



Food and Agriculture Organization
of the United Nations

TWENTY-NINTH
SESSION OF

**THE ASIA
AND PACIFIC COMMISSION
ON AGRICULTURAL
STATISTICS**

Ulaanbaatar, Mongolia
22-25 November 2021

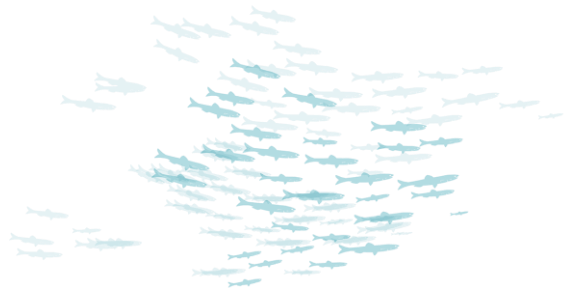
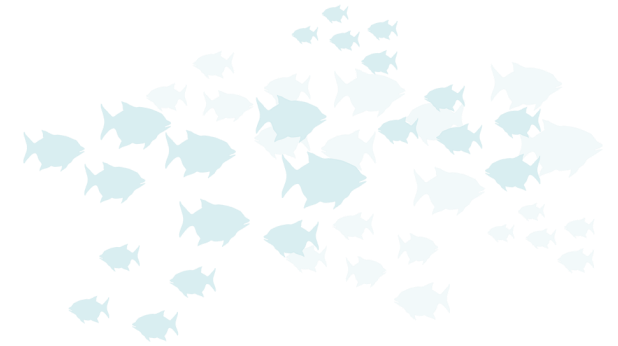
**Enhancing fishery and
aquaculture statistics:
international perspective**

APCAS29

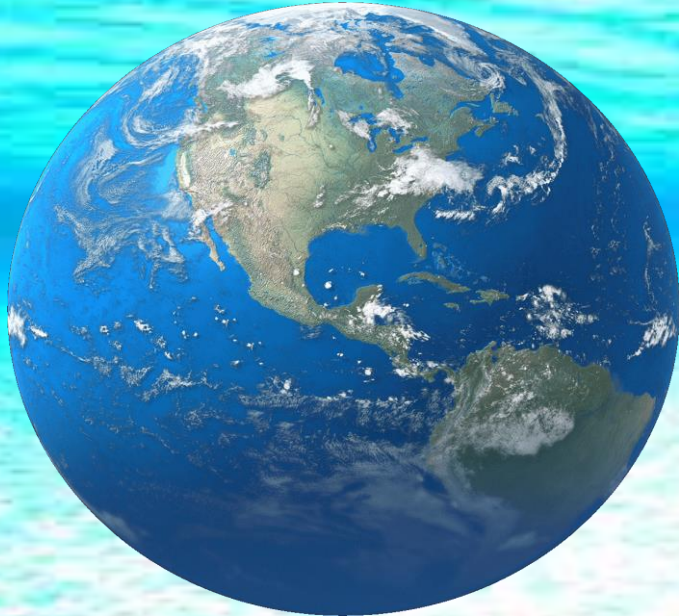
Stefania Vannuccini
**Team Leader – Fisheries and
Aquaculture Statistics**
CWP Secretary
FAO

