **online Rstudio hosting SRA+**
- **community dashboard of >1000 participants worldwide for > 100 countries**

Help desk support with stock assessment experts



The image shows a composite of three screenshots. The top left is the 'i-marine menu' dashboard with a navigation bar and a 'Statistics' section. The top right is a 'Share updates' form. The middle section is a 'News feed' with a post from Anne Elise Nieblas. The bottom left is a chat message from Patricia Hubert Medar. The bottom right is the 'Stock Monitoring Tool' interface, showing the 'CMSY (Catch-Maximum Sustainable Yield) Method' workflow, a 'Data Upload' section with a 'Choose Input CSV File' field, and a 'Time series' graph showing catch data from 2000 to 2015.



Dr Anne-Elise Nieblas, FAO
(English, French)



Dr Andrea Dell'Amico, CNR
(English, Italian)



Dr Paul Tuda, ZMT/FAO
(English)



Dr Gorka Merino, AZTI
(English/Spanish)



Dr Haritz Arrizabalaga, AZTI
(English/Spanish)



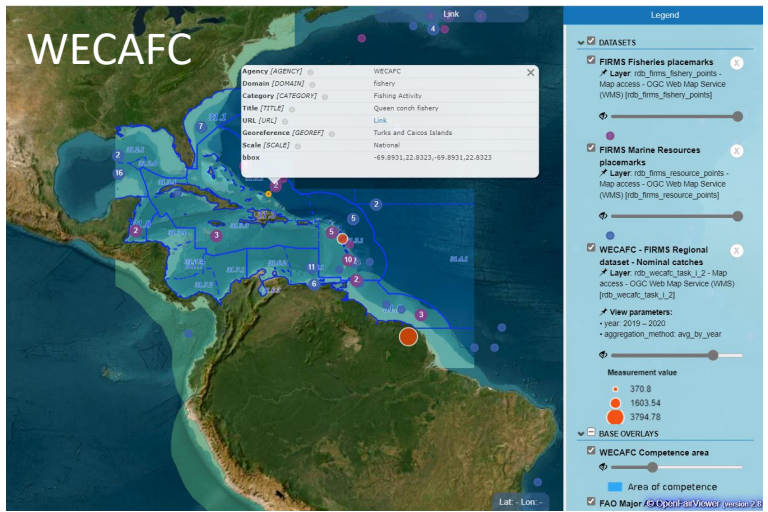
Dr Youen Vermard, Ifremer
(English/French)

