

neosc | Blue-Cloud2026

Third Federation Workshop

5-6 November 2025, Brussels [Belgium]



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Better science through international collaboration for fisheries sustainability in SDG14

Keynote

Marc Taconet, FAO

5-6 November 2025, Brussels [Belgium]



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the European Union



Food and Agriculture
Organization of the
United Nations



Better science through international collaboration for fisheries sustainability in SDG14

FAO partnerships and Virtual Research Environments to support global monitoring of state of fishery stocks

Marc Taconet (FAO), Team leader Information and Knowledge Management, with

Rishi Sharma (FAO), Aureliano Gentile (FAO), Kiran Viparthy (FAO), Anne-Elise Nieblas (FAO), Anton Ellenbroek (FAO), Bracken VanNiekerk (FAO), Emmanuel Blondel (FAO), Yann Laurent (FAO), Arturo Munhoz (FAO), Julien Bardes (IRD), Bastien Grasset (IRD), Yannis Marketakis (FORTH), Brad Spear (SFP), Mickael Melnychuk (UW), Pasquale Pagano (CNR-ISTI)

by Marc Taconet, et al.

Team leader

FAO Fisheries and Aquaculture Division, Rome

Marc.taconet@fao.org

Blue Cloud 2026, Third Federation workshop , 5 - 6 November 2025, Brussels, Belgium



Food and Agriculture
Organization of the
United Nations

BLUE TRANSFORMATION

Sustainable fisheries

2 ZERO
HUNGER

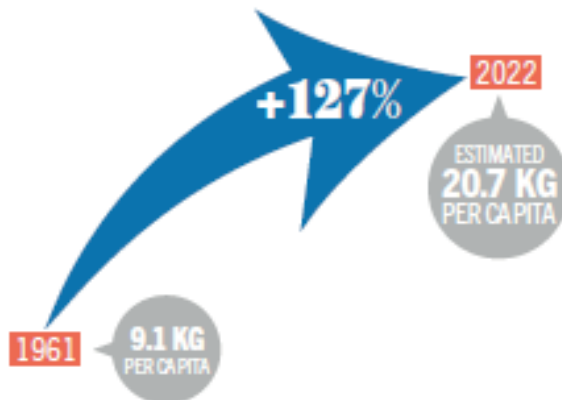


14 LIFE
BELOW WATER

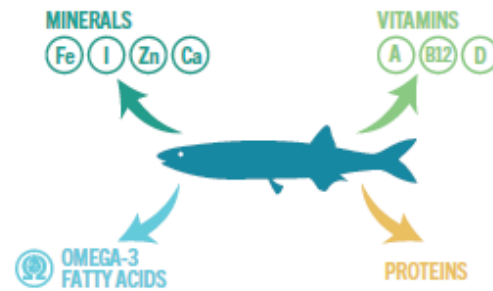


CONSUMPTION

WORLD APPARENT CONSUMPTION
OF AQUATIC ANIMAL FOODS PER
CAPITA PER YEAR



AQUATIC FOODS AND NUTRITION



Sustainable Aquaculture

Upgraded Value Chains

Overview of SDG 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

14.1

14.2

14.3

14.4

14.5

14.6

14.7

14.a

14.b

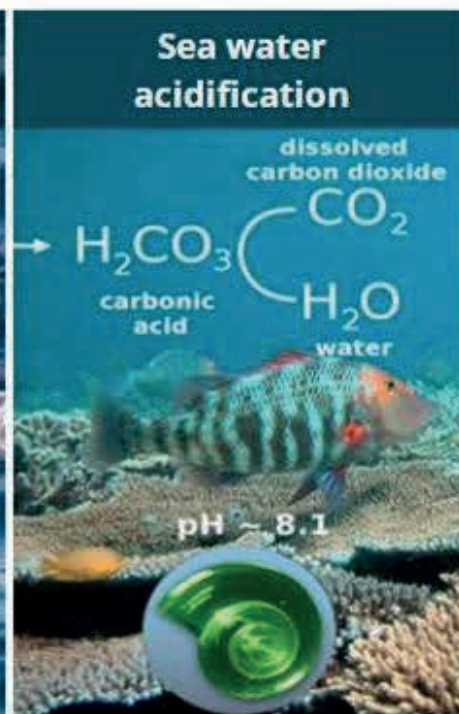
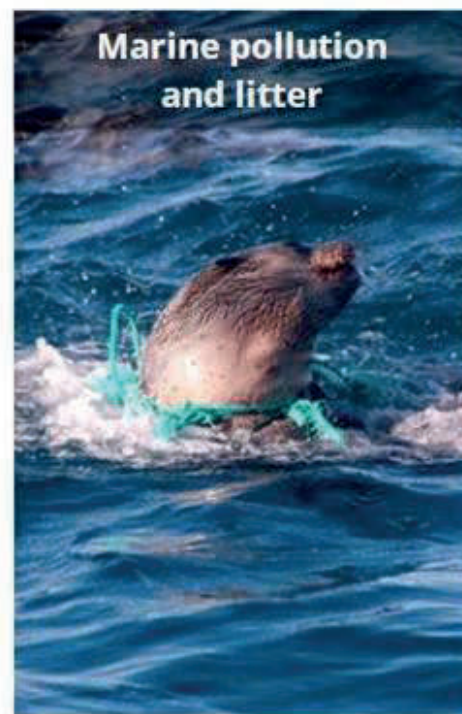
14.c

10 targets to address:

