



Food and Agriculture  
Organization of the  
United Nations

SUSTAINABLE  
DEVELOPMENT  
GOALS

*Session 6: Enhancing fishery and aquaculture data to support the monitoring and sustainability of the sector, and contribute to SDGs – Achievements and challenges*

## International Perspective

**Stefania Vannuccini**  
**Senior Fishery Officer – Team Leader - Statistics**  
**Secretary Coordinating Working Party on Fishery Statistics (CWP)**

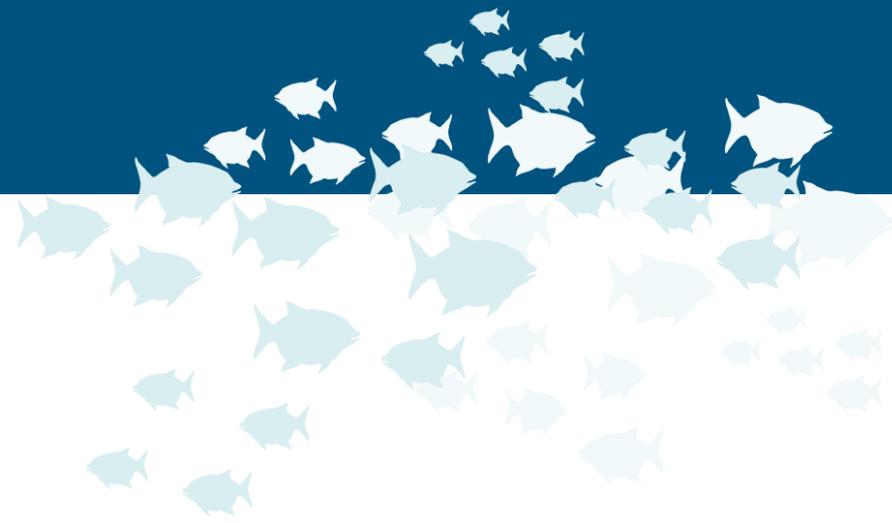
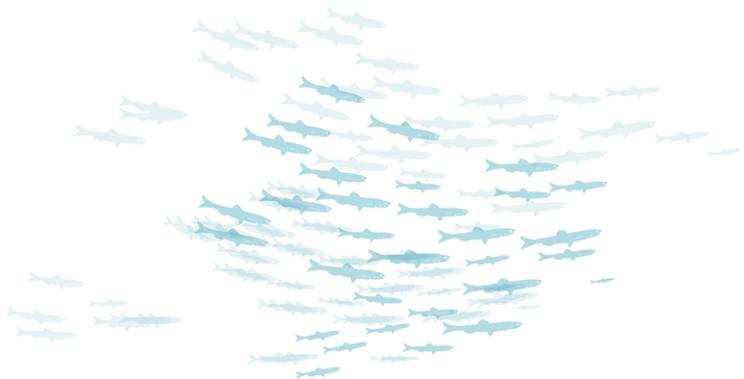


July 23<sup>rd</sup>, 2021

FAO-OEA/CIE-IICA Working group on agricultural and livestock statistics for Latin America and the Caribbean  
30<sup>th</sup> Session  
Virtual Host: INEC Costa Rica

# Session 6 – International perspective

- Overview
- Role of statistics
- Challenges and main issues in data collections
- FAO and Coordinating Working Party on Fishery Statistics (CWP)
- SDG 14



# This is the **BLUE** planet

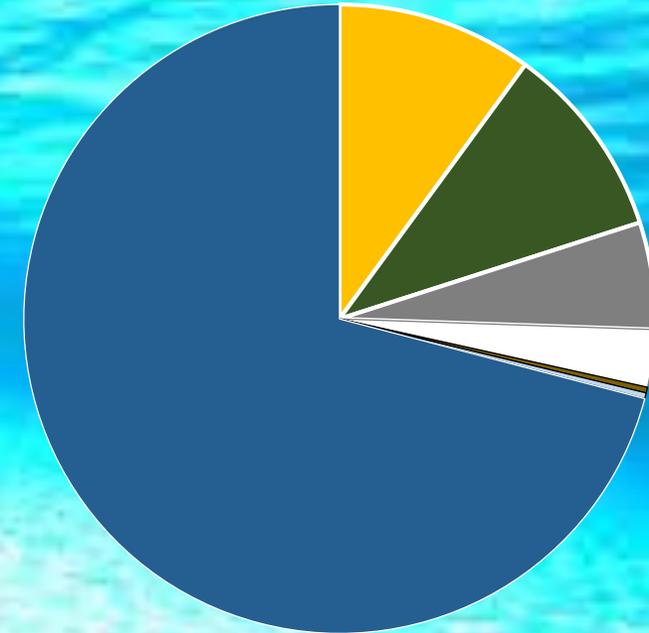


## Water

**72% of the Earth's surface, with about 97% in oceans**

**Healthy aquatic ecosystems are vital to human welfare**

Surface area



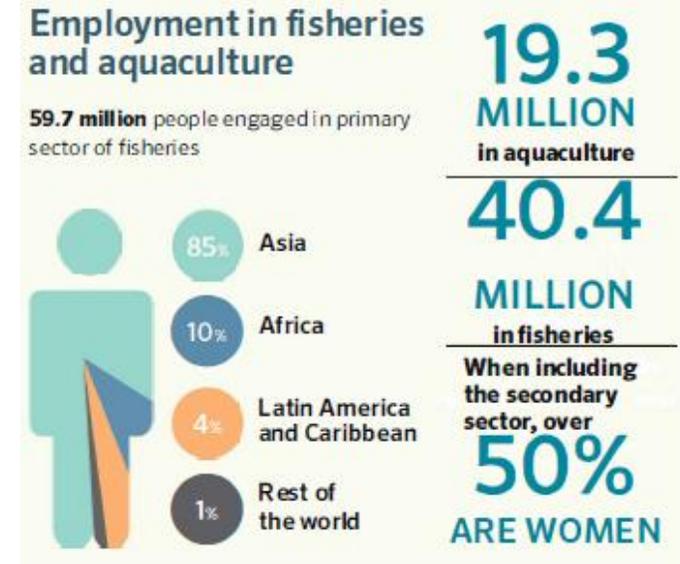
- Agriculture (incl. livestock)
- Forests and Shrubs
- Barren land
- Glaciers
- Urban
- Freshwater
- Ocean

# Importance Fisheries and Aquaculture

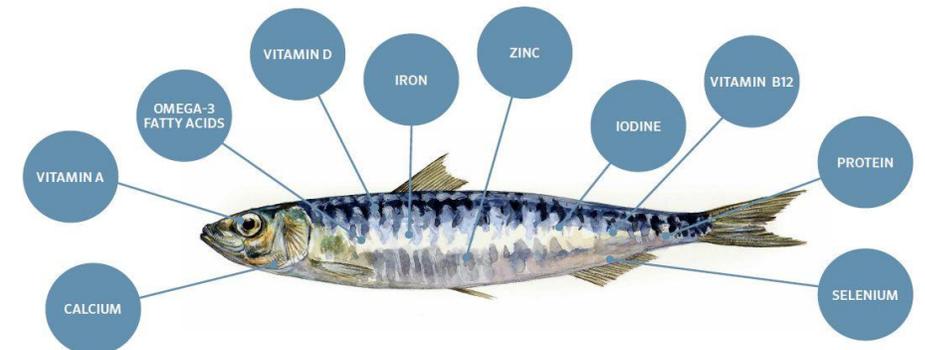
- Key role in food security
- Nutritious food
- Employment
- Income/Livelihood



