

## New Approach to SOFIA: Global Analysis Aligning FIRMS with SOS-SOFIA

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# Some history

REVIEW OF THE STATUS OF EXPLOITATION OF THE  
WORLD FISH RESOURCES

Prepared by

Department of Fisheries

- Submitted to COFI and UNGA 1973
- Developed for LOS and other needs
- Established a baseline of conditions globally



FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS  
Rome, December 1974



## Outline

What has been done so far.  
What does FIRMS provide?

What have we learned  
from Area 34,41 & 51.

Next steps/Lessons learned

GRSF is an interactive web-based system that assigns unique identifiers to stocks and fisheries for an improved and comprehensive stock status data coverage

## Technical objective and key features

- Stock records from 4 major sources (FIRMS, RAM, FishSource, SDG14.4.1 Q2)
- Compiled, harmonised, described according to international standards for
  - Species
  - Area codes
  - Time-dependent data (state and trend, FAO stock status categories, abundance, fishing pressure, catch, biomass,...)
- Closely-controlled and monitored validation mechanism
- Each stock record receives a **universally unique identifier** (UUID) to facilitate management, merging, traceability of stocks between diverse data sources, over time
- UUIDs from GRSF already implemented (or soon to be) in RAMLDB, FishSource, ICES, SDG ...



| Number of Species   |  |                    |
|---------------------|--|--------------------|
| 1355                |  |                    |
| Total stock records | Approved stock records with public UUIDs | Review in progress |
| 3391                | 2322<br>(+146 archived)                  | 923                |



# SOS-TAF Tier classification

**Tier 1:** Recent, model-based stock status (from 2015 onwards)

**Tier 2:** No stock status since 2015, with 15-20 years of catch, landing, effort, other index data.

Most recent data point must be from 2015 onwards

- *Candidates for rapid assessment if sufficient data*

**Tier 3:** Recent, empirically-based stock status (from 2015 onwards)

**Tier 0:** Insufficient data, no data, or old data (Re Marine resources/stocks identified in reference sources)

*Opportunity for countries to contribute data*

- *Can be candidates for rapid assessment if sufficient data are found*

In support of SOFIA-TAF for Area 34, NFISI gathered stock records, status, and data for improved understanding of stock monitoring in region

## **\*Draft list of stocks subject to change\***

**FAO's Global Record for Stocks and Fisheries (GRSF)** - Knowledge base compiling stock records and data from:

- FIRMS (ICCAT, CECAF)
- RAM Legacy Stock Assessment database (published literature on stock assessments)
- FishSource (information focusing on fisheries status with some stock status)
- and 2019 fully validated SDG 14.4.1 Questionnaires

### **CECAF**

- Stock records and data not already incorporated in FIRMS

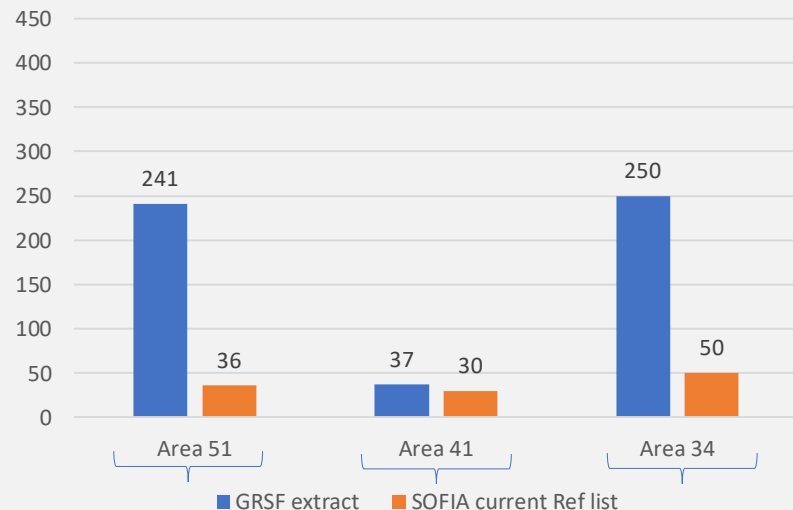
### **SDG 14.4.1 questionnaires**

- 2019 (QA1 validated with source reference)
- 2022 questionnaires (first-level QA: feedback to countries)