POLICY

SCIENCE

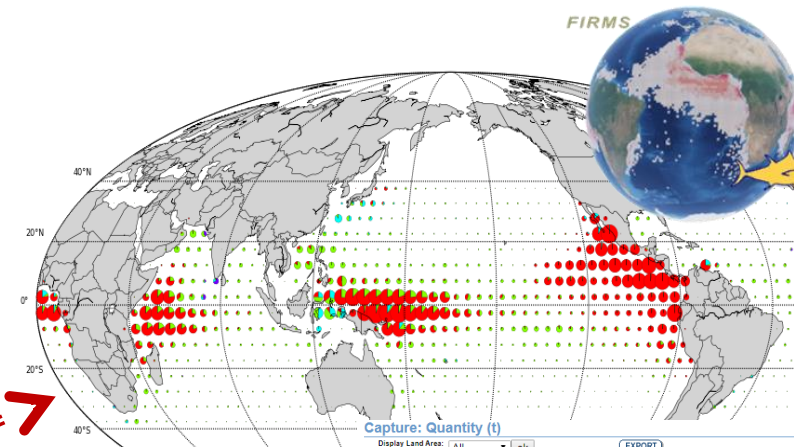
DATA

WECAFIS - <https://www.fao.org/wecafc/data/wecafis/en/>

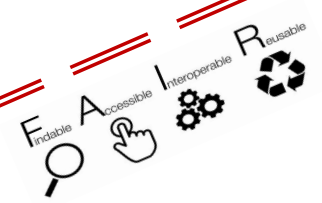


Global Tuna Atlas

<https://www.fao.org/figis/geoserver/tunaatlas/>

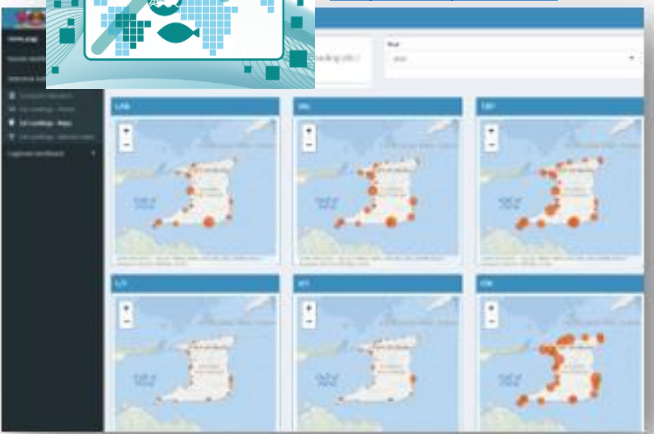


Regional databases support to shared stock assessment



Calipseo

<https://www.fao.org/fishery/en/topic/18041>



National fisheries information systems

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REGIONAL

GLOBAL

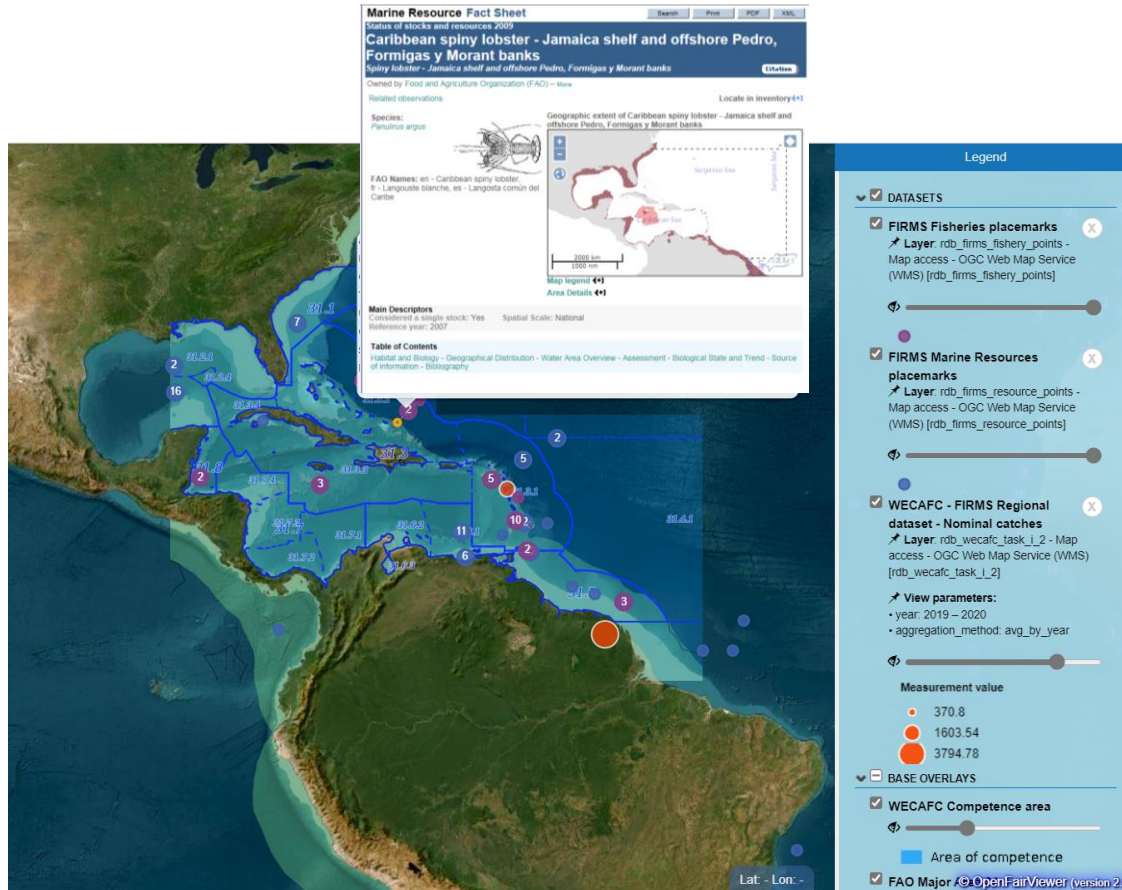
AO - Fisheries and Aquaculture Information and Statistics Branch - 23/09/2019