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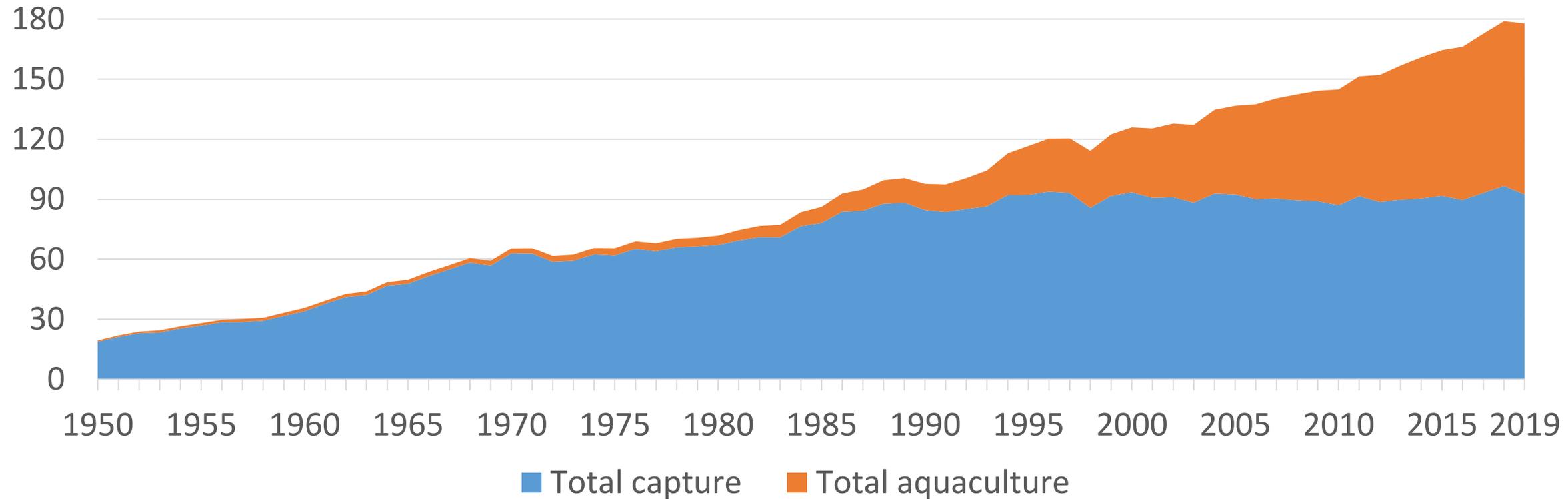


Fish: Nature's superfood



# Growing production

Million tonnes live weight



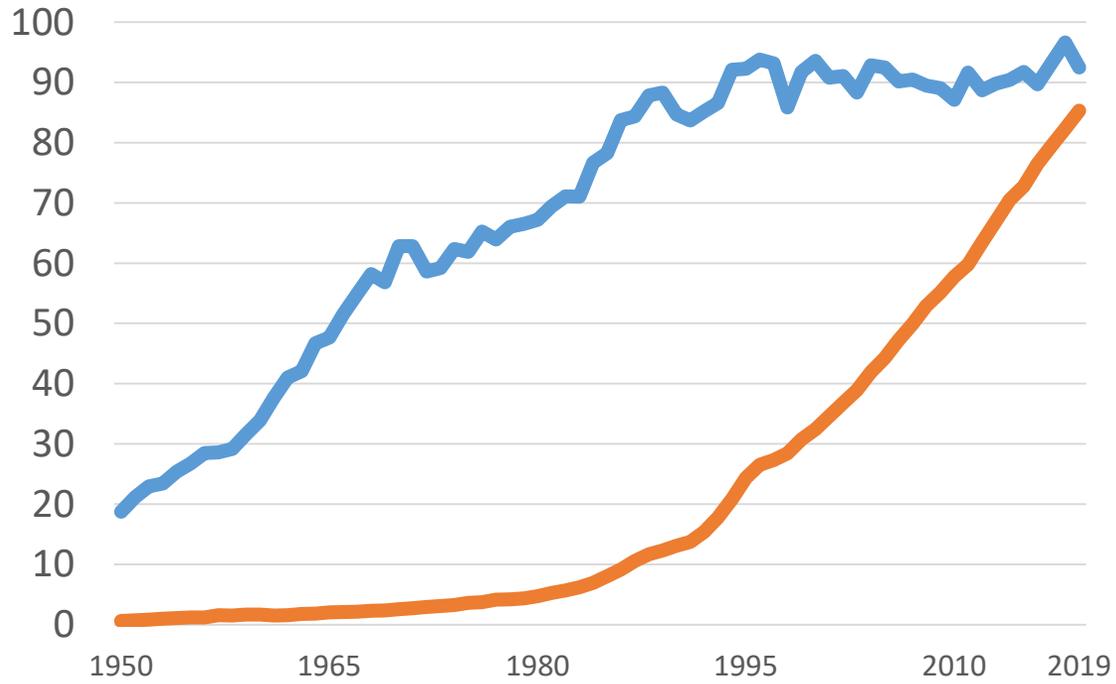
NOTE: Excludes aquatic mammals, crocodiles, alligators and caimans, seaweeds and other aquatic plants

Source: FAO FishStat

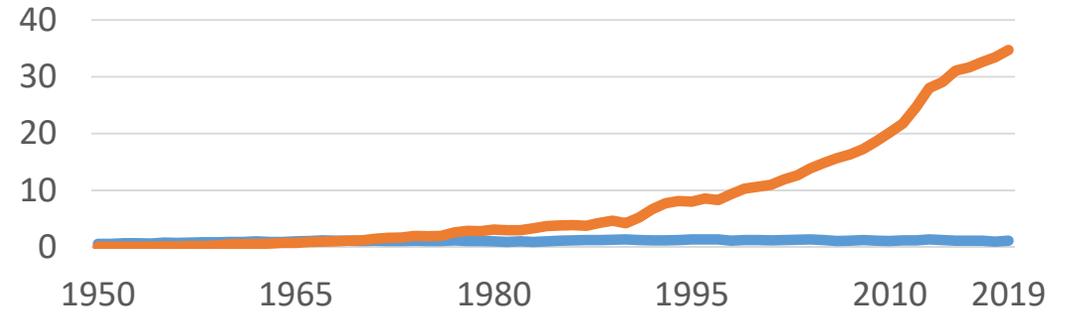
# Growing production

## Total excluding aquatic plants

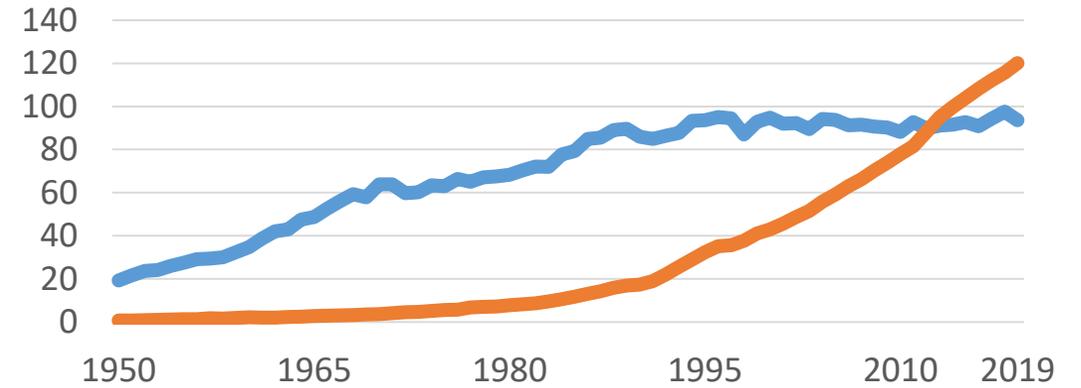
(million tonnes live weight)