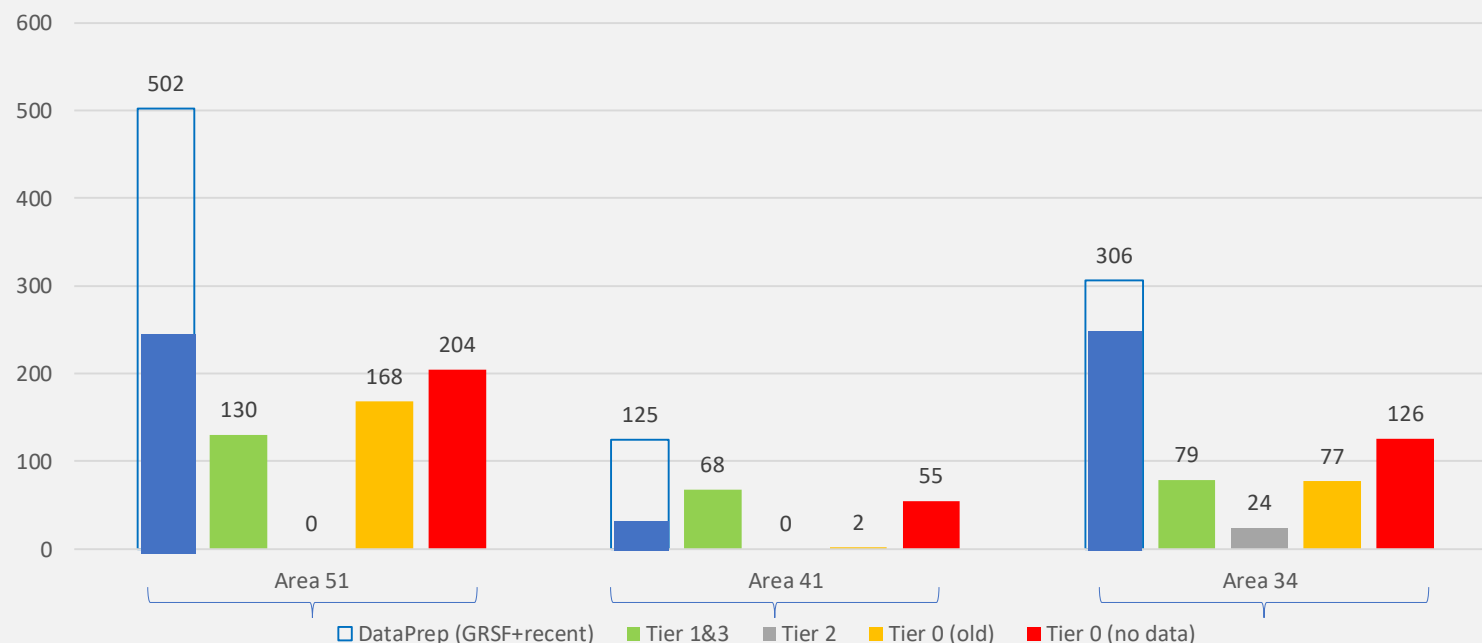


# Data Prep for pilot workshops (Feb. – May 2023)

Number stocks extracted from GRSF for  
SOFIA-TAF area workshops



DataPrep stock records (GRSF+recent) and availability by Tier  
for SOFIA-TAF area workshops



**528 stock records were extracted from GRSF** for the three SOFIA-TAF area workshops in FAO Areas 51/41/34 as part of a piloting exercise of the new SOFIA-TAF methodology

Then combined with FIRMS or SDG recent sources,  
**933 stock records were made available categorized by Tier**

Area 51: 130 records eligible Tier1/3 (26%)

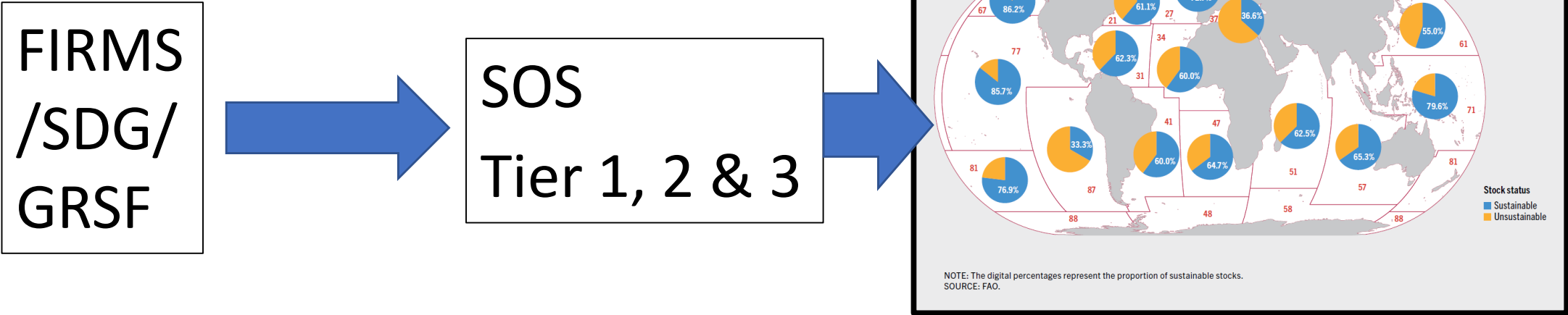
Area 41: 68 records eligible Tier1/3 (54%)

Area 34: 79 records eligible Tier1/3 + 24 Tier 2 (34%)

i.e. 301 records usable for potential integration in SOFIA-TAF together with any recent additional information collected during workshops