Atlases in support to Science-to-Policy interface

Fact sheets on stock status

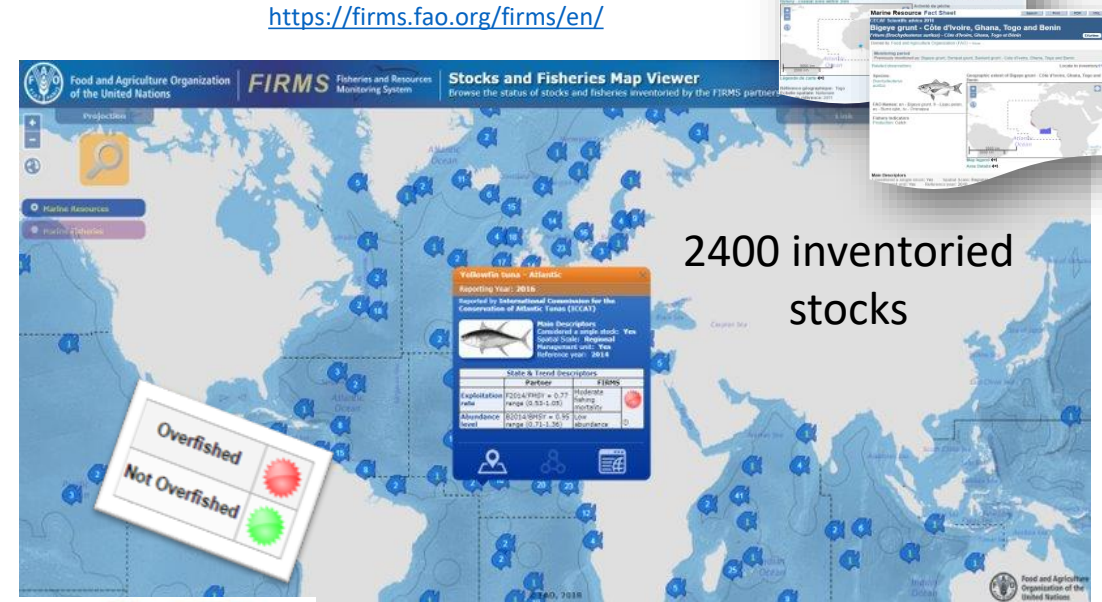
POLICY



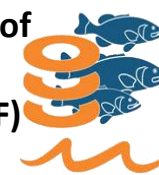
WECAFIS - <https://www.fao.org/wecafc/data/wecafis/en/>

Regional database in support to management policies

SCIENCE



Global Record of Stocks and Fisheries (GRSF)



DATA

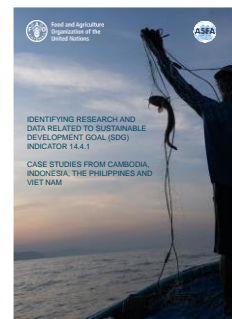
NATIONAL

REGIONAL

GLOBAL

Digging up local / non accessible information – OpenASFA

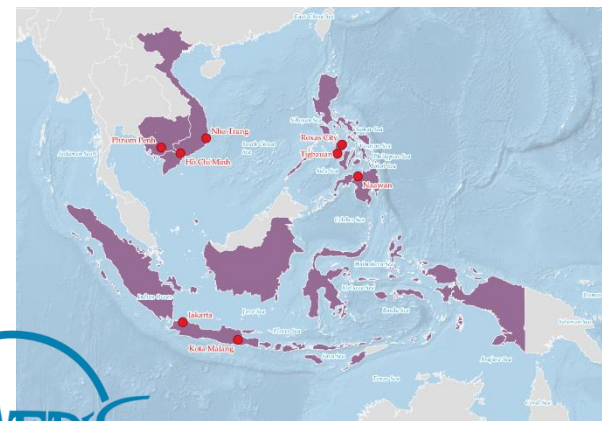
Identifying research and data related to SDG Indicator 14.4.1



