



Food and Agriculture
Organization of the
United Nations



FishStat

FAO FISHERY AND
AQUACULTURE STATISTICS

RECOFI data and FAO fisheries statistics: overview of FAO capture fisheries reporting requirements

Agenda item 9

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Outline

1. Overview FAO F&A statistics and capture fisheries reporting requirements
2. Common issues / considerations when reporting capture data to FAO
3. Status of RECOFI member states NS-1 / Statlant data submissions
4. Comparison between Global/Regional capture and MDR data submissions

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FAO fisheries and aquaculture statistics

GLOBAL

Global capture production

- Quantity (Since 1950) + value (recent years unpublished)

Global aquaculture production

- Quantity (Since 1950), Value (Since 1984)

Global fisheries and aquaculture production

- Quantity (Since 1950)

Global commodities production and trade

- Quantity and Value (Since 1976)

Fishing Fleet

- Since 1950

Employment

- Since 1970

Consumption (incl. utilization)

- Since 1961

REGIONAL

Regional capture production

CECAF (Eastern Central Atlantic)

- Quantity (Since 1970)

RECOFI

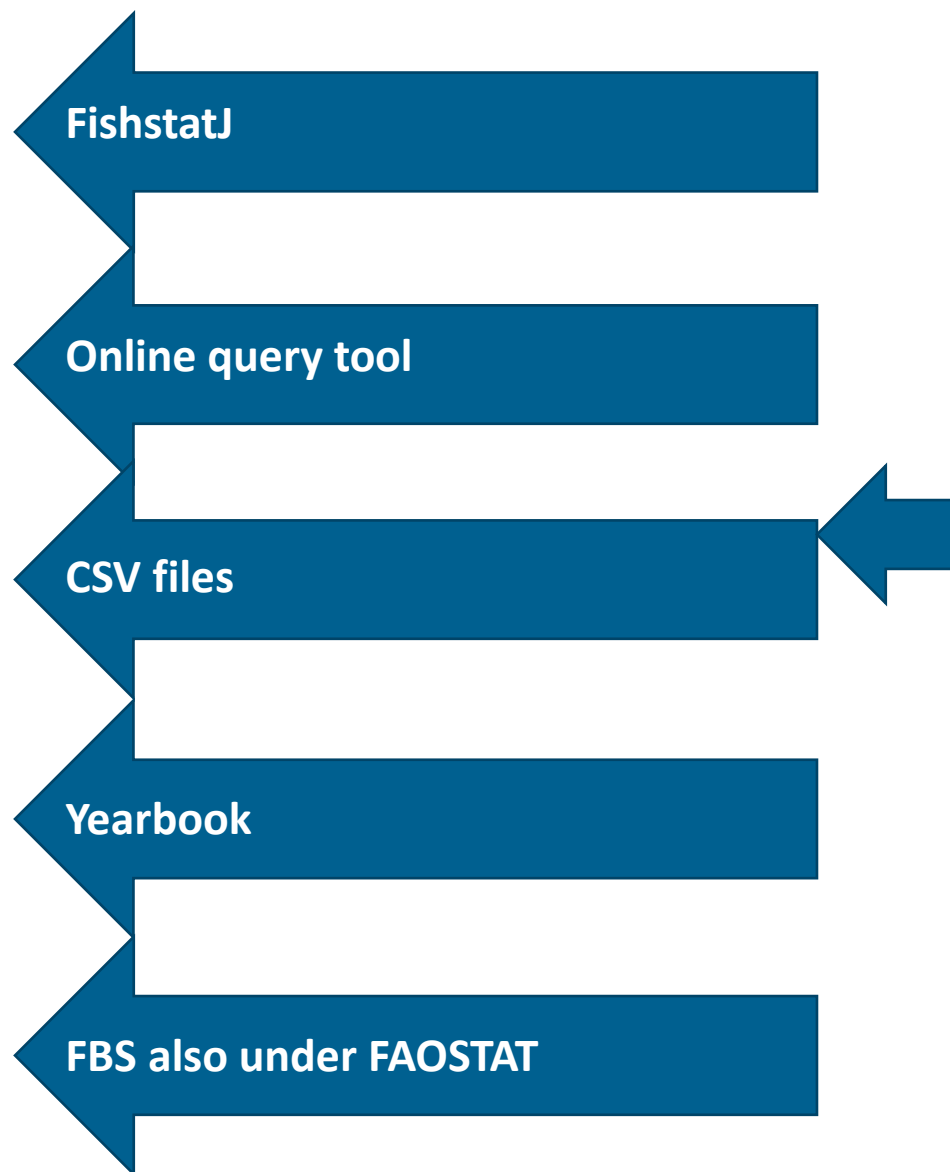
- Quantity (Since 1986)