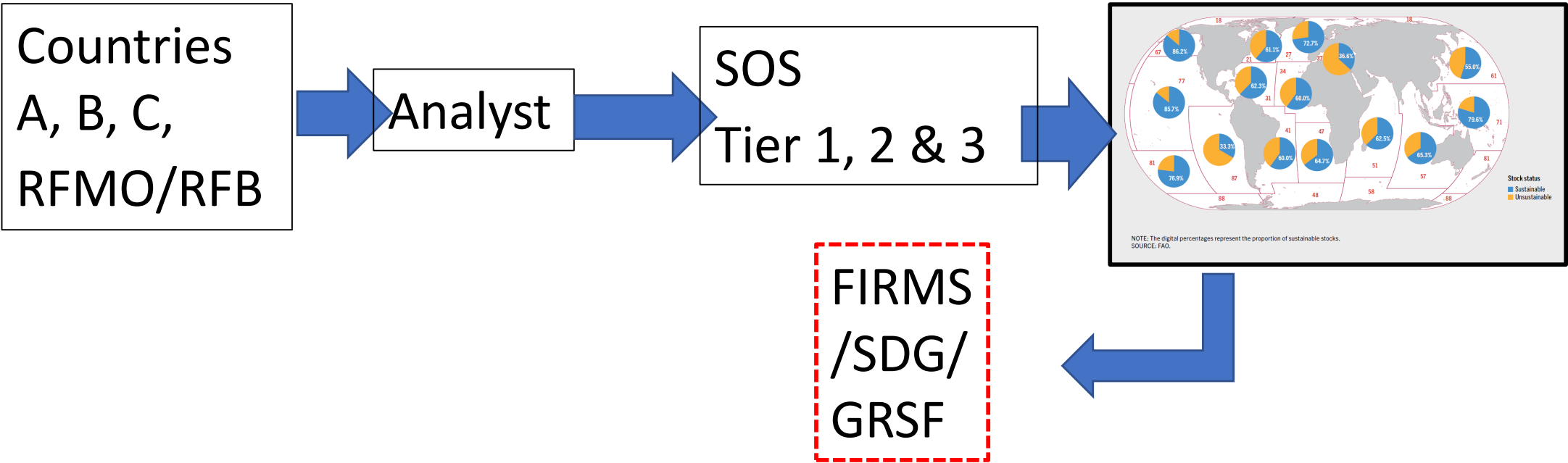
# Preferred Workflow





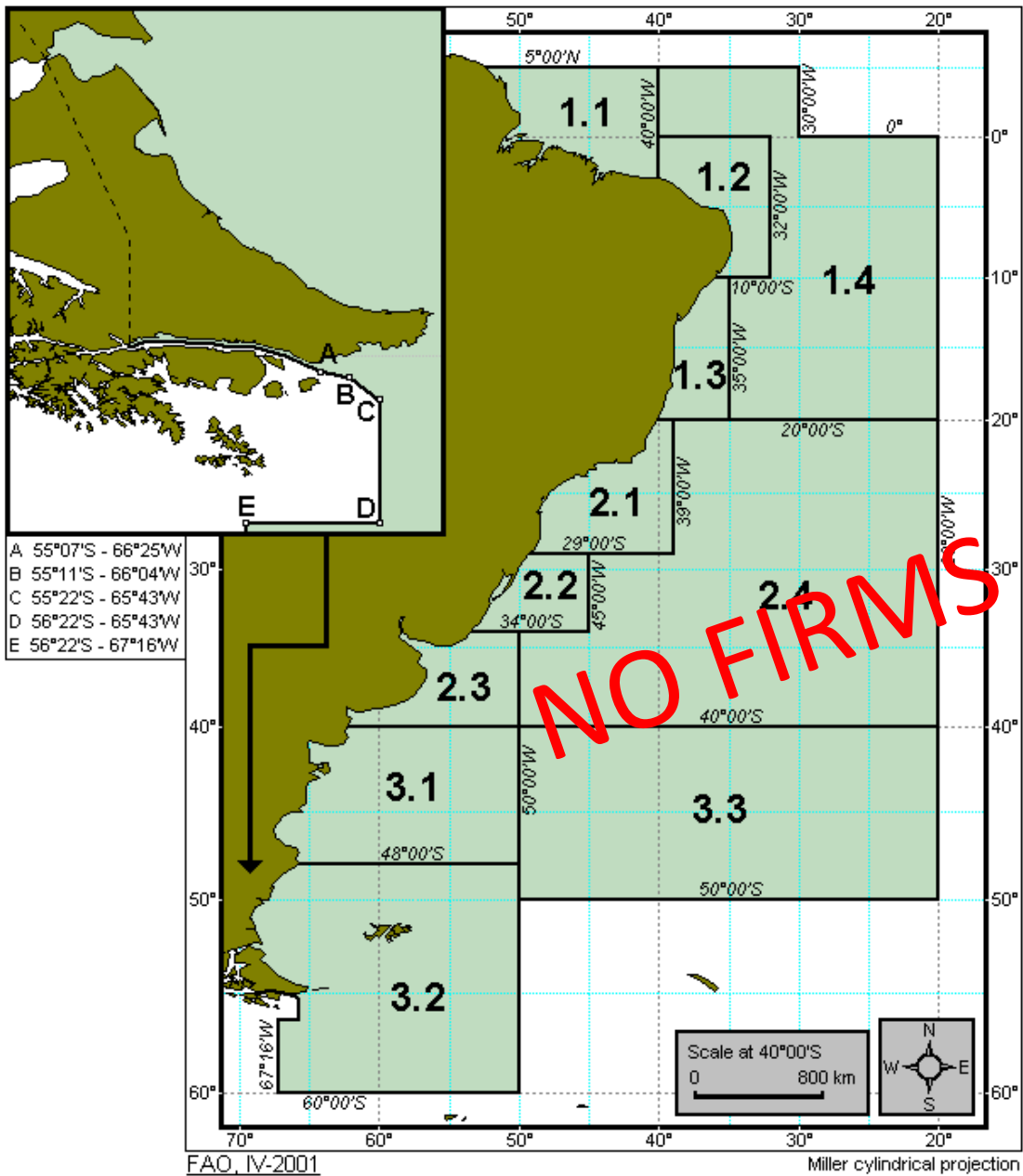


# Current workflow

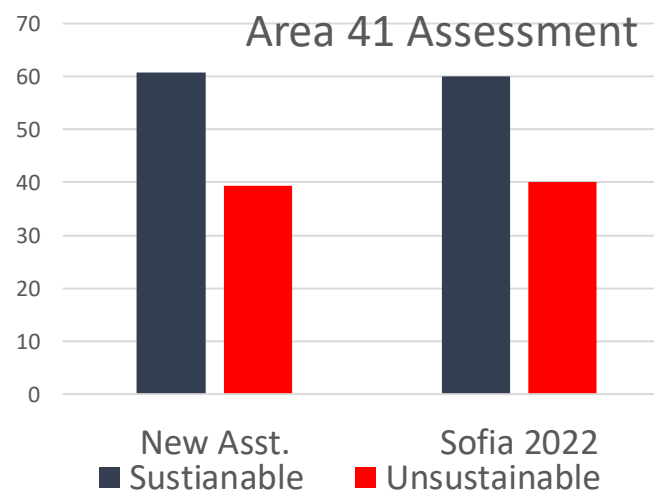


# What happened and Why?

- Area 41 and 34 did not use the list but developed with local knowledge and expertise
  - Area 34 list was not upto date; workflow issues
  - Area 41 was missing a RFB and engagement so data was not available
- Area 51 had limited capacity and we used the list from GRSF/SDG 14 and FIRMS.
  - RECOFI and SWIOFC Active and input provided.
  - SWIOFC list not upto date; so countries provided some inputs