Degradation of marine environment / ocean health

Protection of marine environment

Sustainable use of marine living resources

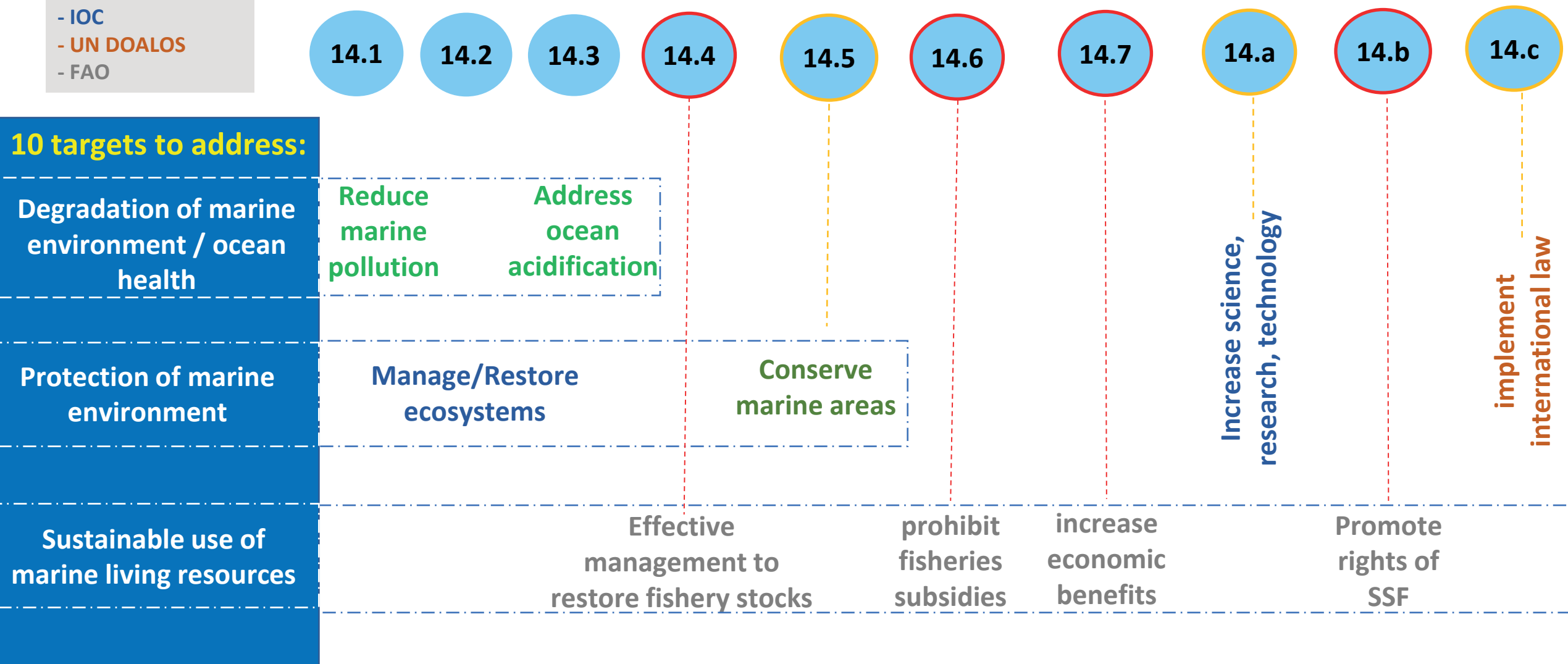


Overview of SDG Goal 14

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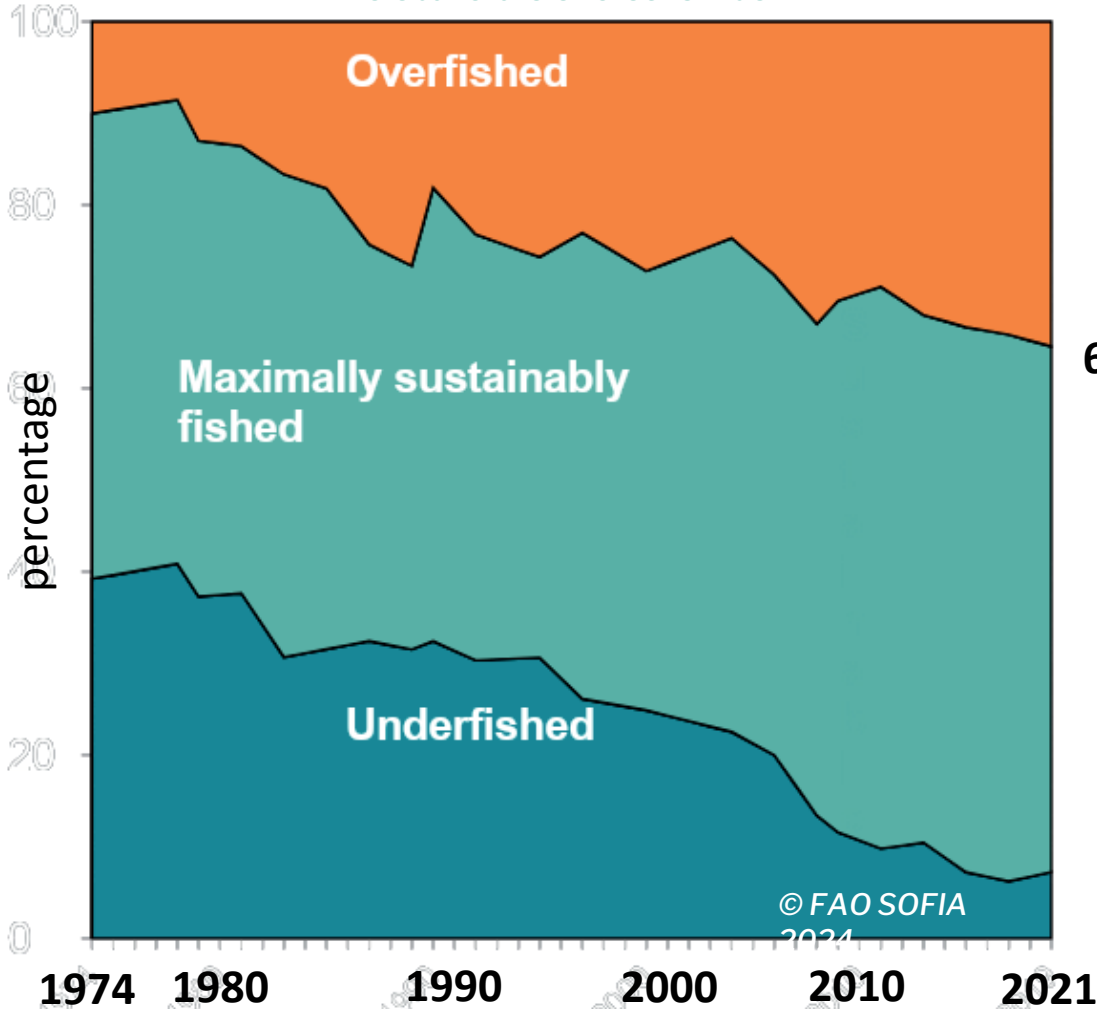