Southeast Atlantic

- Quantity (Since 1975)

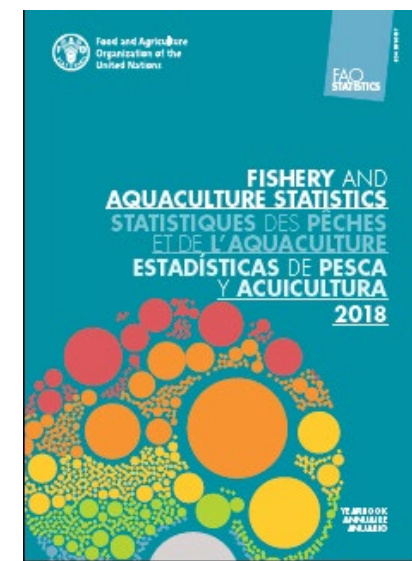
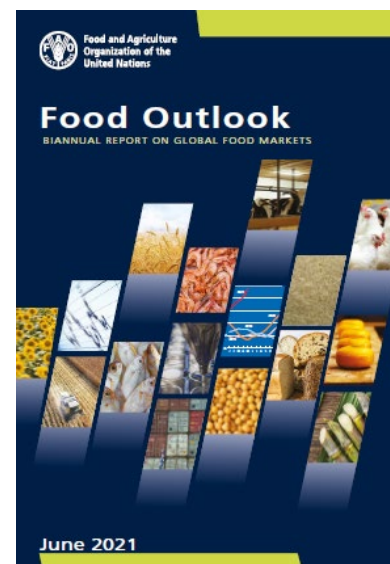


Dissemination



Statistics+
tools and
fish
model

Analysis



Method of collecting data

- Obtained from member countries through questionnaires
- From other sources (as for trade)
- Regional fisheries bodies (tunas and tuna-like species)
- FAO data also depend upon the accuracy and reliability of the statistics collected nationally and provided to FAO

Overview of FAO capture fisheries

- FAO's global and regional capture databases managed by the Statistics Team of the Fisheries and Aquaculture Division.
- FAO capture production statistics are disseminated for:
 - **Countries:** 247 countries, territories or land areas.
 - **Fishing areas:** 26 FAO major fishing areas.
 - **Years/periodicity:** 1950 to 2019. Data is updated annually (around March).
- **Species:** catches disseminated for approximately 1600 ASFIS species items, including:
 - freshwater, brackishwater and marine species of fish, crustaceans, molluscs and other aquatic animals and plants classified by FAO International Standard Statistical Classification of Aquatic Animals and Plants (ISSCAAP).
- The global capture production database can be accessed at the FAO web site <http://www.fao.org/fishery/statistics/en> or through the FishStatJ software (downloadable) or on the online query panel on the FAO website + Yearbook

Overview of FAO capture fisheries

- Countries are annually requested by FAO to submit the capture production of fish, crustaceans, molluscs, etc., by species and major fishing areas (including inland and marine areas) for:
 1. **industrial fisheries**
 2. **artisanal fisheries**
 3. **subsistence fisheries**
 4. **recreational or sports fisheries.**
- Data should include the **total retained catches from all fisheries** (including all artisanal and large-scale fisheries). Data from aquaculture is excluded, and reported separately to FAO.
- **Data should be reported on the retained catches of all national flag vessels** (including landings in domestic and foreign ports). Data on catches of *foreign flag vessels* landed in a country should be excluded, while catches of chartered vessels should be considered to be the catch of the chartering country.
- **Catches are not reported by gear or vessel type (or fishing units).** Catches are aggregated across all fisheries, and intended to provide high level summaries across FAO major fishing areas, national, regional and global level.