## Aquatic plants



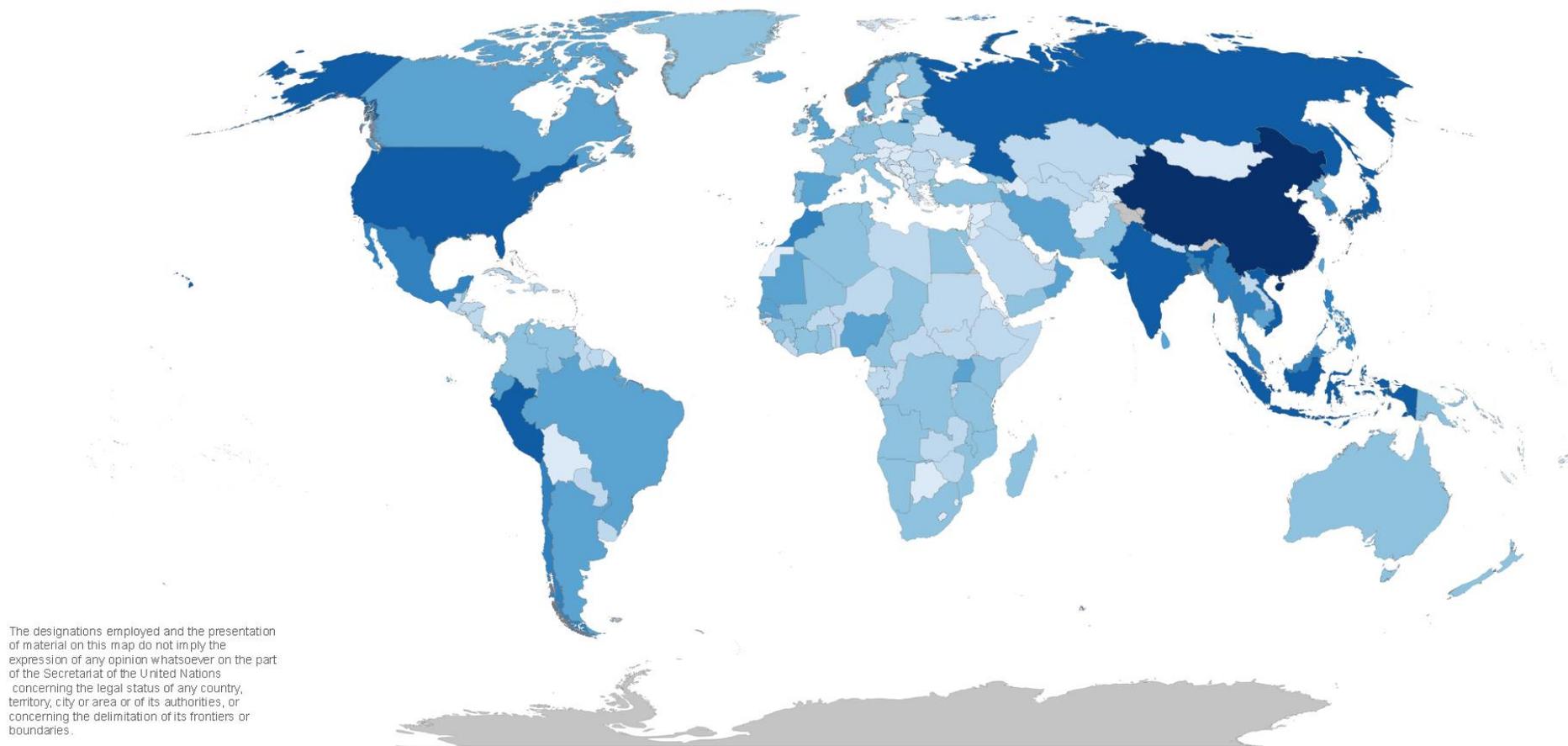
## Total including aquatic plants



— Total capture — Total aquaculture

# Capture fisheries production - 2019

LA: share 13%,  
but it reached  
up to 26%



The designations employed and the presentation of material on this map do not imply the expression of any opinion whatsoever on the part of the Secretariat of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

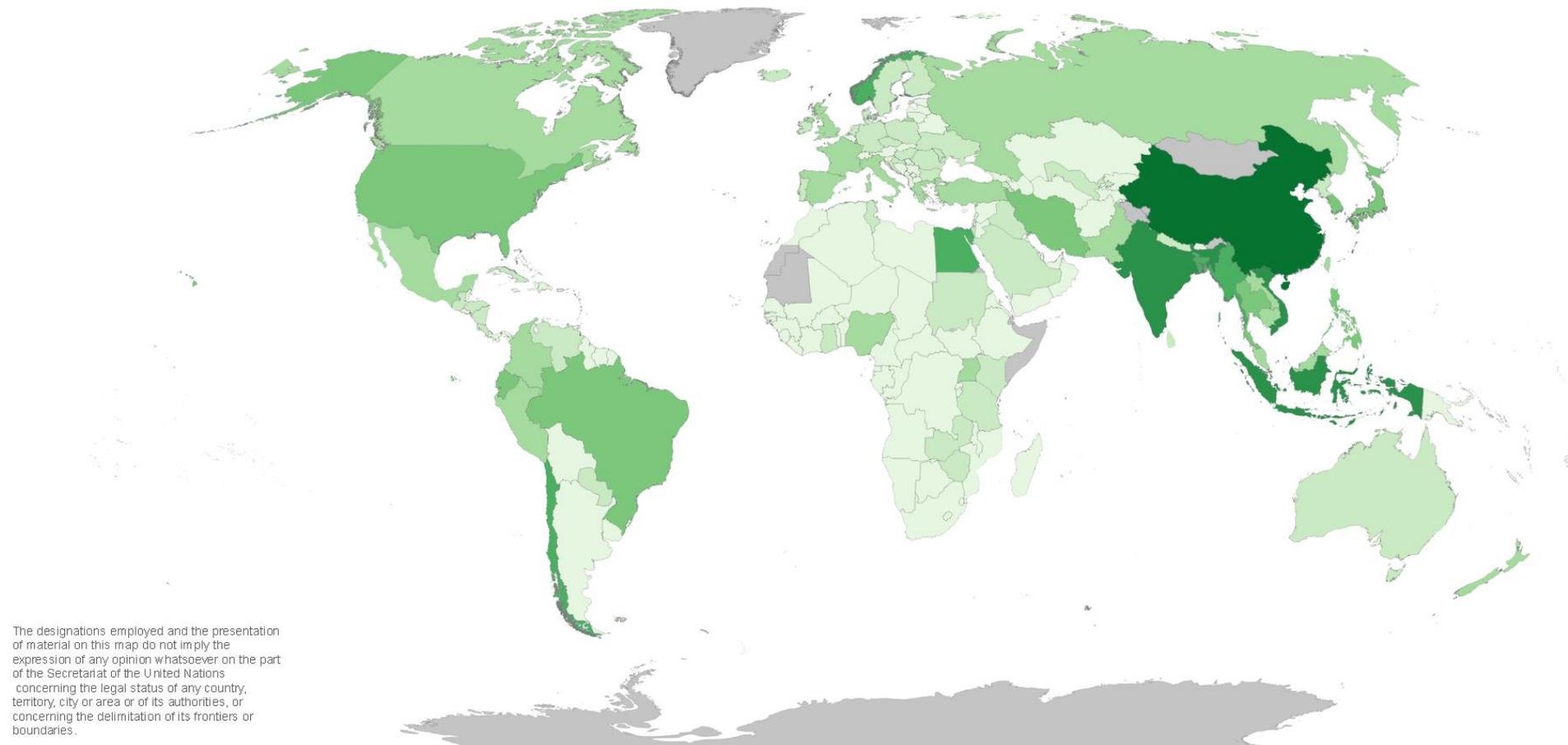
Total capture production, tonnes, 2019

The data presented excludes aquatic plants.