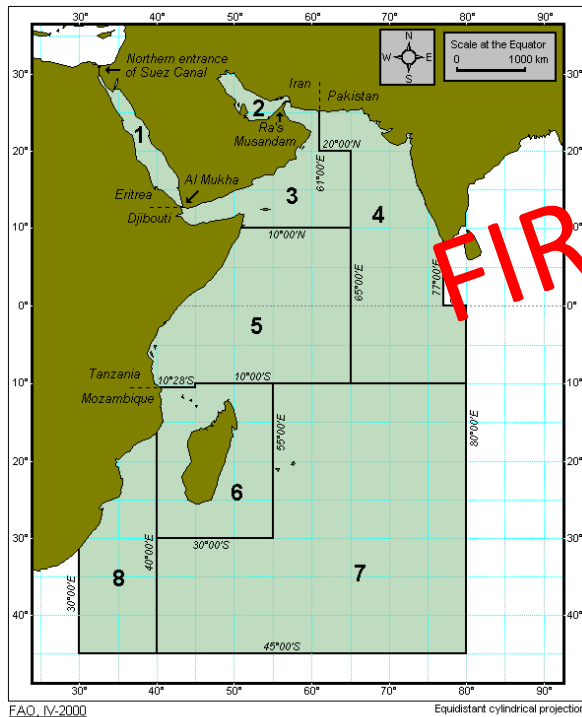


## Area 41-SW Atlantic



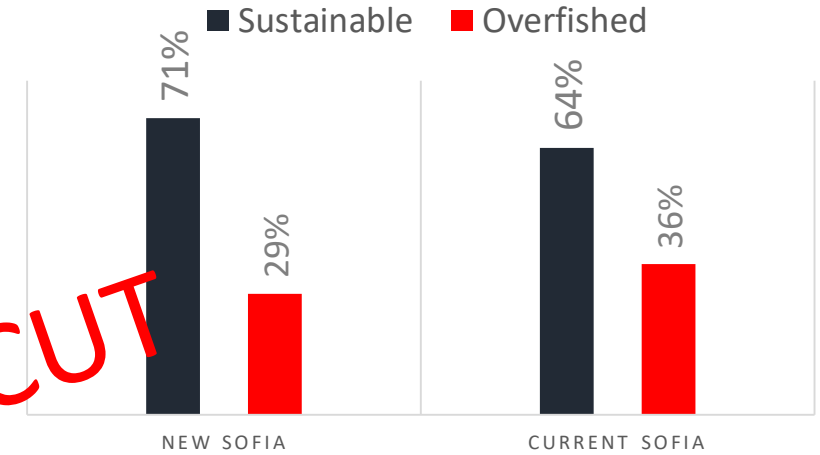
15 to 68 stocks

# Area 51-SWIO



FAO, IV-2000 Equidistant cylindrical projection

## AREA 51

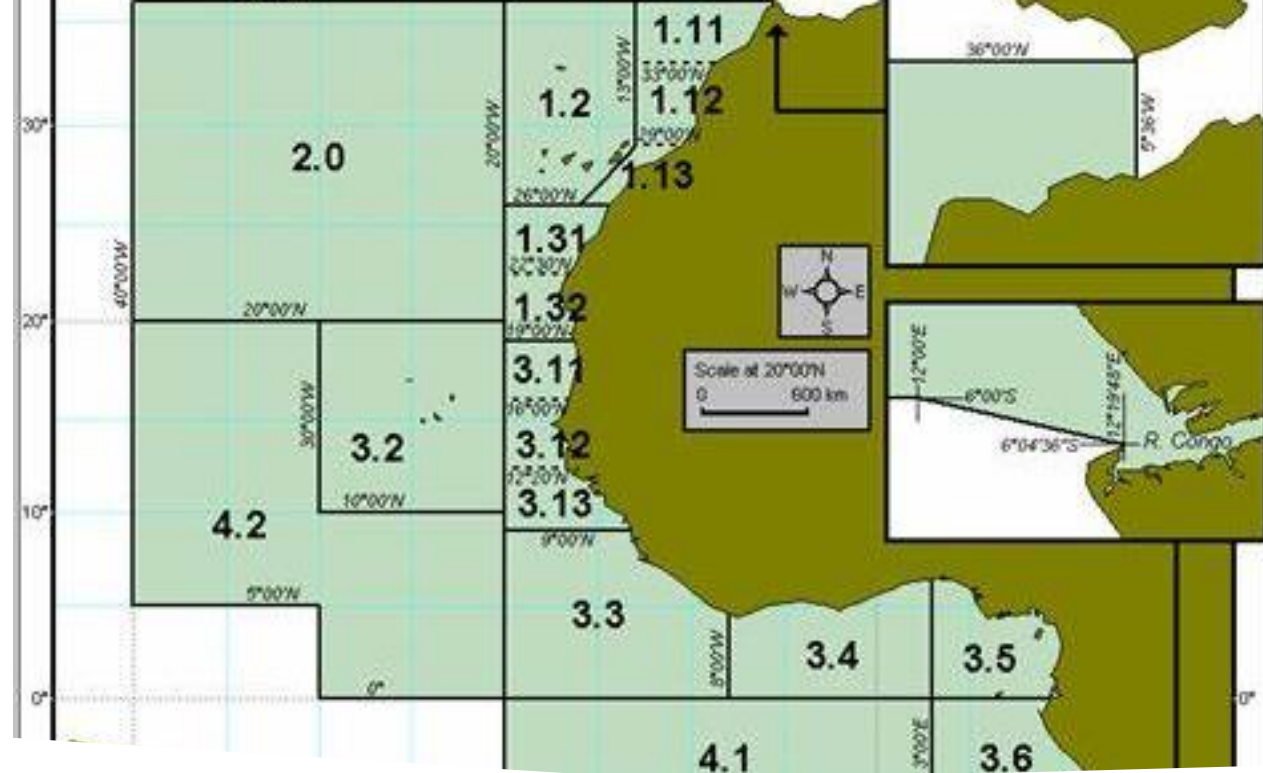


**FIRMS USED FOR 1<sup>st</sup> CUT**



30 to 298 stocks



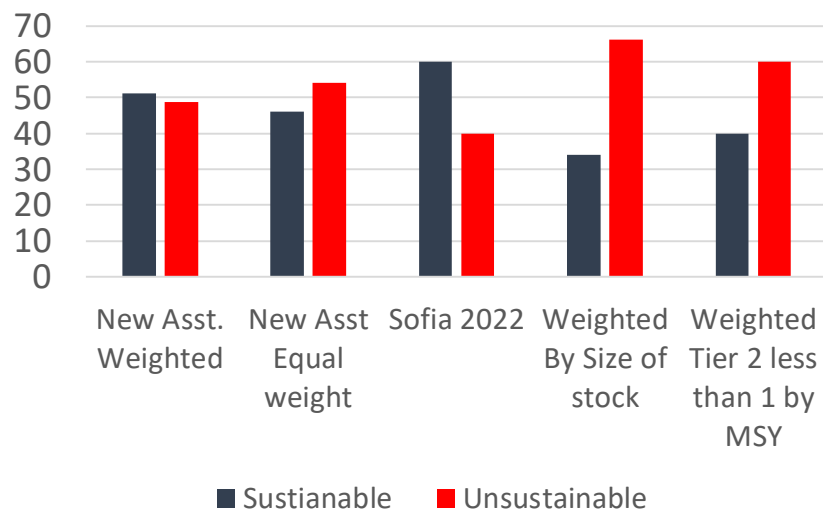


# Area 34 CECAF

36 to 135 stocks

**NO FIRMS**

Area 34 Summary



# Post-pilot SOFIA versus DataPrep – what's new

## Workshops:

data provided fully reused

Area 51 / SWIO

Area 41 and 34



Updated existing records

Area 34 (mostly from CECAF-WG)



1 or more stock records with  
old/insufficient data replaced with  
Tier 2 assessments at Sp x Area  
aggregated level