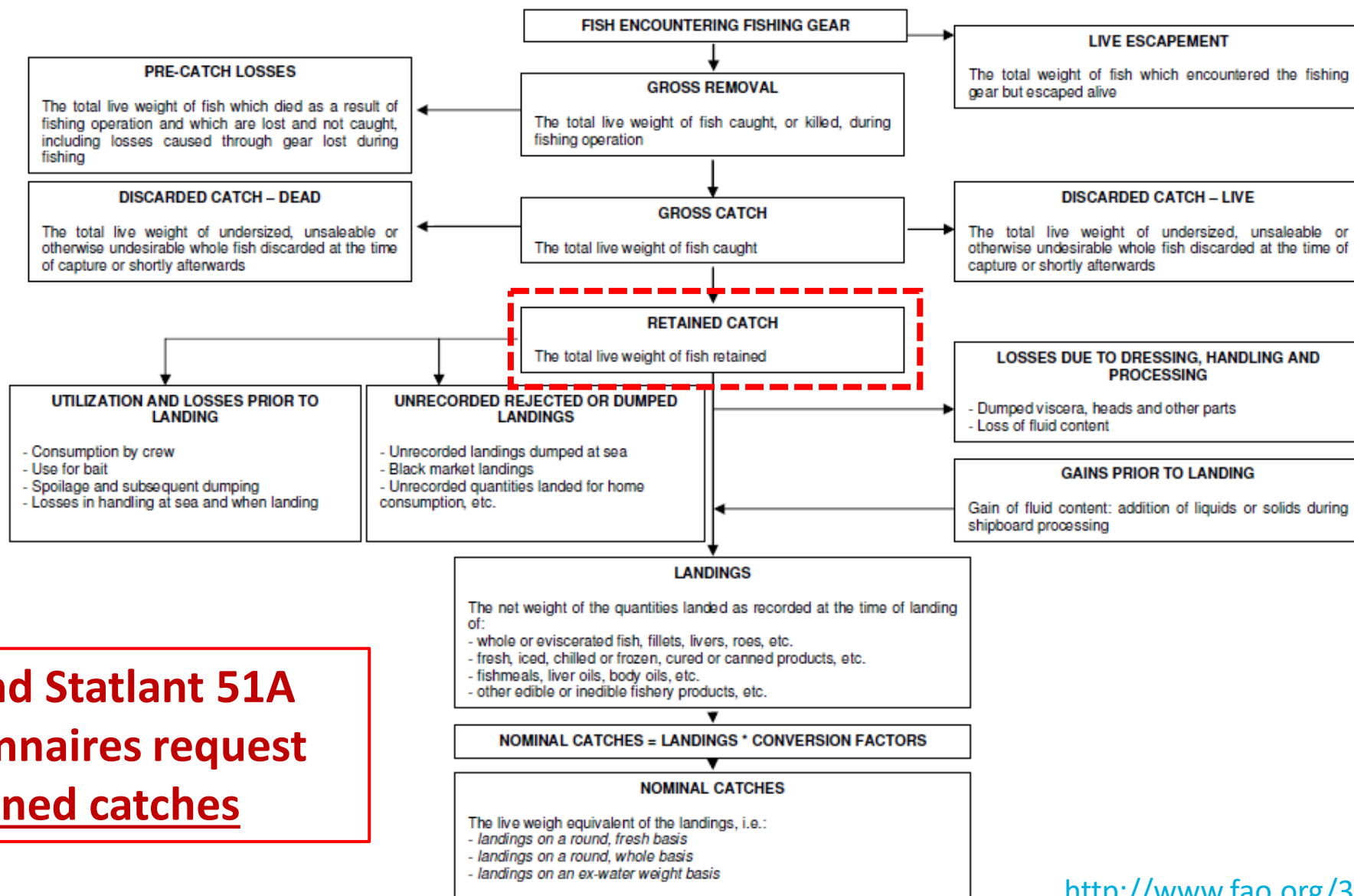
CWP catch concepts: retained vs. nominal catches