# Aquaculture production - 2019

LA: share 4%



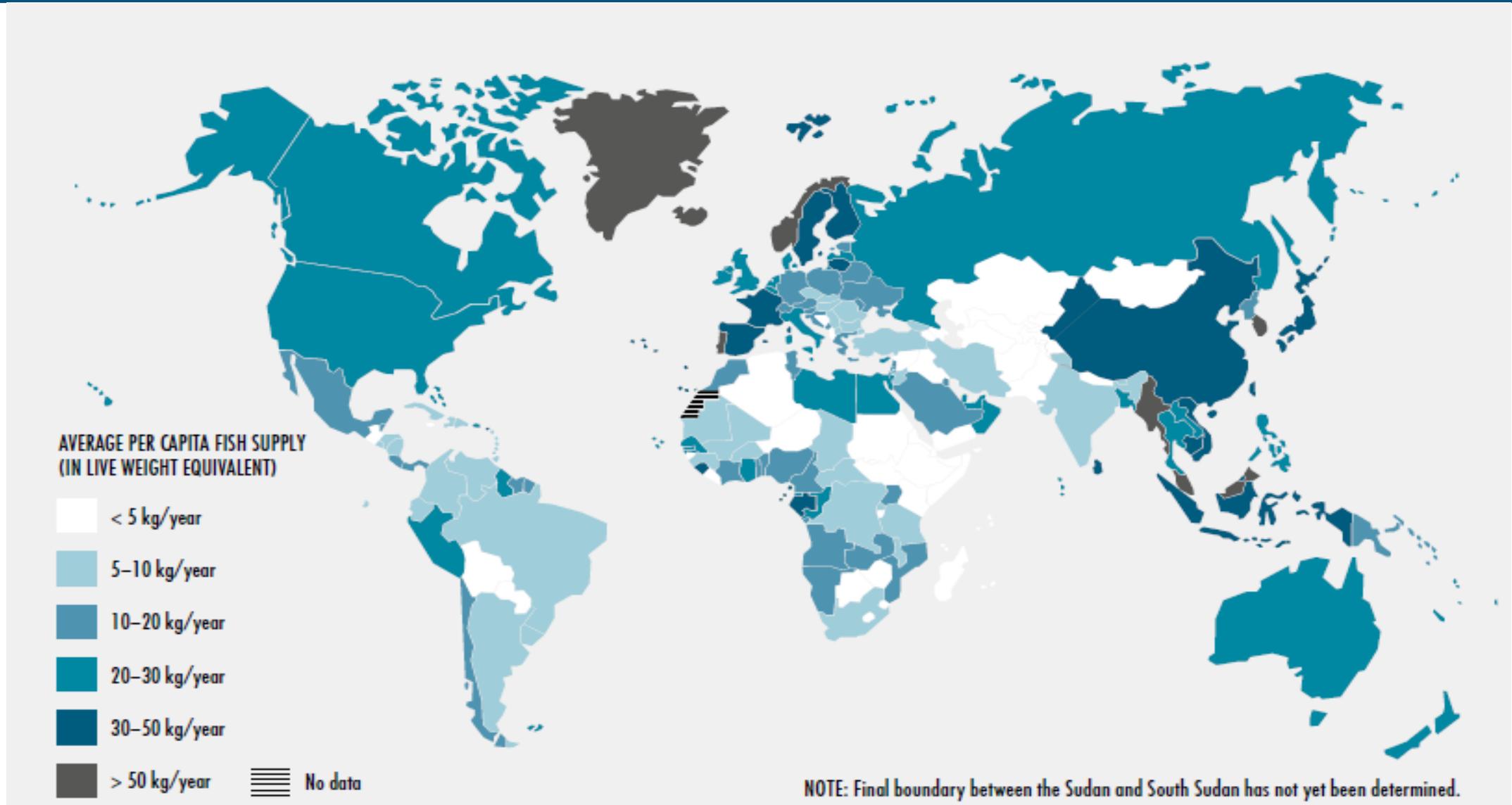
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Total aquaculture production, tonnes, 2019

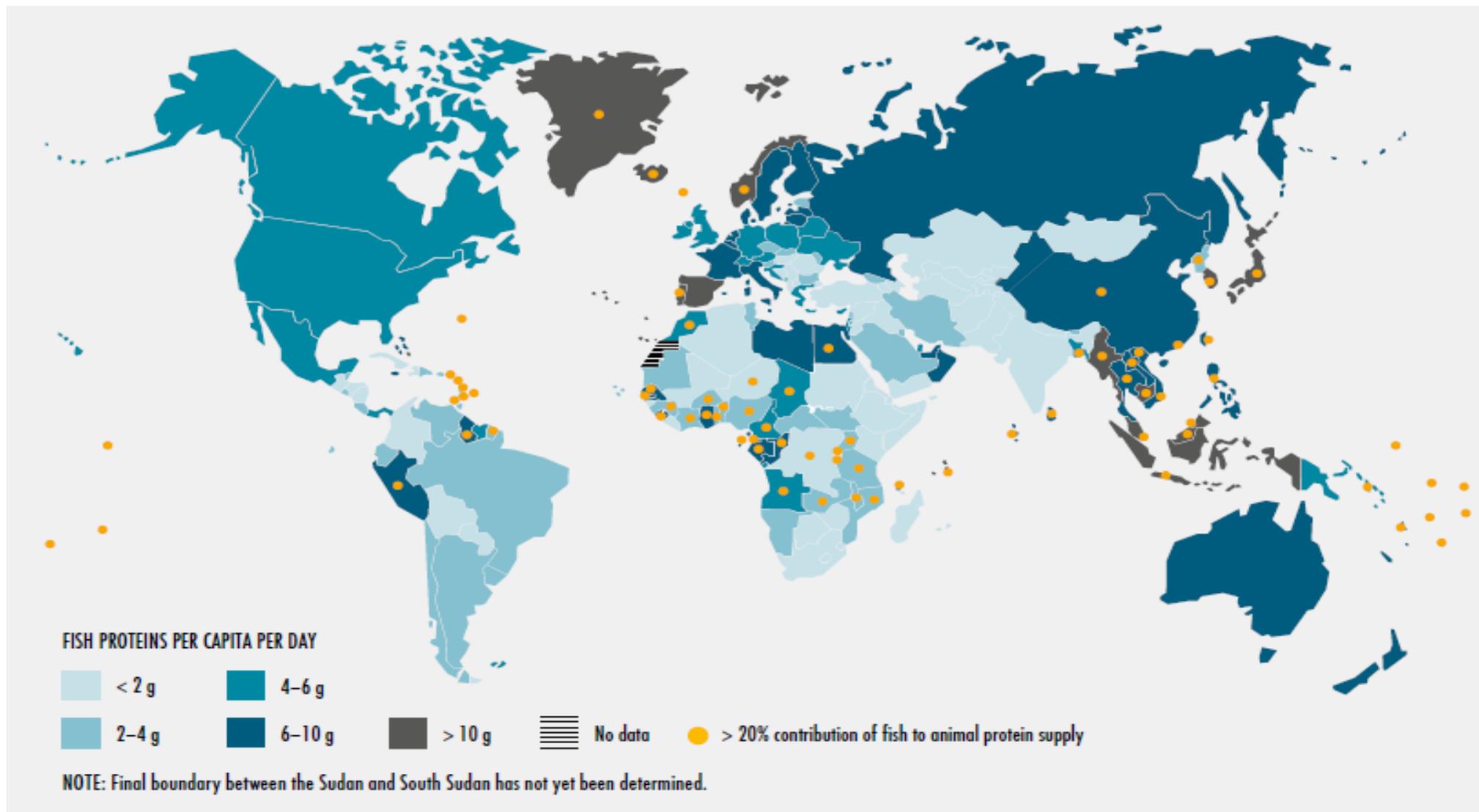
The data presented excludes aquatic plants.