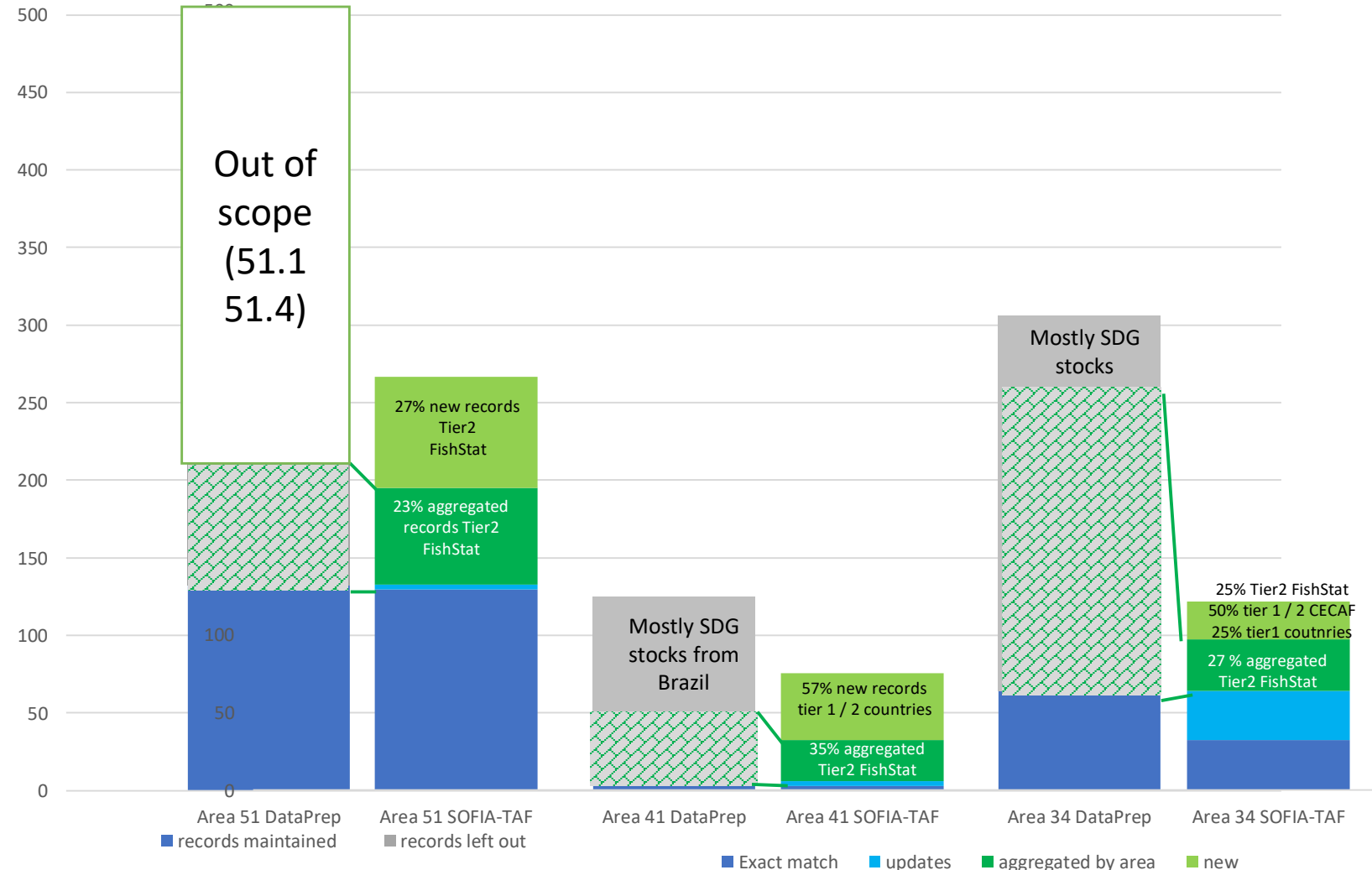
New records provided at sp level as tier 2  
FishStat or tier 1 / 2 countries



Other stock records not considered at all  
may be stocks with few landings/  
not an important species for the area



how DataPrep used in SOFIA-TAF



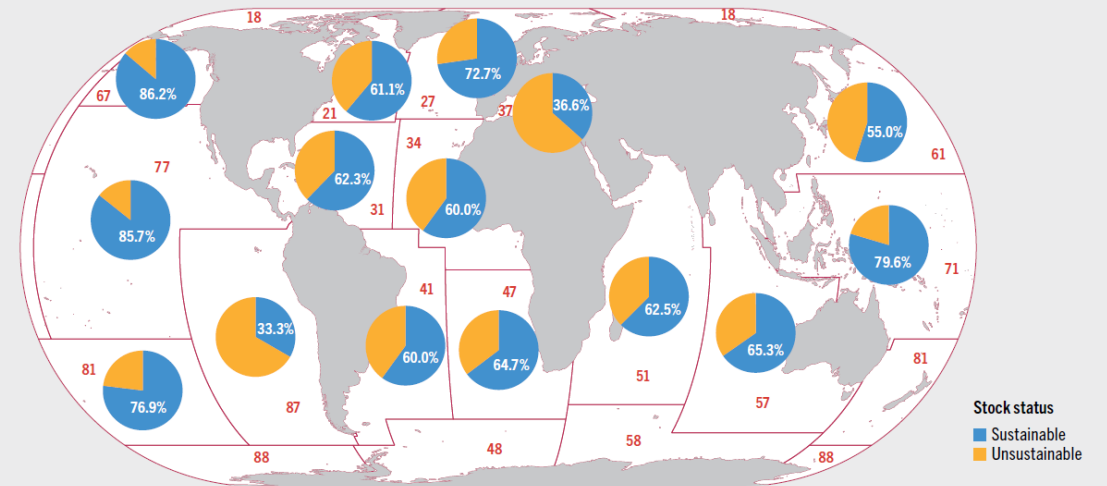
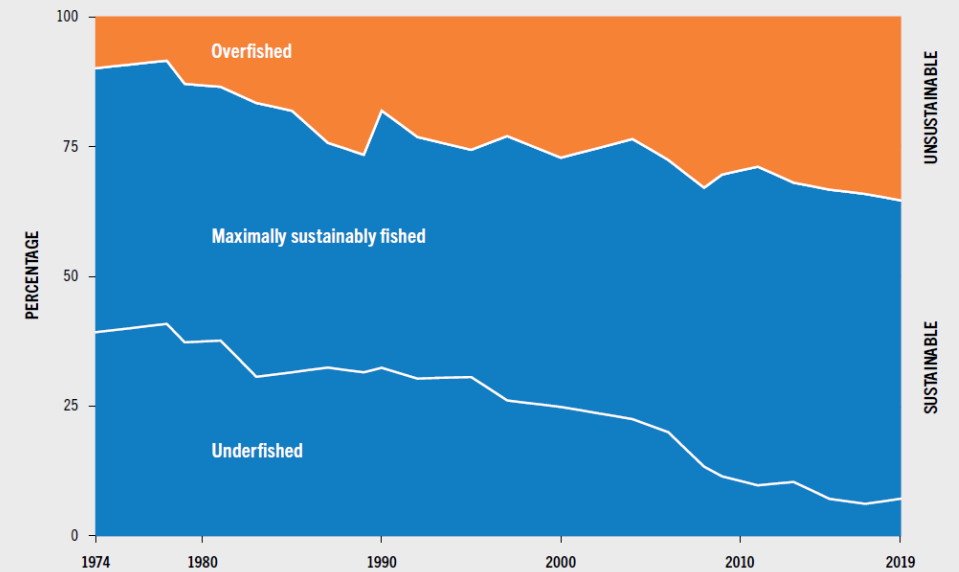