SOFIA Global Fish Stocks Status Monitoring – SDG 14.4.1

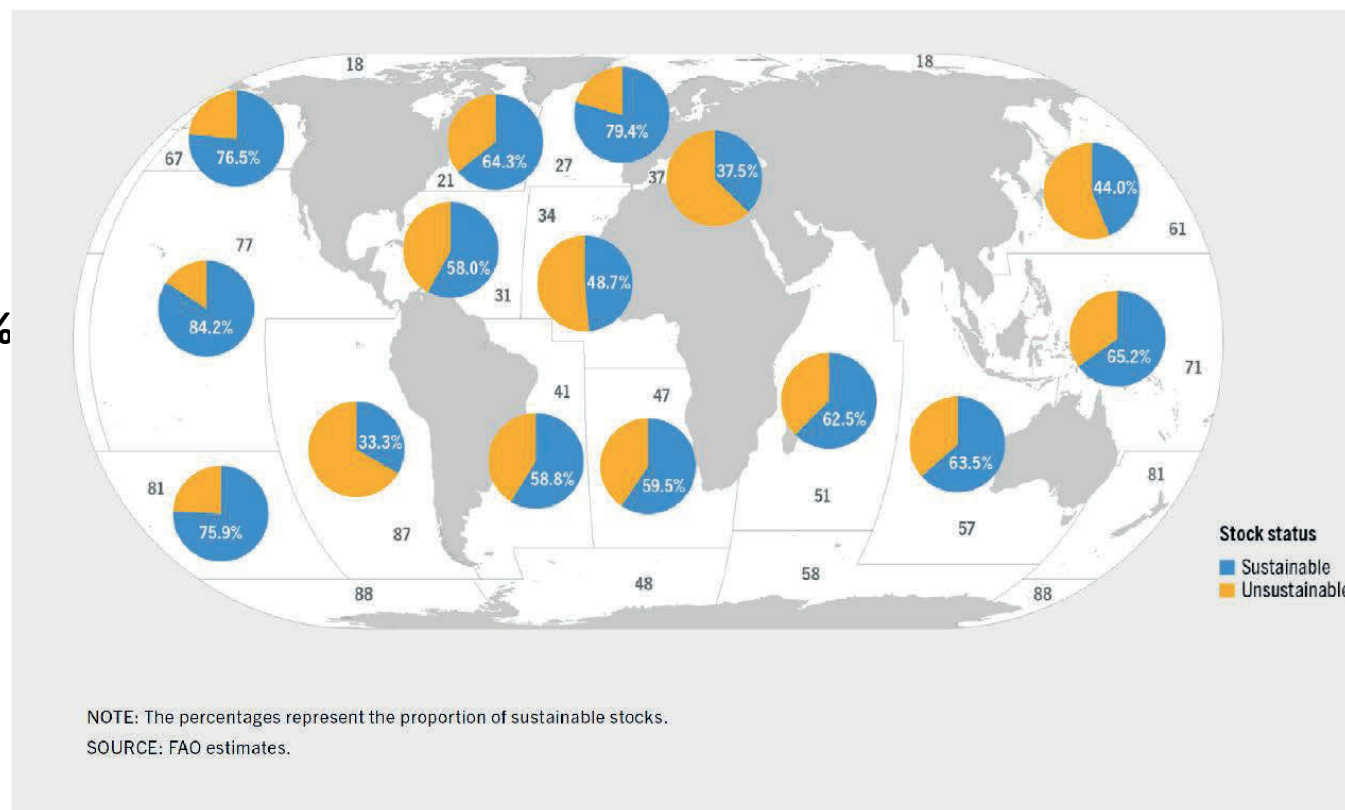
Comprehensive overview of global and regional marine fisheries resources, supporting policy and management strategies for long-term sustainability of fisheries



Global State of Stocks index



Regional index



FAO State of Stocks Index describes status and trends of fish stocks with respect to MSY-based reference point



SOFIA Global Fish Stocks Status

Monitoring

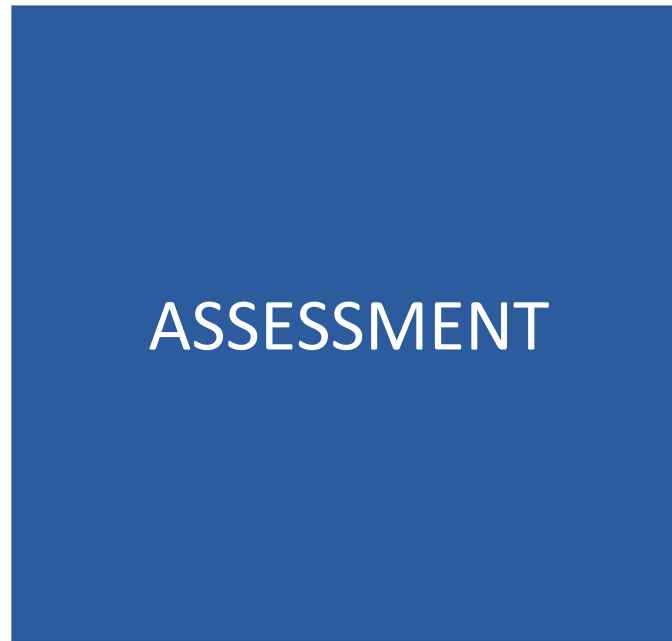
Time is right to conduct a methodological update

improvement should include:

(1) Enhanced coverage of global fisheries



(2) More accurate / precise assessments



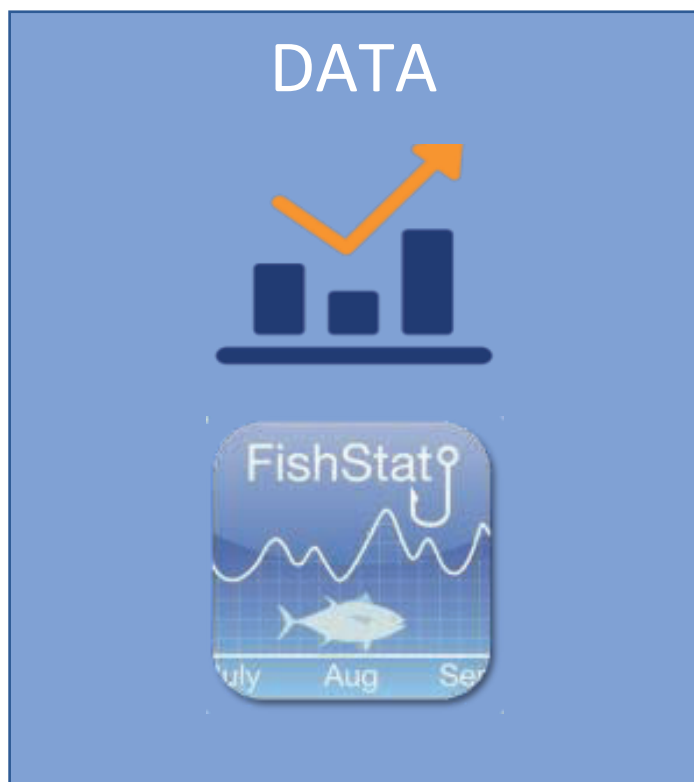
(3) More transparent frameworks and reporting



(4) Enhanced expert inputs / incorporates greater local knowledge.

SDG14.4.1 complex indicator – the updated methodology faces significant challenges

(1) Enhanced coverage of global fisheries



- Requires increased availability / quality of time series of catch & effort data

Catch

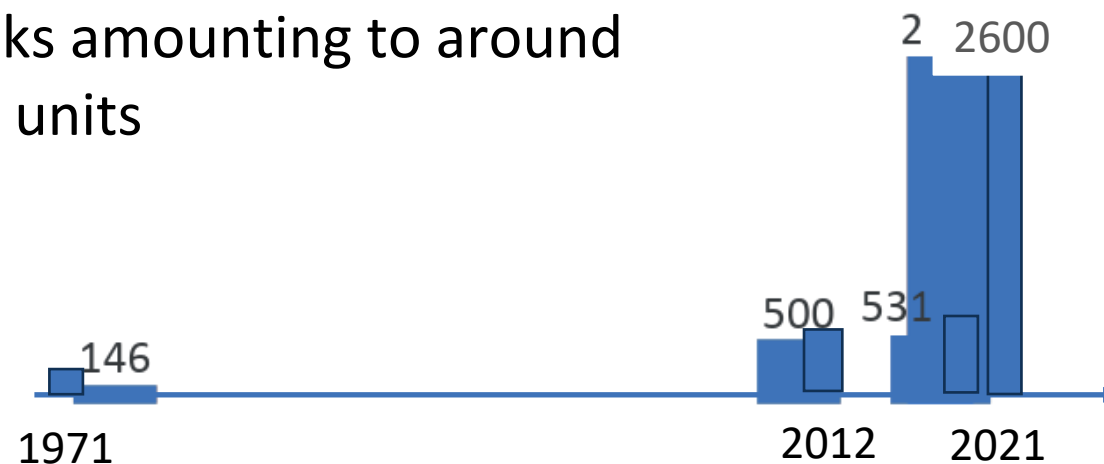
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CPUE