# Fish food supply



# Contribution of fish to animal proteins



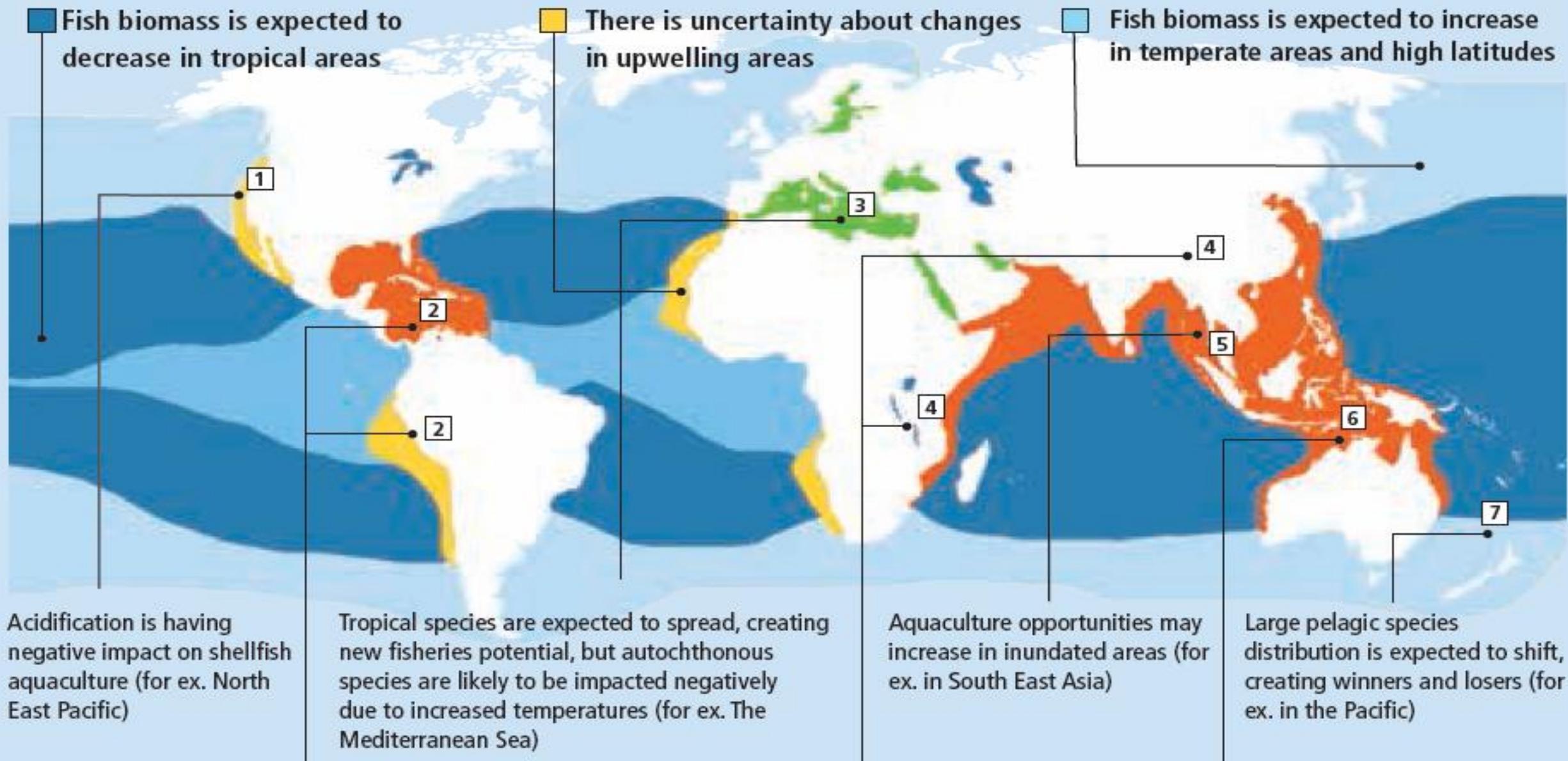
# Issues, constraints, challenges

## Resources and environment

- Environment degradation and habitat destruction
- Loss of biodiversity
- Overexploited fish stocks
- Biosecurity (disease outbreaks)
- Climate changes (El Niño, ocean acidification, stock migration, severe weather conditions, etc.)

## Socioeconomic and governance

- Overcapacity (fleets and labor)
- IUU fishing
- Bycatch and discards
- Access to capital and financial services (loans, insurance, etc.)
- Equity (poverty, forced labor, child labor, etc.)
- Public image of fisheries and aquaculture