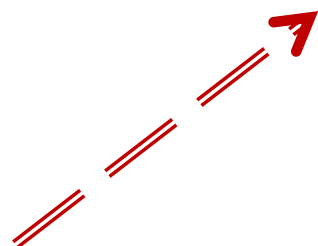
FAO-ASFA-SEAFDEC report



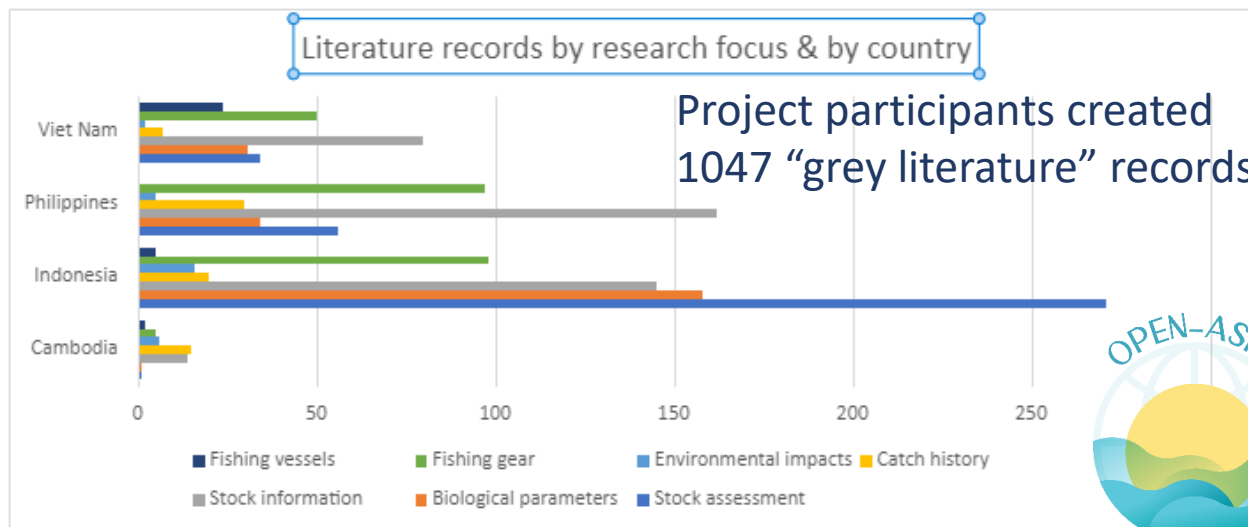
SDG 14.4



“our research studies will be cited not just locally but also internationally.”
Ethelyn A. Maglangit, Mindanao State University- Naawan, Philippines



Literature records by research focus & by country



Project participants created 1047 “grey literature” records

SCIENCE

INFORMATION / DATA

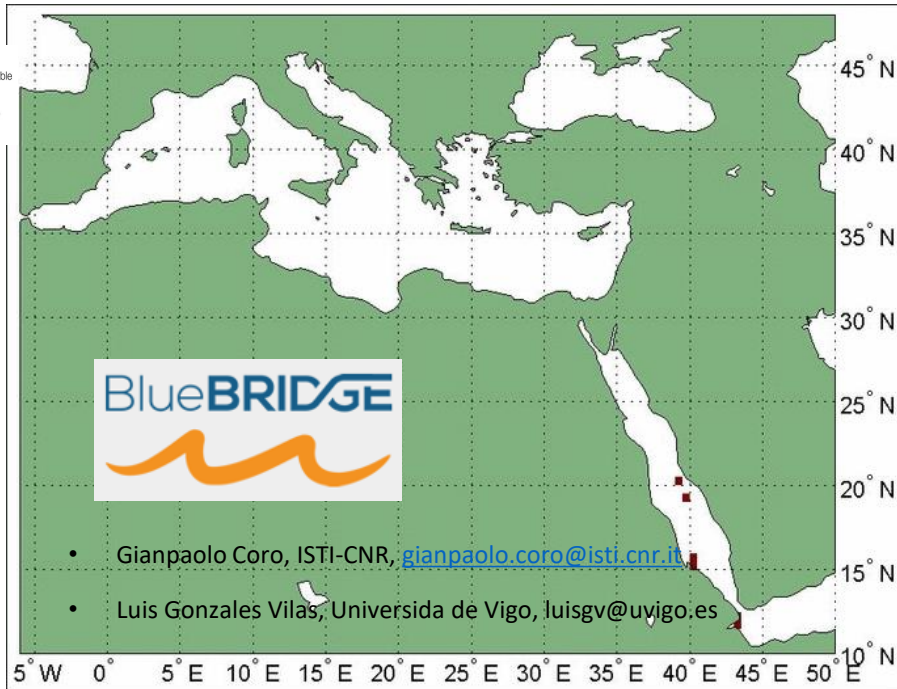
LOCAL\NATIONAL

REGIONAL

GLOBAL

On contributions for mainstreaming biodiversity in fisheries

14.2



Predictions of spread of invasive species – case of Puffer fish *Lagocephalus sceleratus* in the Mediterranean

Distributions of 1508 species living in European seas and their projections for 2050 and 2100 <https://zenodo.org/records/7898942>

14.5



Possible candidate for the reporting of Other Effective Conservation Measures (OECMs) in marine fisheries, under Target 3 of Kunming-Montreal Global Biodiversity Framework

Thank you for your attention

- Looking forward to the discussion