X

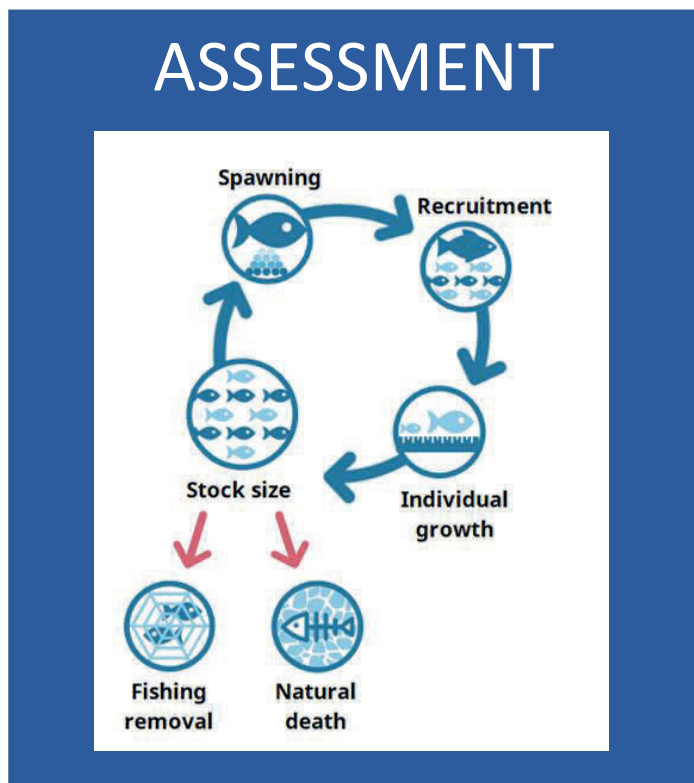
Effort

- Will now rely on a much-expanded List of Stocks amounting to around 2600 stock units

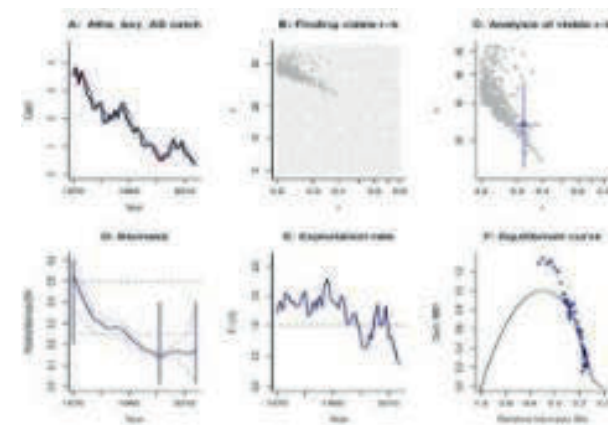


SDG14.4.1 complex indicator – the updated methodology faces significant challenges

(2) More accurate / precise assessments



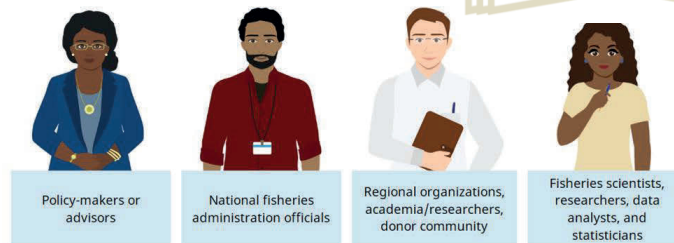
- Identification of methods functional in data poor situations
- Need for massive development of analytical capacities for stock assessment



Why should you take this course?

This course is primarily intended for those who play a role in collection of stock assessment, and reporting for the **Indicator 14.4.1 of the Sustainable Development Goals**. People with an interest in the process, such as members of the fishing co-operatives may be interested in the course:

Click on each person to learn about their interest.





SOFIA Global Fish Stocks Status

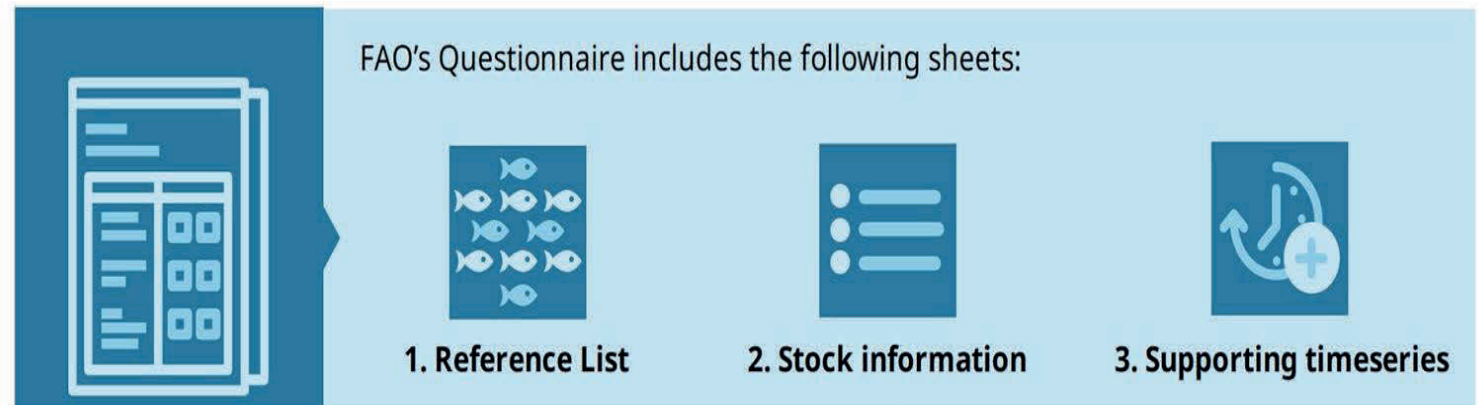
Monitoring

Sub-Item 1 Complex indicator – the updated methodology faces significant challenges

(3) more transparent frameworks and reporting



- Ensure a regular update and dissemination on a biennial basis of evidence-based reports for 2600 units