1. **Gross removal:** The total live weight of fish caught, or killed, during the fishing operation.
2. **Retained catch:** refers to the total live weight of fish and other organisms retained on board the fishing vessel. Equivalent to the total catch (including landings and "non-landed" catches, e.g., catches for crew).
 - *Excludes discards (live or dead) or other pre-catch losses.*
3. **Landings:** refers to new weight of the quantities landed as recorded at the time of landing of whole or eviscerated fish fillets, livers, etc.; fresh, iced, chilled or frozen, cured or canned products, etc.; fishmeals, liver oils, body oils; other edible or inedible fishery products, etc.
4. **Nominal catches:** refers to the live weight equivalent of landings; also referred to as "Landings on a round, fresh basis", "Landings on a round, whole basis" or "Landings on an ex-water basis". Care should be taken when referring to nominal catch as the 'total catch' since in many situations the total catch includes components not landed.
 - *Excludes discards (live or dead) or other pre-catch losses.*
 - *Excludes the proportion of the retained catch set aside prior to landing (e.g., consumption by the crew, use for bait, black market landings, home consumption).*

NOMINAL CATCHES = LANDINGS * CONVERSION FACTORS TO LIVE WEIGHT EQUIVALENT



Catch Concepts: Diagrammatic Presentation

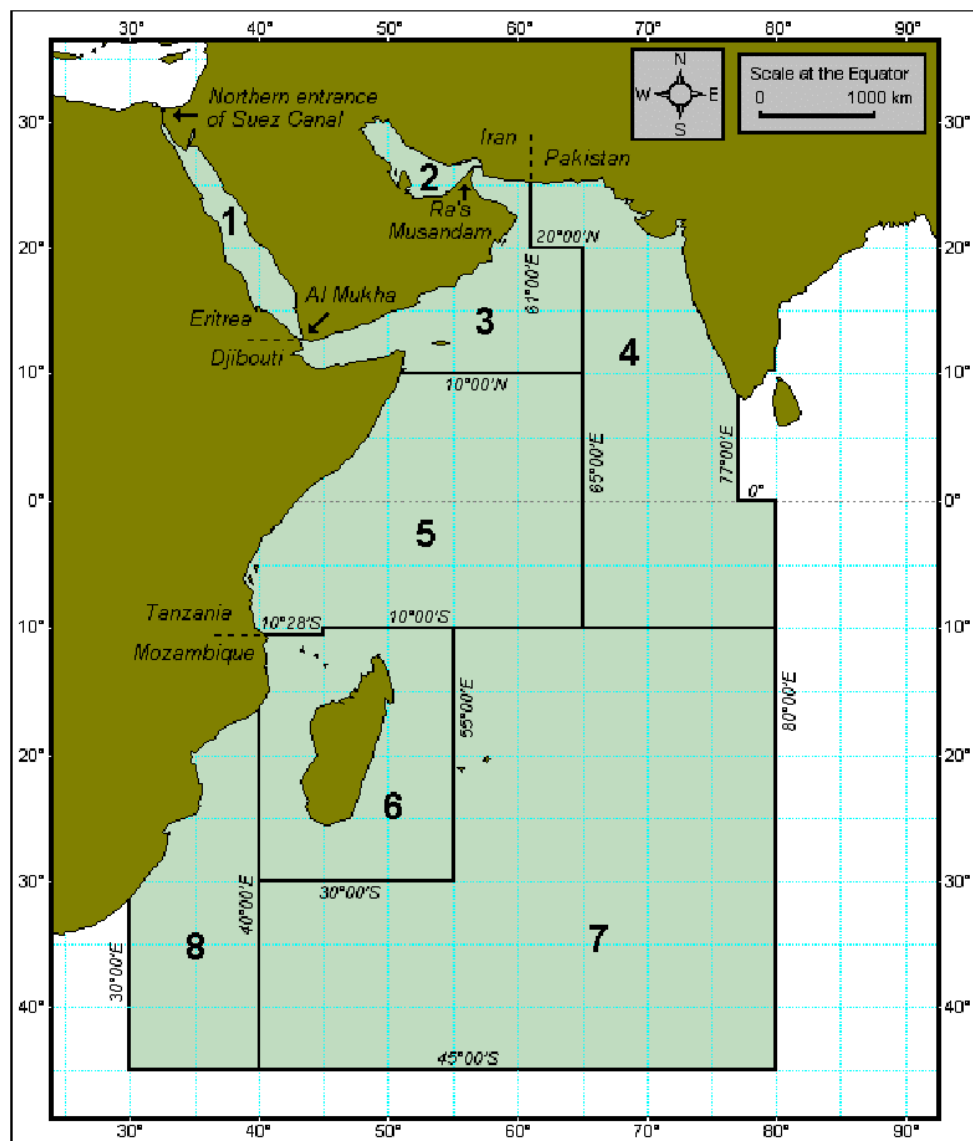


**NS-1 and Statlant 51A
questionnaires request