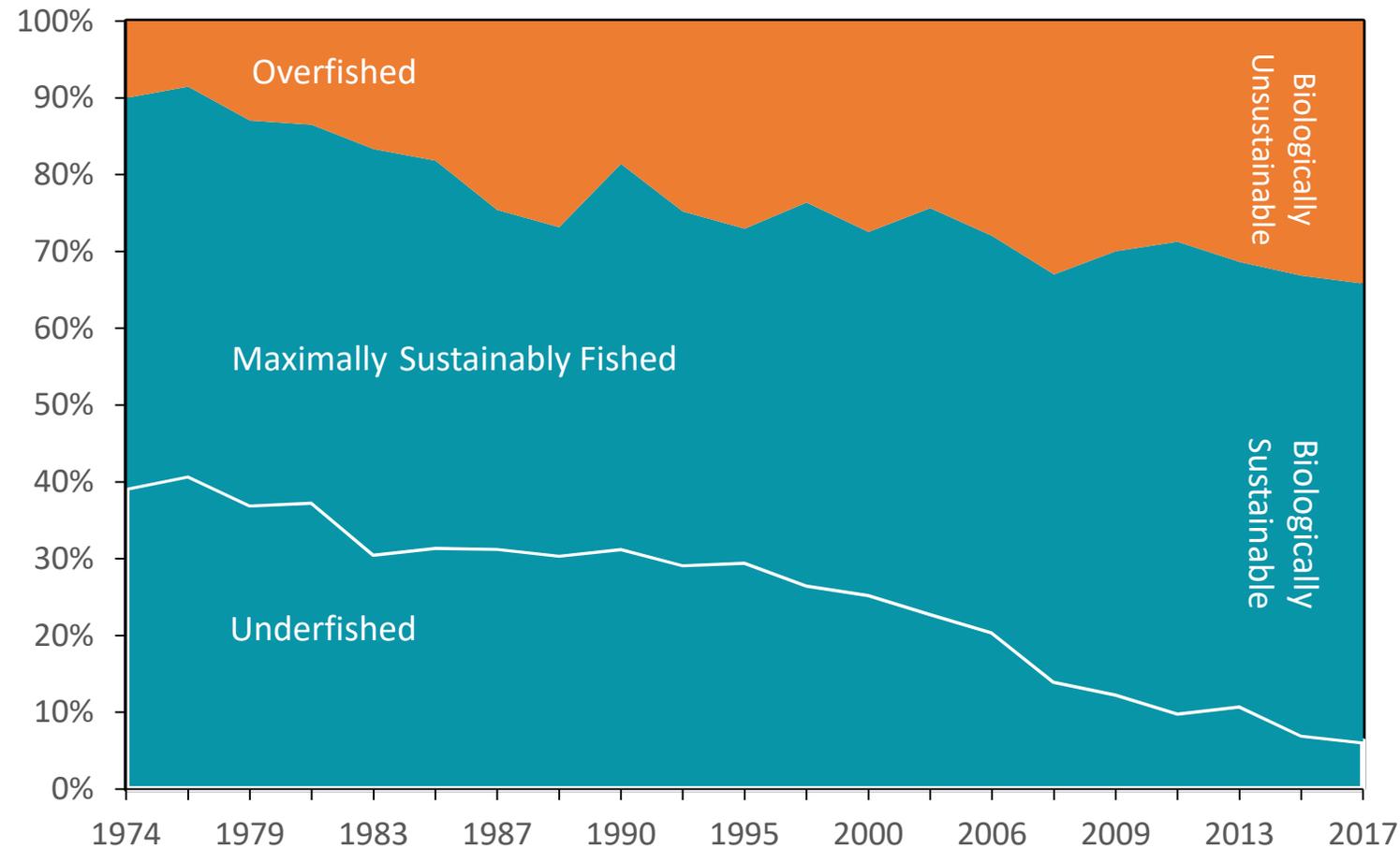


□ High-Latitude Spring Bloom Systems  
 □ Semi-Enclosed Seas

■ Coastal Boundary System  
 ■ Eastern Boundary Upwelling System

□ Equatorial Upwelling Systems  
 ■ Subtropical Gyres

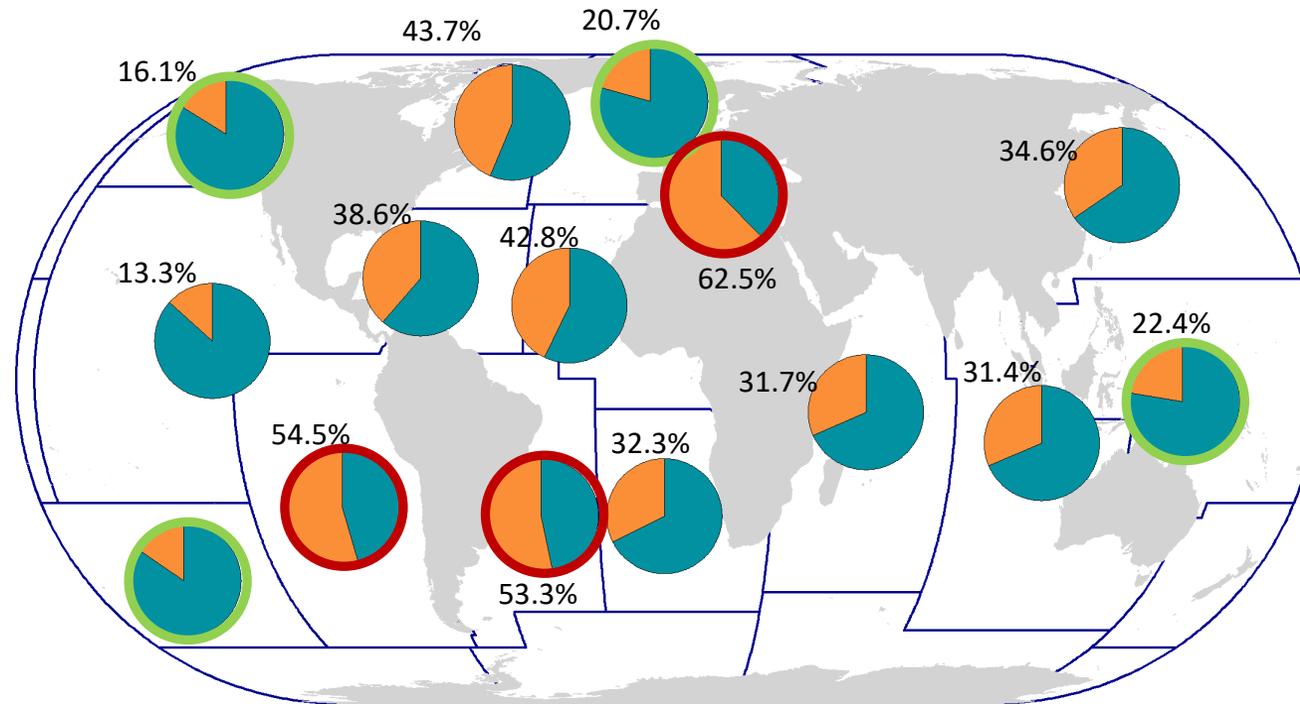
# Status of fisheries resources



- 34.2% of stocks (by number) unsustainably fished (1.1% deterioration from 2015)
- 78.7% of fish landings come from biologically sustainable stocks
- Top 10 species (by volume) = 69% sustainably fished
- Principal tuna species = 66.6 sustainably fished (10% improvement from 2015)

- **SDG TARGET 14.4 (TO END OVERFISHING OF MARINE FISHERIES BY 2020) NOT ACHIEVED**
- **STOCKS UNDER INTENSE MANAGEMENT ARE INCREASINGLY SUSTAINABLE OR REBUILDING**

# Sustainability trends



but the way we produce more food cannot be at the expense of the planet

Fishery sustainability:

“development that meets the needs of the present without compromising the ability of future generations to meet their own needs”

# Critical role of statistics

- Knowledge of the status and trends of the sector, not limited to production, but encompassing the entire value chain, is key to both sound policy-making and to assess and track the performance of responsible fisheries management.
- The limited availability of information often constrains policy-making and planning.
- They need to be accurate, timely and detailed as possible
- Statistics are important in better monitoring the trends and the progress towards national and international development goals and targets
- Need to use comparable/ international standards

# Main issues in data collection

- **Technical capacity**
  - Lack of knowledge, utilization of the most suitable methodologies
  - Skilled human resources, turn over
  - Infrastructure to collate, manage, analyze, store and disseminate national statistics and information
  - lack of appropriate, cost-effective data collection system and information systems
- **Recognition of the importance of the sector**
  - Lack of human and financial resources
- **Organizational, Governance**
  - Limited communication among stakeholders involved on fisheries and aquaculture statistics and information
- **Multiple reporting obligations**

# Capture fisheries production: main challenges

## Coverage

- Subsistence
- Small-scale
- Industrial fisheries
- Recreational

Nationality

## Species

- Identification ,
- Amount
- Value (ex vessel price)