FAO can meet the challenge thanks to its mandate and partnerships



NGOs and research institutes



Regional Fisheries Bodies

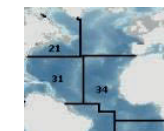


CWP

Coordinating Working Party on Fishery Statistics



Classifications



ASFIS
ISSCFG
ISSCFV
ISSCFC



Stock and fisheries monitoring



Digital platforms & innovation



Reporting national SDG14.4.1 indicator

Reporting fishery statistics

National Technology institutes



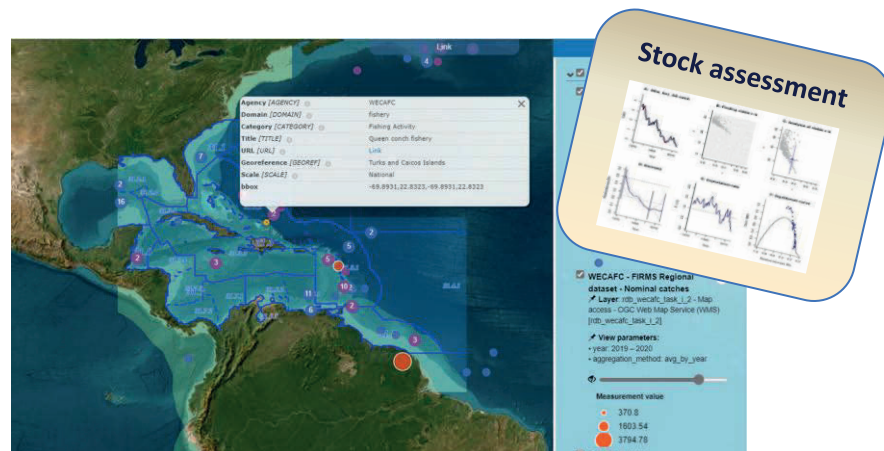
National Fisheries research institutes

National Direction of fisheries

Empowers Countries and Regional Fishery Bodies for data sharing in support to assessment of shared stock

SCIENCE

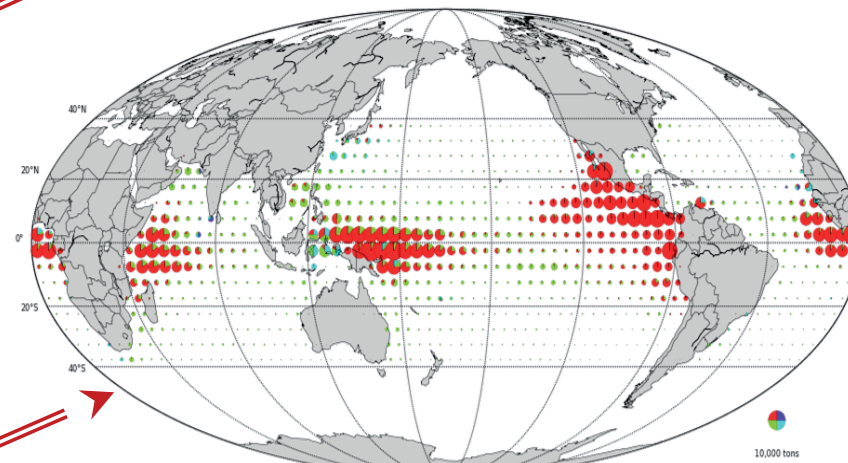
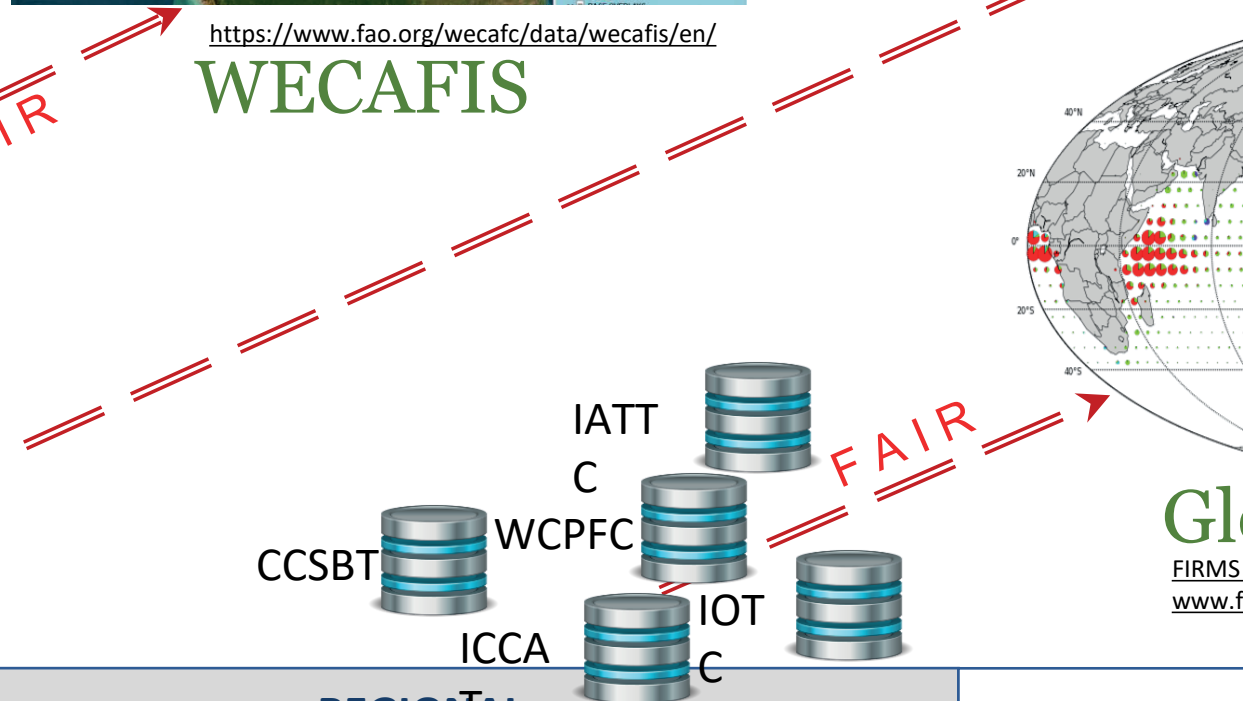
DATA



Reporting Catch and Effort

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

Calipseo



Global Tuna Atlas

FIRMS Global Tuna Atlas (GTA) - All Information Collections
www.fao.org/fishery/geoserver/tunaatlas/