retained catches**

Differences between the FAO NS-1 & Statlant 51A

<u>FAO NS-1 questionnaire</u> Global capture production database	<u>Statlant 51A questionnaire</u> Regional capture database
<ol style="list-style-type: none"> 1. <u>Scope</u>: Annual retained catches from all fisheries from marine and inland waters. 2. Includes all fisheries (including artisanal/small-scale, industrial, subsistence and recreational). 3. <u>Area</u>: Catches are reported at FAO Major Fishing Area level (all areas) 4. <u>Purpose</u>: Used to compile FAO's Global Capture Production statistics. 	<ol style="list-style-type: none"> 1. <u>Scope</u>: Annual retained catches from all fisheries from marine waters only. 2. Includes all fisheries (including artisanal/small-scale, industrial, subsistence and recreational). 3. <u>Area</u>: Catches are reported for FAO Major Fishing Area 51 (Western Indian Ocean), including all subareas and divisions. 4. <u>Purpose</u>: Used to compile FAO's Regional Capture database.

FAO subareas of area 51

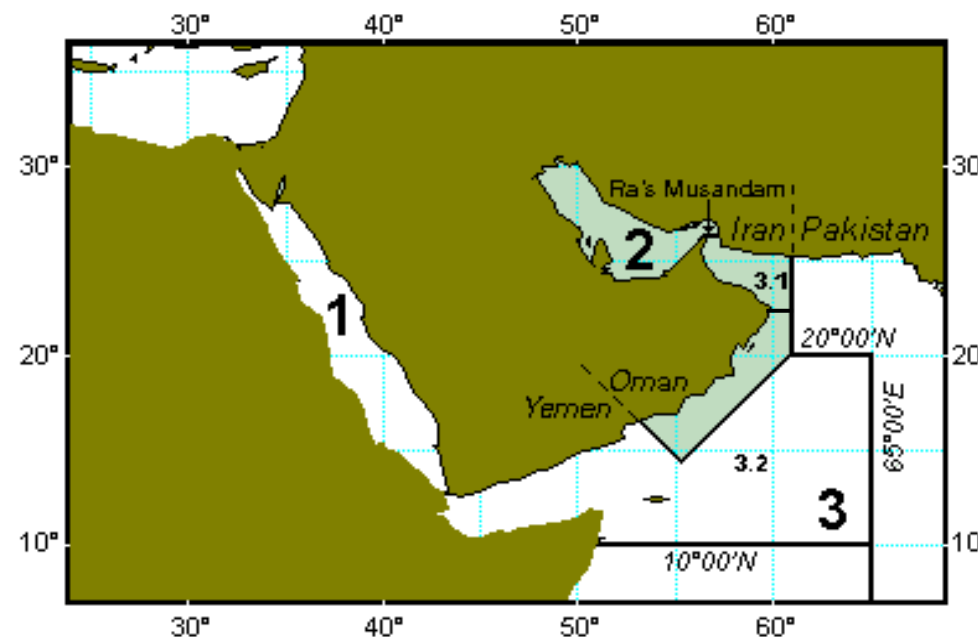


FAO, IV-2000

Equidistant cylindrical projection

RECOFI Area of Competence

RECOFI subarea/division



- 51.2.0 – Gulf
- 51.3.1 – Oman Sea
- 51.3.2 – South-western Arabian Sea

FAO NS-1 Global capture production questionnaire

- Capture production statistics (in tonnes) by country or territory, species item (listed by 3 Alpha code, Scientific name, and English name), and FAO Major Fishing Area.