# Recommendations from lessons learned

- **For timely disposal of Tiered data/information through FIRMS partners:**
  - an agreement on a yearly date for data calls, and Partners requested to notify validity of past assessments if no new assessments
  - revisited agreement on the data submission process with FAO bodies for a timely reporting, making this part of the RFB mandate
  - calendars synchronized with SOFIA-TAF needs for the SDG14.4.1 Questionnaire calls
- **For timely disposal of complementary Tier2 data through FIRMS partners:**
  - Catch and Effort regional databases further supported by FAO RFBs and easily accessible for Tier2 analysis
  - The above extended to LF when available / applicable
- **For streamlined analysis for SOS Tier 1, 2, or 3**
  - SOFIA-TAF working system designed according to lessons learned from pilot workshop experience and aligned with GRSF standards
  - Stronger guidelines for the definition of assessment units and their temporal continuity
- **For addressing the existing gaps**
  - Discuss strategically with existing partners how to address weak reporting:
    - E.g. with SEAFDEC in SouthEast Asia. With IORA in South Asia. Propose leading role by FAO/NFIFM to help these regions take off
    - E.g. with SPRFMO for Chile – Peru - Ecuador
  - Encourage and welcome new strategic partners who are currently observers (CTMFM for Area 41, SPC for Pacific Islands)
  - Discuss among existing partners how to best distribute data collection efforts, so to avoid duplicate efforts and best complement each other
  - Evaluate if the initiative ASFA-SEAFDEC for collection of grey literature has value to help the region

# Uniqueness of Approach

- Evidence Based
- Transparent
- Replicable
- ***Consultative***
- ***Buy in from countries of the region.***