NATIONAL

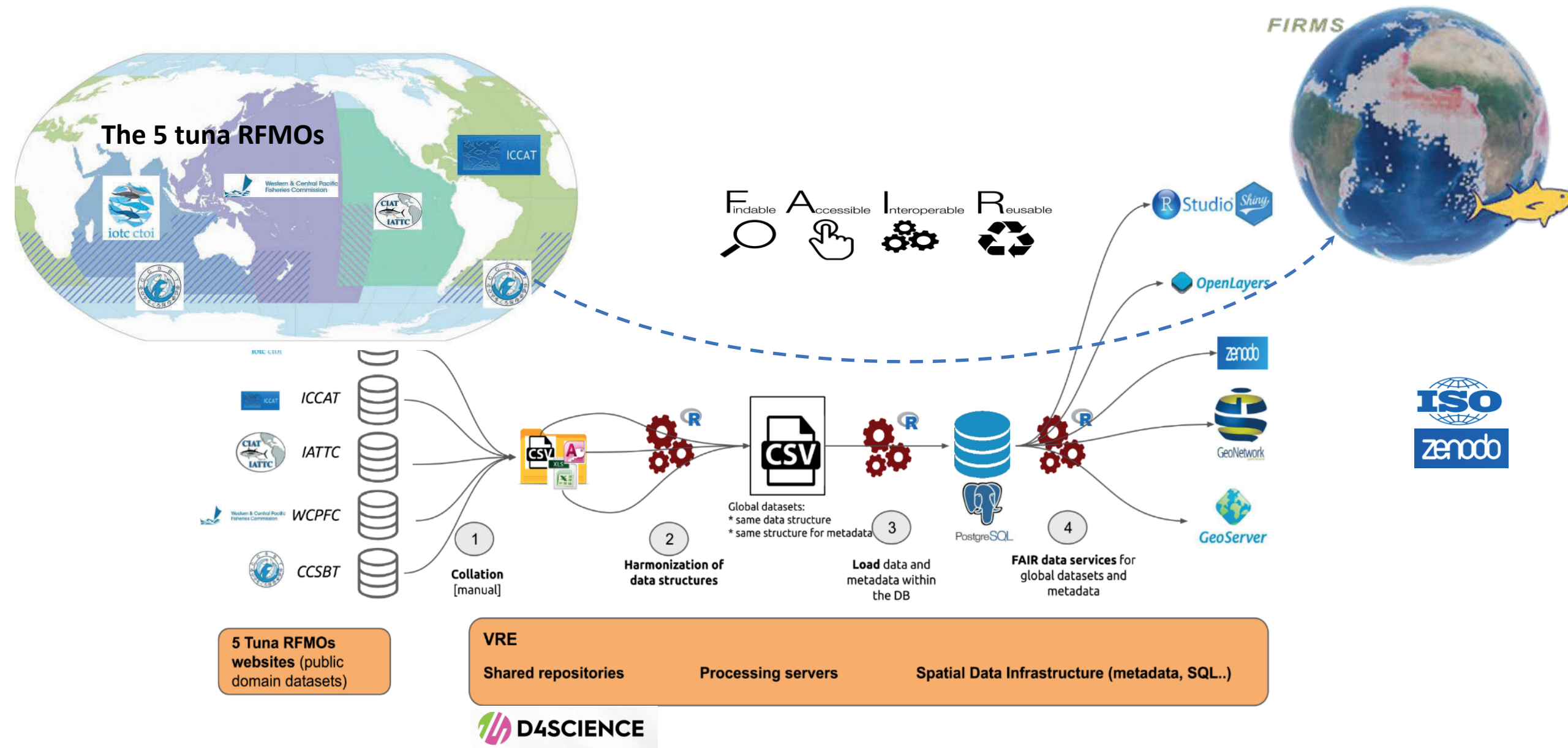
REGIONAL

GLOBAL

FAIR data flows along the data value chain

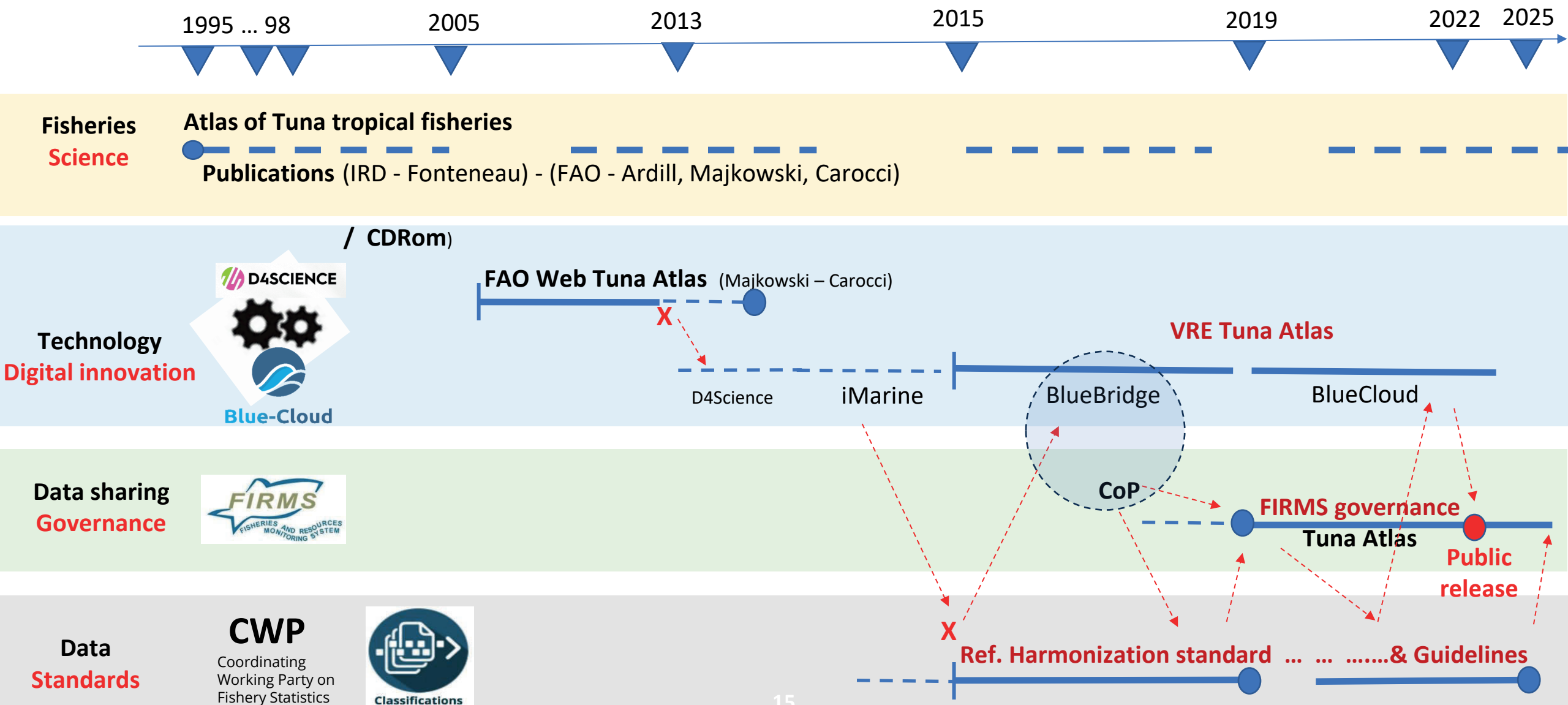
DATA

– ex. the FIRMS Tuna Atlas [fisheries Atlas]