FISHSTAT-FI-NS1 for Oman [2019]																				
3 ALPHA CODE - ENGLISH NAME		SCIENTIFIC NAME	AREA CODE	UNIT	2012		2013		2014		2015		2016		2017		2018		2019	
					Quantity	Symbol	Quantity	Symbol	Quantity	Symbol	Quantity	Symbol	Quantity	Symbol	Quantity	Symbol	Quantity	Symbol	Quantity	Symbol
FRF	Freshwater fishes nei	Osteichthyes	04	Quantity [Tonnes]	0	N	0	N	0	N	0	N	0	N	0	N	0	N	0	N
CAX	Sea catfishes nei	Ariidae	51	Quantity [Tonnes]	5153		4620		7708		8187		9639		12956		12545		7435	
MUL	Mulletts nei	Mugilidae	51	Quantity [Tonnes]	3151		3248		3935		2714		2511		6251		4573		5168	
GPX	Groupers nei	Epinephelus spp	51	Quantity [Tonnes]	3947		4218		2645		2975		3068		3316		3498		2964	
SNX	Snappers, jobfishes nei	Lutjanidae	51	Quantity [Tonnes]	1071		1390		2034		2095		3230		4190		5201		7151	
THD	Threadfin and dwarf breams nei	Nemipteridae	51	Quantity [Tonnes]	2337		4271		2809		1278		532		2007		1759		2130	
GRX	Grunts, sweetlips nei	Haemulidae (=Pomadasyidae)	51	Quantity [Tonnes]	2677		3131		3685		3613		3327		4352		3229		3261	
CDX	Croakers, drums nei	Sciaenidae	51	Quantity [Tonnes]	6863		8852		7268		7098		5707		10015		3904		9009	
EMP	Emperors(=Scavengers) nei	Lethrinidae	51	Quantity [Tonnes]	8962		10867		9202		10517		8497		12832		16343		17041	
SBX	Porgies, seabreams nei	Sparidae	51	Quantity [Tonnes]	3352		5131		6942		7934		9239		8278		11141		8662	
SPI	Spinefeet(=Rabbitfishes) nei	Siganus spp	51	Quantity [Tonnes]	757		1056		1008		3157		3476		2738		3793		8193	
CUT	Hairtails, scabbardfishes nei	Trichiuridae	51	Quantity [Tonnes]	10878		5667		6718		6940		8697		15451		12069		15233	
DPX	Demersal percomorphs nei	Perciformes	51	Quantity [Tonnes]	3714		5273		4506		7346		8079		10159		8362		7917	

FAO NS-1 Global capture production questionnaire - value

- Capture production statistics (in value/kg)+currency by country or territory, species item (listed by 3 Alpha code, Scientific name, and English name), and FAO Major Fishing Area.

FISHSTAT-FI-NS1 for ##### [2020]

Form for reporting statistics on capture production of fish, crustaceans, molluscs, etc., by species and major fishing areas in price/kg. Please ensure the following:

- Data is entered for **retained catches for all capture fisheries (including commercial, artisanal, subsistence, and recreational fisheries)**. Data for discards should be excluded.
- Data is entered for all species available** (please enter any missing species in the blank rows at the bottom of the table).
- If you reported any value on price/kg in previous submission, they are not shown in this questionnaire. Please insert only values for 2020.**

3 ALPHA CODE - ENGLISH NAME	SCIENTIFIC NAME	AREA CODE	UNIT	2013			2014			2015			2016			2017			2018			2019			2020		
				Value	Symbol	Currency code	Value	Symbol	Currency code	Value	Symbol	Currency code	Value	Symbol	Currency code	Value	Symbol	Currency code	Value	Symbol	Currency code	Value	Symbol	Currency code	Value	Symbol	Currency code

Statlant 51A Regional capture production questionnaire

- Capture production statistics (in tonnes) by country or territory, species item (listed by 3 Alpha code, Scientific name, and English name), and within FAO Major fishing area 51. Data are requested by subarea and division.