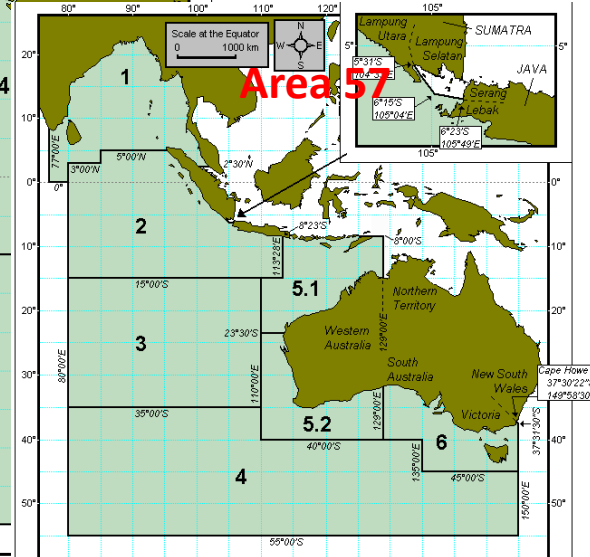
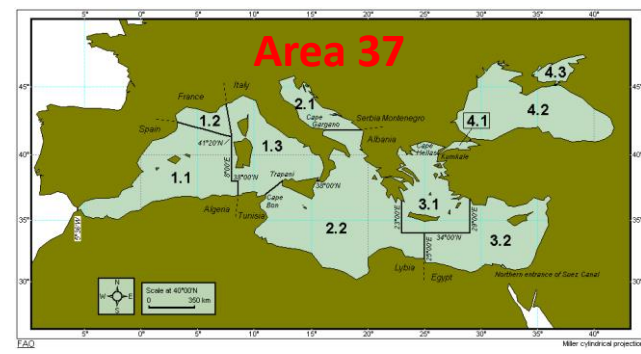
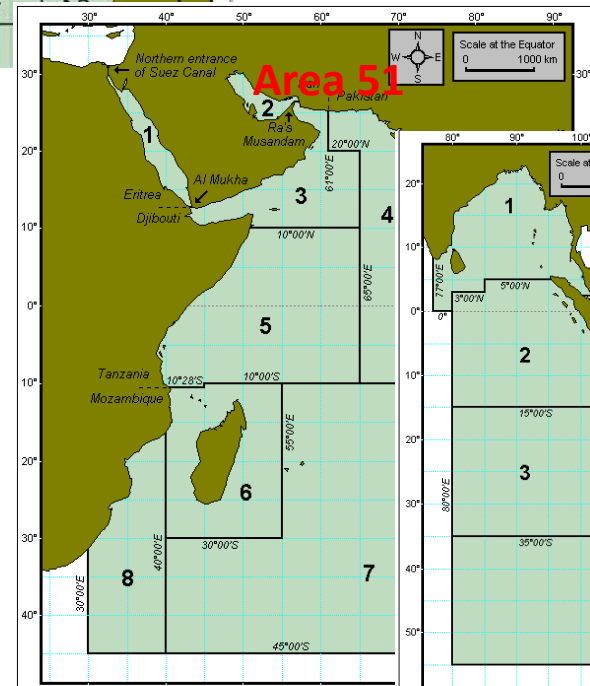
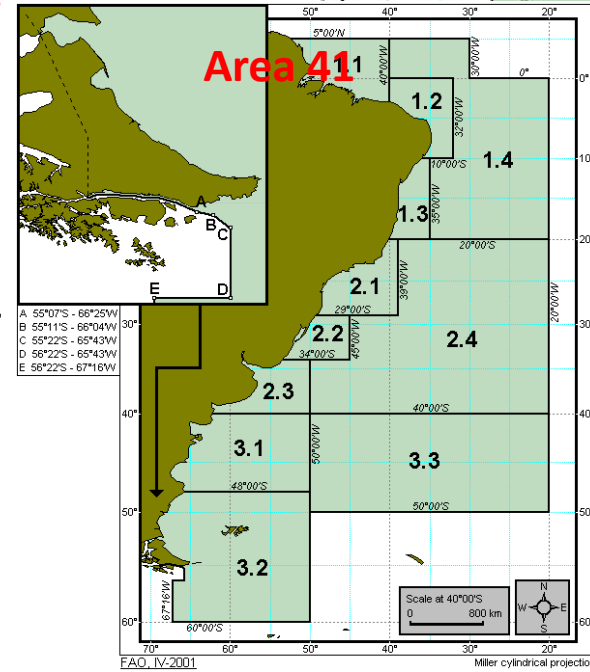
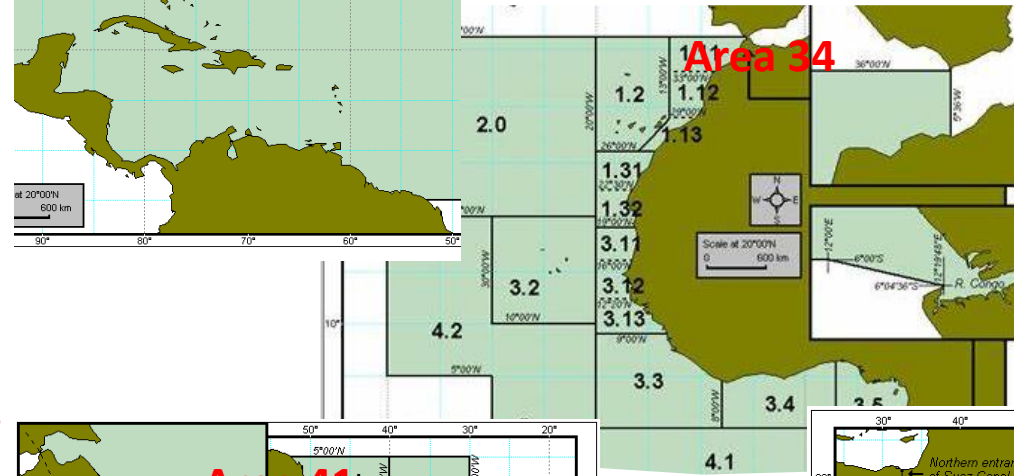
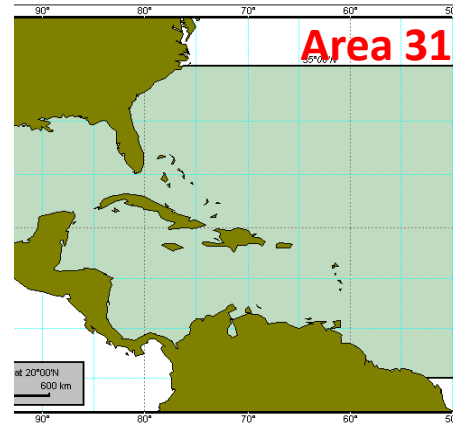


NOTE: The digital percentages represent the proportion of sustainable stocks.  
SOURCE: FAO.

# SOS: SOFIA-TAF

- **SOFIA-TAF Progress:**
- **Consulted/built capacity (200 in person and about 65 virtual primarily in Mediterranean).**
- **Consulted with approximately 63 countries.**
- **Moved from aggregate stocks (189) to finer resolution (1093).**
- **Next meeting planned is Area 71 and perhaps Area. Other area planned are Area 77, and Area 87 in the Pacific next year.**

**If FIRMS changes workflow a huge impact could be realized**



## Lessons Learned/Modifications needed

Countries/RDB/RFMOS  
streamline reporting



Enough capacity to turn  
datasets rapidly –  
Timeliness of results –  
Enabling conditions



Analysis streamlined for  
SOS Tier 1, 2 or  
3//Alignment of  
countries reporting  
preferences and what  
goes into FIRMS //



Building on trust and  
merging workflows  
across countries and  
teams.



FAO work with partners  
on the ground is critical



# Challenges



Building the trust



Timeliness in reporting and processing



Budgets and staff needs  
internal and external

# Key Messages

- The reprioritization of FIRMS activities to align with SOS is a high priority.
- In order for this to succeed we need:
  - i) Timeliness
  - ii) Capacity
  - iii) Trust
- Blue Transformation align with FIRMS priorities of broader data and information framework standardization in support of:
  - i) Fisheries management and sustainable fisheries in regions and countries,
  - ii) interoperability, and capacity building for SSF, WTO, SOS work, SOFIA and countries needs.