## Fishing areas +landing site

- FAO fishing areas
- Transshipment
- Landing site

EEZ-Outside EEZ

## Catch diagram

- Retained catches
- Concept live-weight equivalent

# Capture fisheries: main challenges – nationality of catches

## Complex Fishing arrangements

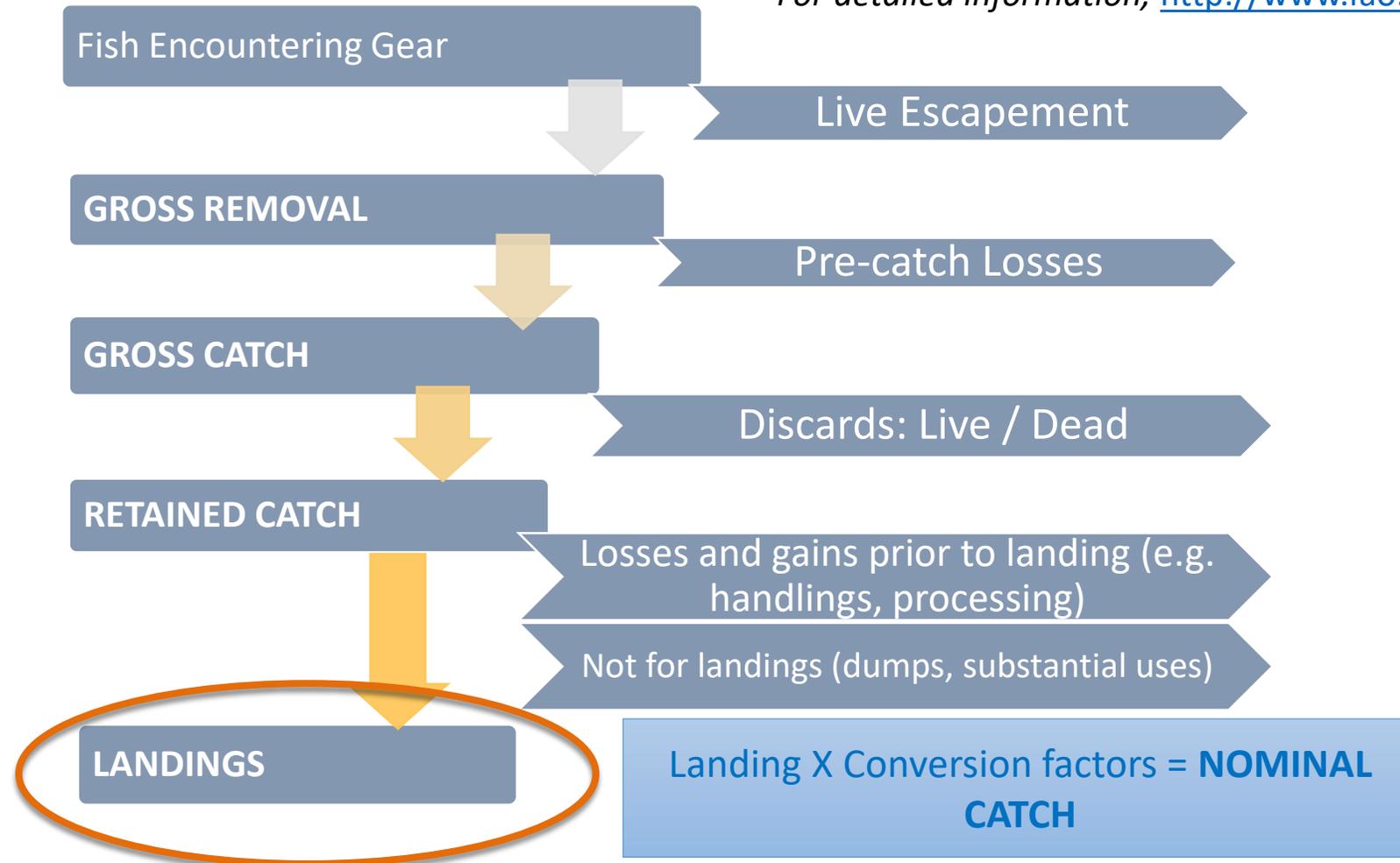
- Foreign fleets Operating within National EEZ:
  - Landing on National Ports
  - Landing at Countries EEZ Ports
- National Vessels Operating in Foreign waters:
  - Landing on National Ports
  - Landing on foreign Ports
- Flags of convenience
- Multi national joint Ventures

**Flag of the fishing vessel** is the best available criterion for the **assignment of nationality** to catch and landings data.

Also relevant for Trade Statistics.

# The catch diagram

For detailed information, <http://www.fao.org/3/bt981t/bt981t.pdf>



# Aquaculture production – main challenges

## Coverage

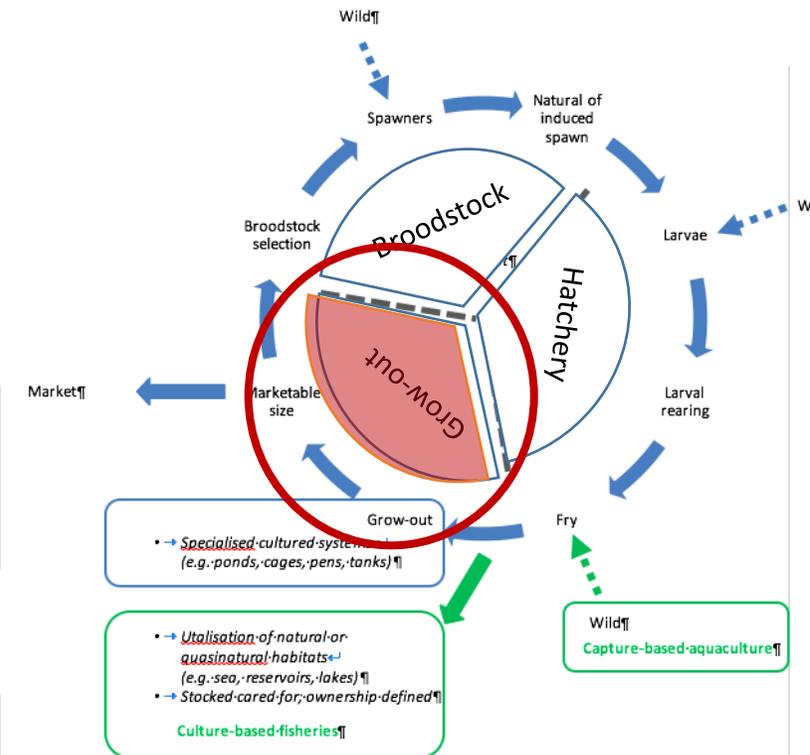
- Definition
- Difference with capture fisheries
- Method of culture

## Species

- Identification , amount and value (farm-gate price)

## Environment

- Freshwater
- Brackish water
- Marine



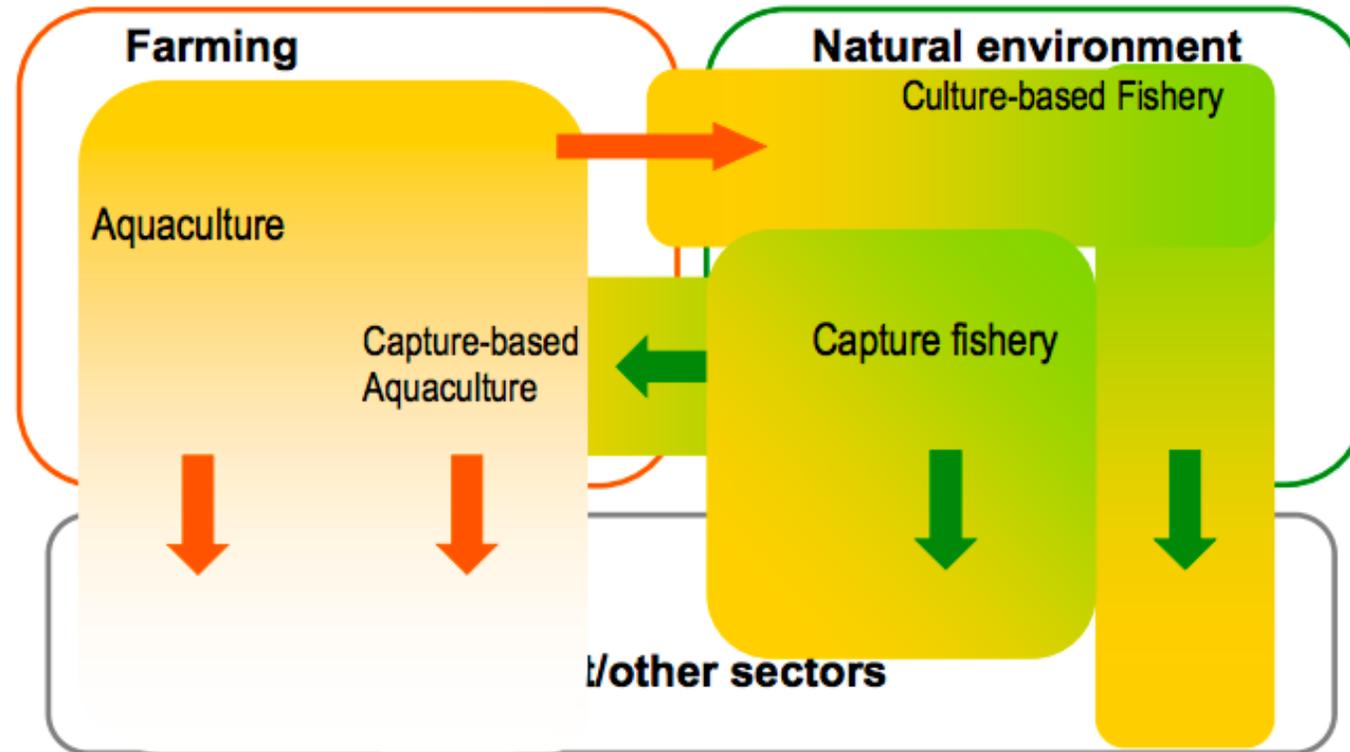
# Definition of aquaculture

FAO and the CWP have formulated a **working definition** of aquaculture activities for **statistical purposes**:

Aquaculture is the farming of aquatic organisms: fish, molluscs, crustaceans, aquatic plants, crocodiles, alligators, turtles, and amphibians. **Farming implies some form of intervention in the rearing process to enhance production**, such as regular stocking, feeding, protection from predators, etc. **Farming also implies individual or corporate ownership of the stock being cultivated**

# Fisheries or aquaculture?

## Statistical Differentiation



-  Aquaculture production
-  Capture production

# Trade – main challenges

## Coverage

- Transshipments
- Landing abroad
- Unrecorded trade

## Species/product forms

- Identification
- Adequate national coding systems
- Amount & value

# FAO: Main data issues from data received from LA & Caribbean

- No regular reporting
- Late submission of questionnaires
- Quality varies significantly among countries
- For some countries data look incomplete, especially when cross-checking them with additional/alternative sources
- The level of detail by species looks inaccurate or lacking species level identification, leading to miscalculations in production and trade and no reporting for certain groups
- For production data not reported in live-weight equivalent
- Changes or improvements in the data collection that cause abrupt changes
- Issues with trade of some of the countries: intra-regional trade not well captured

# FAO: Main data issues from data received from LA & Caribbean (cont.)

- IUU, transshipments, recreational, subsistence not well covered
- Difficulty to monitor small-scale/artisanal capture fisheries due to the great number of landing sites
- Lack or missing information or utilization on stock assessment;
- Not regular collection of socio economic data (such as fleet and employment), often done through national frame surveys but not collated and made available, or not shared amongst departments
- FAO needs to do estimates for all non-reporting countries

# How to improve fisheries and aquaculture statistics



- Building Capacity (human, institutional)
- Adopting international standards
- Adopting the most effective methodology
- Collect the needed data and utilize them!
- Utilizing proper tools
- Big data etc.

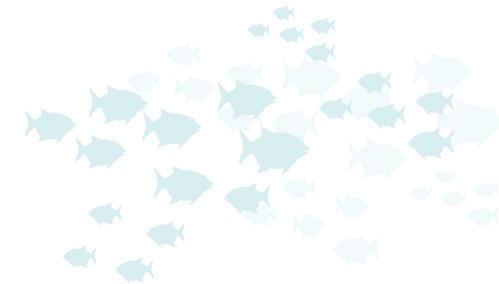
# FAO: only global source of F&A statistics, but not only

## STANDARDS

- Coordinating Working Party on Fishery Statistics (CWP) (Secretariat, meetings, coordinating task groups) – Handbook (since 1960, Art 6 FAO Constitution)
- Development of classifications, standards, methodologies in fisheries and aquaculture statistics

## CAPACITY BUILDING

- Capacity building projects in fisheries and aquaculture statistics, assessments, including in socio-economic statistics
- Capacity building trainings on standards/methodologies for improved data collection and statistics at country or regional levels

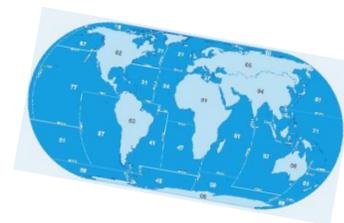


# CWP Handbook on fishery statistics

- Wide range of fishery statistical concepts, definitions, classifications and related matters as applied to fishery statistics by the international agencies.
- <http://www.fao.org/fishery/cwp/search/en>
- Web-based document with continuous and timely updates
- Single authorized standards and concepts, but also a range of them where no agreed standards exist



ASFIS  
ISSCFG  
ISSCFV  
ISSCFC



<http://www.fao.org/fishery/collection/asfis/en>

# CWP 2019-2022 Intersessional activities

- Ad-hoc TG on **reference harmonization standard**
- Ad-hoc TG on **fishing effort concepts**
- Ad-hoc TG on **catch concepts**
- Ad-hoc TG on **best practices for streamlining statistical data workflow**, with a focus on confidentiality issues
- Ad-hoc TG on the **revision of the aquaculture section** of the Handbook including farming systems classification

# FAO capacity building in fisheries and aquaculture statistics

- CWP
- Guidelines, training courses, tools

<http://www.fao.org/3/a-i3639e.pdf>



Integrated Fishery Statistics and Management  
Information Systems

Calipseo

ArtFish

SmartForms

Big Data

Several SDGs are directly relevant to fisheries and aquaculture, including 1, 2 and 8



Goal 14:  
Conserve and sustainably use the oceans, seas and marine resources for sustainable development



- Goes beyond conservation to focus on the **people** and **coastal communities**,
- Provides a special focus to **small scale fisheries** and the fisheries and populations reliant on this subsector;
- Makes **achieving food security** and ending malnutrition a global priority.
- The importance of fisheries in local and global food systems and its contribution to nutrition and health, particularly for the poor are overlooked and undervalued.
- **End overfishing** and **combat IUU**

- FAO custodian of 4 SDGs under SDG 14
- **14.4.1**
- **14.7.1**
- **14.b.1**
- **14.6.1**

## Target 14.4

By 2020, effectively regulate harvesting and end overfishing, illegal, unreported and unregulated fishing and destructive fishing practices and implement science-based management plans, in order to **restore fish stocks** in the shortest time feasible, at least to levels that can **produce maximum sustainable yield** as determined by their biological characteristics”

## Indicator 14.4.1

**Proportion of fish stocks  
within biologically sustainable levels**

Capacity building, workshops and online e-learning

## FAO contacts

14.4.1 - [Yimin.Ye@fao.org](mailto:Yimin.Ye@fao.org)  
[Marc.Taconet@fao.org](mailto:Marc.Taconet@fao.org)

## Target 14.7

By 2030, **increase the economic benefits** to Small Island developing States and least developed countries **from the sustainable use of marine resources**, including through sustainable management of fisheries, aquaculture and tourism

**Indicator 14.7.1** – Sustainable fisheries as a percentage of GDP in small island developing States, least developed countries and all countries

### FAO contacts

SDG14.4.7 - [Audun.Lem@fao.org](mailto:Audun.Lem@fao.org)  
[Marcio.Desouza@fao.org](mailto:Marcio.Desouza@fao.org)

# Thank you

[Stefania.Vannuccini@fao.org](mailto:Stefania.Vannuccini@fao.org)

## FAO Fisheries and Aquaculture statistics

**General information:** <http://www.fao.org/fishery/statistics/en>

**Online query panels:** <http://www.fao.org/fishery/topic/16140/en>

**FishstatJ:** <http://www.fao.org/fishery/statistics/software/fishstatj/en>

**FAO Yearbook of fisheries and aquaculture:**

<http://www.fao.org/fishery/statistics/yearbook/en>

**FAO SOFIA:** <http://www.fao.org/fishery/sofia/en>

**Email:** [Fish-Statistics-Inquiries@fao.org](mailto:Fish-Statistics-Inquiries@fao.org)