FISHSTAT 51A		FORM FOR REPORTING STATISTICS ON CATCHES IN WESTERN INDIAN OCEAN FORMULAIRE POUR LA DÉCLARATION DES STATISTIQUES DES CAPTURES DANS L'Océan Indien Ouest FORMULARIO PARA INFORMACIÓN ESTADÍSTICA DE CAPTURAS EN EL Océano Indico Occidental									
YEAR ANNÉE AÑO 2019	COUNTRY PAYS PAÍS -----	All commercial, industrial and subsistence fisheries Toute la pêche commerciale, industrielle et de subsistence Toda la pesca comercial, industrial y de subsistencia						Tonnes Tonnes Toneladas			
3-alpha code code código	Species items Catégories d'espèces Partidas de especies	TOTAL AREA 51	Subarea Not known Inconnue Desconocida	Subarea 51.1.0 Red Sea	Subarea 51.2.0 Gulf	Division 51.3.1 Oman Sea	Division 51.3.2 South-western Arabian Sea	Subarea 51.4.0 Eastern Arabian Sea, Laccadives	Subarea 51.5.0 Somalia, Kenia & Tanzania	Subarea 51.6.0 Madagascar & Mozambique Channel	Subarea 51.7.0 Oceanic
CAX	Sea catfishes nei	7,435			56.6	364.9	7013				
MUL	Mullets nei	5,168			251.6	407.2	4509				
GPX	Groupers nei	2,964			420.5	1262.8	1281				
SNX	Snappers, jobfishes nei	7,151			2989.0	2625.8	1536				
THD	Threadfin and dwarf breams nei	2,130			1.9	107.2	2020				
GRX	Grunts, sweetlips nei	3,261			51.4	658.5	2551				
CDX	Croakers, drums nei	9,009			0.0	45.4	8963				
EMP	Emperors(=Scavengers) nei	17,041			417.2	2223.5	14401				
SBX	Porgies, seabreams nei	7,800			110.5	709.4	6980				
SPI	Spinefeet(=Rabbitfishes) nei	8,193			73.1	121.6	7998				
CUT	Hairtails, scabbardfishes nei	15,233			8.9	425.4	14799				
DPX	Demersal percomorphs nei	7,917			266.2	2490.6	5161				
IOS	Indian oil sardine	275,186			1274.8	19308.8	254602				
ANX	Anchovies, etc. nei	17,482			1608.8	15873.3	0				
BIP	Striped bonito	1,078			0.5	159.1	918				
COM	Narrow-barred Spanish mackerel	2,098			341.2	1429.9	327				
FRZ	Frigate and bullet tunas	1,130			10.6	757.1	362				
KAW	Kawakawa	6,702			318.8	2558.5	3824				
SKJ	Skipjack tuna	102			1.4	24.9	76				
LOT	Longtail tuna	14,684			2607.0	9414.6	2663				
YFT	Yellowfin tuna	37,074			454.5	9657.5	26962				
SFA	Indo-Pacific sailfish	1,495			12.5	888.8	594				

**Total catches by species in
area 51 = catches within
subarea and divisions**

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Common issues with FAO capture data submissions

1. **Non-response of NS1/Statlant A questionnaires by countries.**
2. **Incomplete data submissions** – e.g., data missing for inland water captures, or incomplete list of species.
3. **Late submission of questionnaires:** reduces the time available for FAO to validate and quality assure the data prior to dissemination (i.e., March each year).
4. **Catches reported as species aggregates** (*Tuna-like fishes nei (TUX), Sharks, rays, skates, nei (SKX), marine fishes nei (MZZ), fresh water fishes nei (FRF), etc.*)
5. **Errors in official data:** No response or difficulties in communicating complex or technical issues to resolve inconsistencies in the NS-1 data submissions.
6. **Inconsistencies between data reported in the NS-1 and Statlant A questionnaires.** Very common issue. Total catches and catches-by-species should be identical (for the FAO Major Fishing Area concerned).
7. **Catch quantities not reported in live weight equivalent** (i.e., not converted from processed weights).
8. Changes or improvements in the data collection that cause **abrupt changes in the estimate of total catches, or catch-by-species between years.**
 - *Often requires reconstruction of the historical catches to avoid a break in the data series.*

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Status of FAO data submissions (2020) by RECOFI countries

Data up to 2019

	FISHSTAT-NS1	STATLANT-51	FISHSTAT_AQ	FISHSTAT-FF	FISHSTAT-FM	FISHSTAT-DNC	FISHSTAT-FC1
	(Capture production)	(Catches by RECOFI areas)	(Aquaculture)	(Fishery fleet)	(Number of fishers)	(Disposition of fishery production)	(Fishery commodities production)
Bahrain	Not received	(not applicable)	Not received	Not received	Not received	Not received	Not received
I.R. Iran	Not received	Not received	Not received	Not received	Not received	Not received	Not received
Iraq	Received	(not applicable)	Received	Received	Received	Received	Not received
Kuwait	Received	(not applicable)	Received	Received	No data	Received	No data
Oman	Received	Received	Received	Received	Received	Received	Received
Qatar	Received	(not applicable)	Received	Received	Received	(not applicable)	(not applicable)
Saudi Arabia	Received	No data	Received	No data	Received	No data	No data
UAE	Not received	Not received	Not received	Received	Received	Not received	Not received