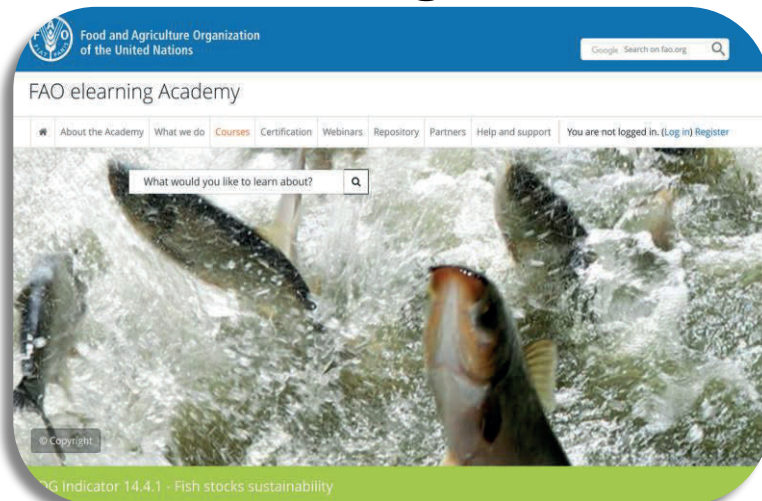




Collaboration efforts for a sustainable FIRMS global Tuna Atlas



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

SDG Indicator 14.4.1_Lesson 5

Lesson 5

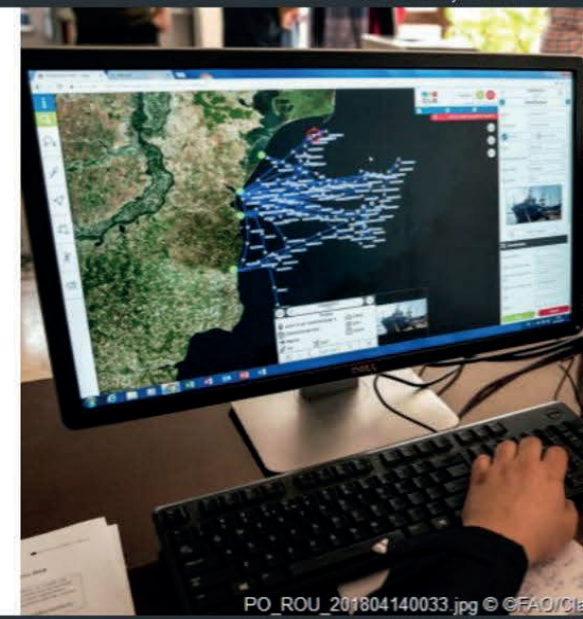
Guidelines for national reporting of SDG Indicator 14.4.1

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.

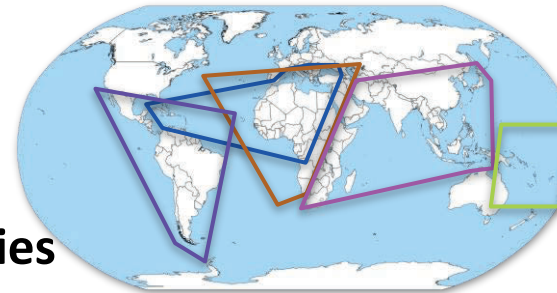
⌚ 40 minutes

📄 Text-only version

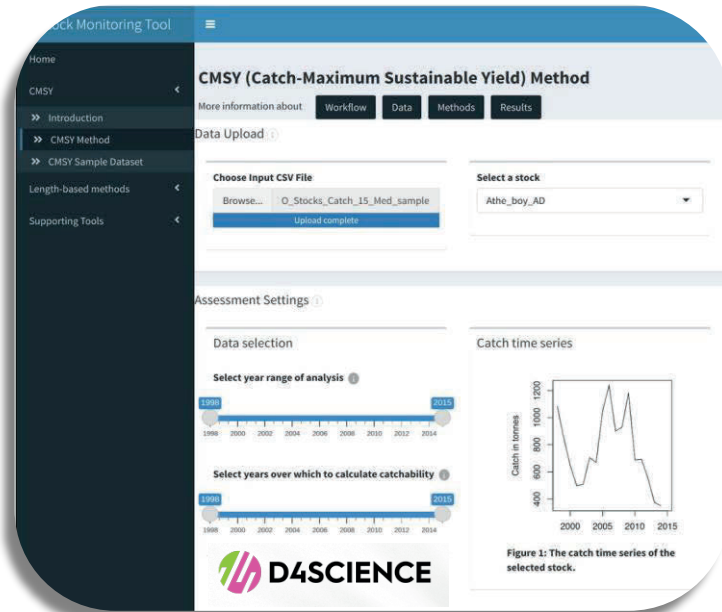


Global / regional online and in person workshops

- videos, slides, tutorials, datasets in EN, ES, FR
- **>1000 participants worldwide from >100 countries**





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



<https://i-marine.d4science.org/group/sdg-indicator14.4.1>

SOFIA-TAF - SOFIA Transparent Assessment Framework (d4science.org)

- **SDG 14.4.1 Stock Monitoring Tool** to explore data-limited methods 
- **SOFIA-Transparent Assessment Framework.**  hosting SRA+



**Questionnaire
SDG14.4.1 indicator**



Help desk support with stock assessment experts



Dr Rishi Sharma FAO



Dr Anne-Elise Ni eblas, 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)



Global Record of Stocks and Fisheries (GRSF)

REPORTING



Questionnaire

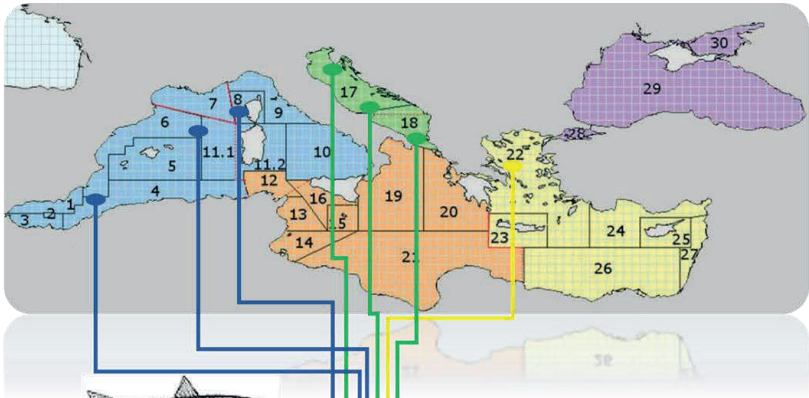
FAO SDG 14.4.1

Other sources - regional workshops on stock status (2023-24)

A global repository with **GRSF** Unique Identifiers for stocks and fisheries

The GRSF standard – implements harmonization and enables interoperability

FAIR



- Anchovy - Adriatic Sea
- Anchovy - Aegean Sea
- Anchovy - Gulf of Lion
- Anchovy - Northern Adriatic Sea
- Anchovy - Northern Alboran
- Anchovy - Northern Spain
- Anchovy - Southern Adriatic Sea

- ID ASFIS:ANE + GSA:17-18 UUID 6e44250b-fd04-337e-91d7-f7b6840bb86
- ID ASFIS:ANE + GSA:22 UUID 63d689ec-ef49-3b22-a37a-bb49d00e1638
- ID ASFIS:ANE + GSA:7 UUID a965318a-4b29-3b6f-b9a6-4ed6a676c779
- ID ASFIS:ANE + GSA:17 UUID 72a47857-eb5a-324f-8f69-78b622bc55e7
- ID ASFIS:ANE + GSA:1 UUID 834d0773-23ed-3d34-bbde-253a3ef5eaa6
- ID ASFIS:ANE + GSA:6 UUID e5de7186-6b88-325e-8cd1-68d933943cb4
- ID ASFIS:ANE + GSA:18 UUID 4c437c98-d37c-37a5-99d9-d5e4cd82360e