General comments on status of data from RECOFI countries

Bahrain	No data received since 2014; FAO estimates considered highly uncertain.
I.R. Iran	No data reported for 2019; however NS-1/Statlant data are usually submitted. Estimates for the artisanal fisheries are thought to be uncertain, although these contribute a relatively small proportion of total catches.
Iraq	No major issues to highlight. In the past, there have been some issues with inland water captures which have included/double-counted aquaculture.
Kuwait	No major issues to highlight. Data have been submitted annually for all questionnaires.
Oman	No major issues to highlight. Catches in recent years have increase sharply from 280k tons in 2016 to 580k tons in 2019 - although the reasons for the increase require further clarification (possibly due, in part, to improvements in the data collection system?). Large increase in catches of Indian Oil Sardines in particular, which are also confirmed by export data.
Qatar	No major issues to highlight. Data have been submitted annually for all questionnaires.
Saudi Arabia	No major issues to highlight. Communication with the Ministry of Fisheries and the submission of questionnaires/queries are coordinated via the FAO office, which can be difficult when communicating complex or technical questions.
UAE	No data received since 2012. However routine data collection appears to be in place for the two largest Emirati (Dubai and Abu Dhabi), which cover the majority (+85%) of catches. Discussions regarding potential technical assistance/training are currently in progress with FAOSNG for Q3 2021.

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Overview: differences and purposes of each data call

1. Global Capture Production

- **FAO NS-1 questionnaire (issued July). Deadline for reporting end-August.**
- **Total retained catches for ALL species, all fisheries, for ALL areas (FAO Major Fishing Areas), for ALL fisheries (inland and marine).**
- **Purpose: Used to compile FAO's estimates of global capture production.**
- **Link: <http://www.fao.org/fishery/statistics/global-production/en>**

2. RECOFI Regional Database

- **Statlant 51A questionnaire (issued July). Deadline for reporting end-August.**
- **Sub-set of total retained catches reported in the NS-1, for species in FAO Fishing Area 51 (by Division), for marine water captures only.**
- **Important: Statlant 51A and NS-1 total catches (within Area 51) and by species should be identical!!!**
- **Purpose: Used to compile Regional Database (RECOFI): total marine captures for all species within the RECOFI area of competence.**
- **Link: <http://www.fao.org/fishery/collection/recofi-capture-production/en>**

3. RECOFI Minimum Data Requirements (MDR)

The MDR was developed to address three key issues in the region:

- i) Monitor the impact of shrimp trawls.
- ii) Assess the status of general finfish resources, signified with emperors and groupers, and other biologically vulnerable components.
- iii) Assess the status of priority species, initiated with shared assessment of Spanish mackerel, and determined the minimum data requirement to address these key issues from the perspective of monitoring stocks and fisheries status.

In summary: differences and purposes of each data call

3. RECOFI Minimum Data Requirements (MDR): data fields

1. Catches (retained + discards):

➤ *Key list of MDR species, with particular focus on N.B. Spanish mackerel and shrimp fisheries.*

2. Fishing effort and vessel/gear type:

➤ *Selected gears (shrimp trawl, gillnet, wire-trap, hook-and-line fisheries)*

3. Fork length composition (N.B. Spanish mackerel)

SHRIMP TRAWL FISHERY																									
Year	Fishing Area				Fishing vessel	Fishing gear	Fishing Effort					Catch (tonnes, live weight equivalent)**									Discards (tonnes)		Bycatch (tonnes)		By-catch Reduction Device (BRD)
	Major Area	Subarea	Division	Local area name	Vessel category	Gear name	Days in fishing season	No. of vessels engaged in the fishery	Average tow duration	Average no. of tows per day	Total no. days at sea	Shrimp*	Narrow-ba rred Spanish mackerel	Swimming crab	Cuttlefish	Emperors	Groupers	Sharks	Rays	Other finfish	Amount	Species	Amount	Species	
TOTAL																									

The MDR should be considered complementary to, but separate to FAO's annual data call for Global and Regional capture data submissions.



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