Stock name	Human readable Semantic code	Machine readable code	QR code
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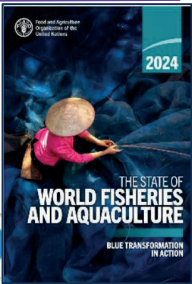


SOFIA
State of Stocks Index



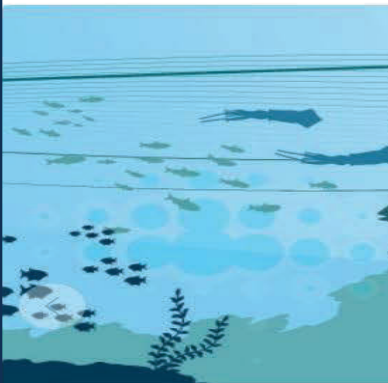
Coming next - Dissemination of stock-by-stock information through FIRMS website

SOFIA
State of
Stocks Index



Fisheries and Resources Monitoring System (FIRMS)

About FIRMS Concepts and definitions Partners Data **FAO State of Stocks Index** Publications Meetings



Our mission

The primary aim of the FIRMS is to provide the global monitoring and assessment of the world's fisheries and aquaculture resources.

By FAO Major Fishing Area: "Atlantic, Northeast (Major Fishing Area 27)"x

SHOWING 1-30 OF 173 RESULTS

Title	Tier	Ref. Year	Data Provider	Fact Sheet
Angler - Bay of Biscay South and Portuguese Waters East	1	9999	ICES	ICES CIEM
Angler - Irish Sea, West of Ireland, Porcupine Bank, English Channel, Bristol Channel, Celtic Sea, Southwest of Ireland and Bay of Biscay	1	9999	ICES	ICES CIEM
Anglerfish - Skagerrak, Kattegat, North Sea, West of Scotland and Rockall	1	9999	ICES	ICES CIEM
Atlantic cod - Baltic Sea (Eastern part)	1	9999	ICES	ICES CIEM
Atlantic cod - Baltic Sea (Western part)	1	9999	ICES	ICES CIEM
Atlantic cod - Barents Sea, Norwegian Sea, Spitzbergen and Bear Island	1	9999	ICES	ICES CIEM
Atlantic cod - Barents Sea, Norwegian Sea, Spitzbergen, and Bear Island North of 67°N (coastal waters)	1	9999	ICES	ICES CIEM
Atlantic cod - Faroe Bank	1	9999	ICES	ICES CIEM
Atlantic cod - Faroe Plateau	1	9999	ICES	ICES CIEM
Atlantic cod - Icelandic grounds	1	9999	ICES	ICES CIEM
Atlantic cod - Irish Sea	1	9999	ICES	ICES CIEM

Refine search

By FAO Major Fishing Area

Atlantic, Northeast (Major Fishing Area 27) (173)

By Jurisdictional distribution

Shared between nations (87)

National (18)

National/shared - undetermined (6)

By ISSCAAP

Cods, hakes, haddocks (50)

Flounders, halibuts, soles (38)

Lobsters, spiny-rock lobsters (25)

Miscellaneous demersal fishes (19)

Herrings, sardines, anchovies (19)

Uniqueness of the Approach:

- Transparent
- Evidence-based
- Replicable
- Consultative
- Buy-in from countries and RFBs



Coming next - Dissemination of stock-by-stock information through FIRMS website

SOFIA
State of
Stocks Index



Fisheries and Resources Monitoring System (FIRMS)

About FIRMS Concepts and definitions Partners Data **FAO State of Stocks Index** Publications Meetings



FAO State of Stocks Index (SOSI)

Stock status - Area/Species level List of assessed units

FAO State of Stocks Index

[Back to the search page](#)

FAO STATE OF STOCKS INDEX 2025

Atlantic cod - Icelandic grounds

Atlantic cod - Area 27 Division Va



UUID: 182f1148-4c60-3b13-a765-21b1b47ead61
GRSF Semantic ID: asfis:COD+fao:27.5.a



Species: *Gadus morhua*

[Species References](#)

Uniqueness of the Approach:

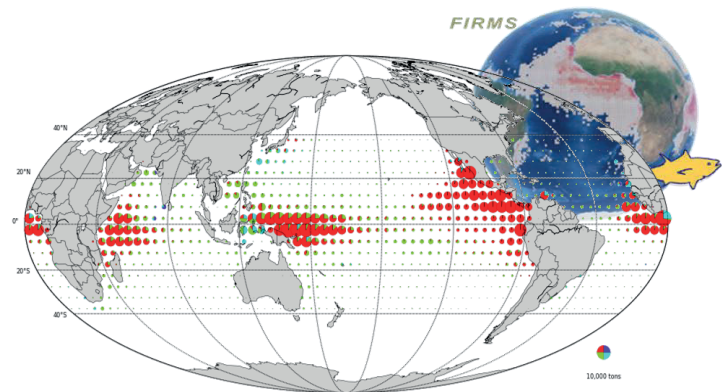
- Transparent
- Evidence-based
- Replicable
- Consultative
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IMPACTS AND POTENTIAL SOCIETAL BENEFITS, BEYOND

Supporting newly adopted international agreements in support to SDG Goal 14

GRSF



FIRMS Tuna Atlas



WORLD TRADE ORGANIZATION

WTO Fish Fund

The Fish Fund supports developing and least-developed WTO Members in implementing the Agreement on Fisheries Subsidies.

IMPLEMENTING THE WTO AGREEMENT ON FISHERIES SUBSIDIES

Challenges and Opportunities for Developing and Least-Developed Country Members



United Nations

Agreement on Marine Biological Diversity of Areas beyond National Jurisdiction
BBNJ Agreement





Food and Agriculture
Organization of the
United Nations

**Sustainability is not a State,
it's a process**

**For impact, we need
collaborations among CoPs ...**

**Scientists
Technology innovators
Standard setting bodies
Governance for data sharing**

Thank you ▪ Merci
Благодарю ▪ ¡Muchas gracias!
謝謝 ▪ شكرا

@marc.taconet@fao.org

Reference sites:

FAO SOFIA - <https://www.fao.org/publications/fao-flagship-publications/the-state-of-world-fisheries-and-aquaculture/en>

Review of the State of World Marine Resources 2025 - <https://openknowledge.fao.org/items/8bf1f881-9208-4c59-86e2-9ada635960dd>

FIRMS - <https://firms.fao.org/firms/home/en>

CWP - <https://www.fao.org/cwp-on-fishery-statistics/background/en/>

FAO Calipseo - <https://www.fao.org/fishery/en/statistics/software/calipseo>

FAO WECAFC / WECAFIS (iMarine) - <https://www.fao.org/wecafc/data/wecafis/en/>

GRSF catalog (iMarine) - <https://i-marine.d4science.org/web/grsf/data-catalogue>

Stock Monitoring Tool SDG 14.4.1 (iMarine) - <https://www.fao.org/fishery/en/knowledgebase/186>

SOFIA Transparent assessment framework (iMarine) - <https://www.fao.org/fishery/en/knowledgebase/265>