Outline

- 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

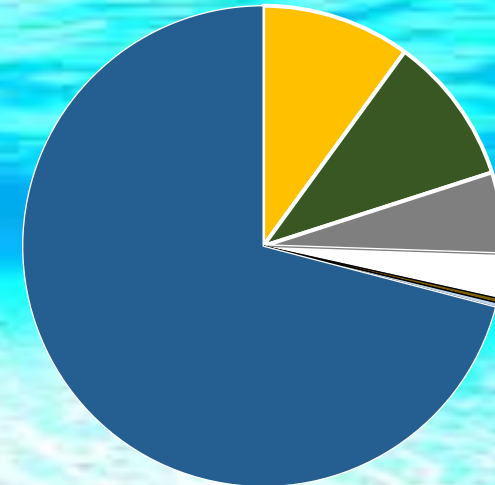


Water

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

Healthy aquatic ecosystems are vital to human welfare

Surface area



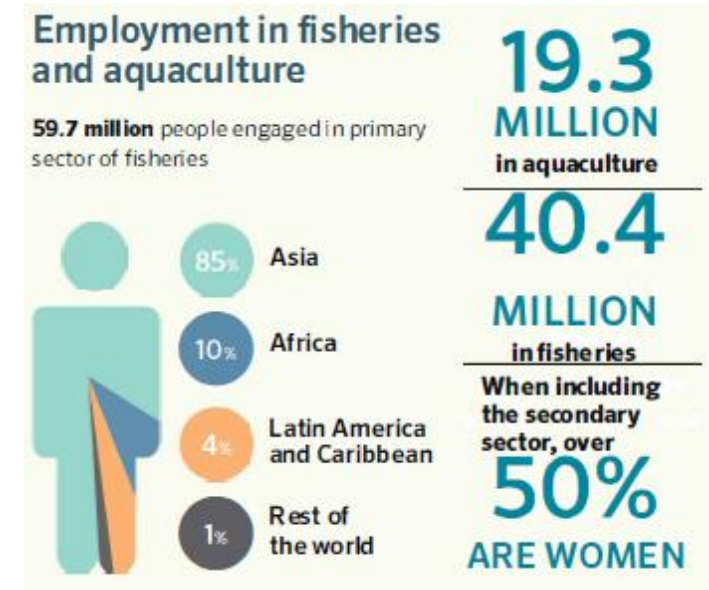
- Agriculture (incl. livestock)
- Forests and Shrubs
- Barren land
- Glaciers
- Urban
- Freshwater
- Ocean

Importance fisheries and aquaculture

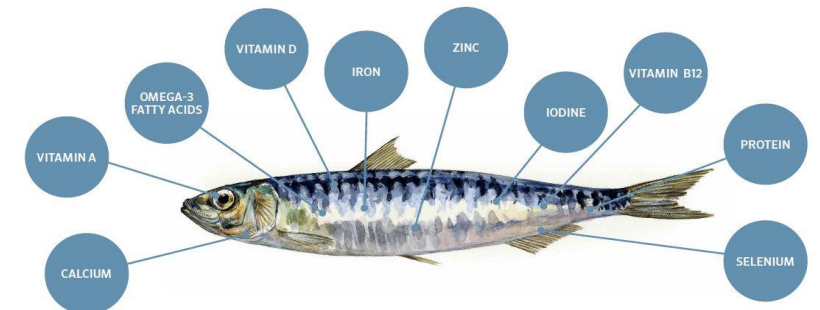
- Key role in food security
- Nutritious food
- Employment
- Income/Livelihood



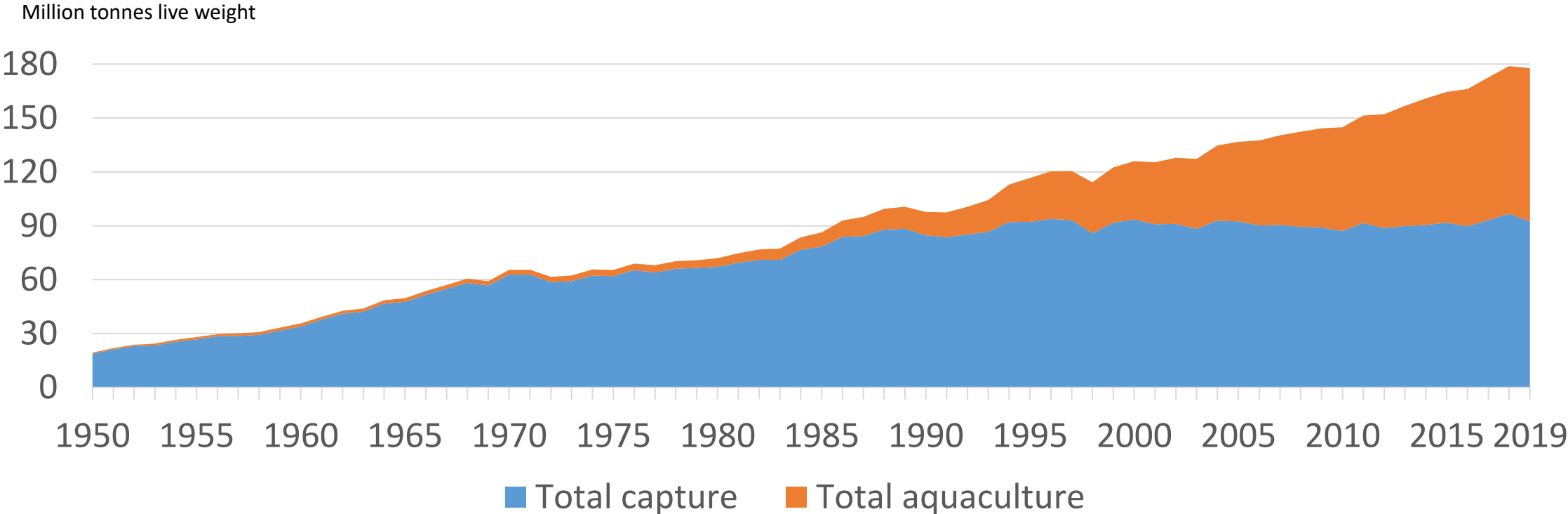
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Fish: Nature's superfood



Growing production



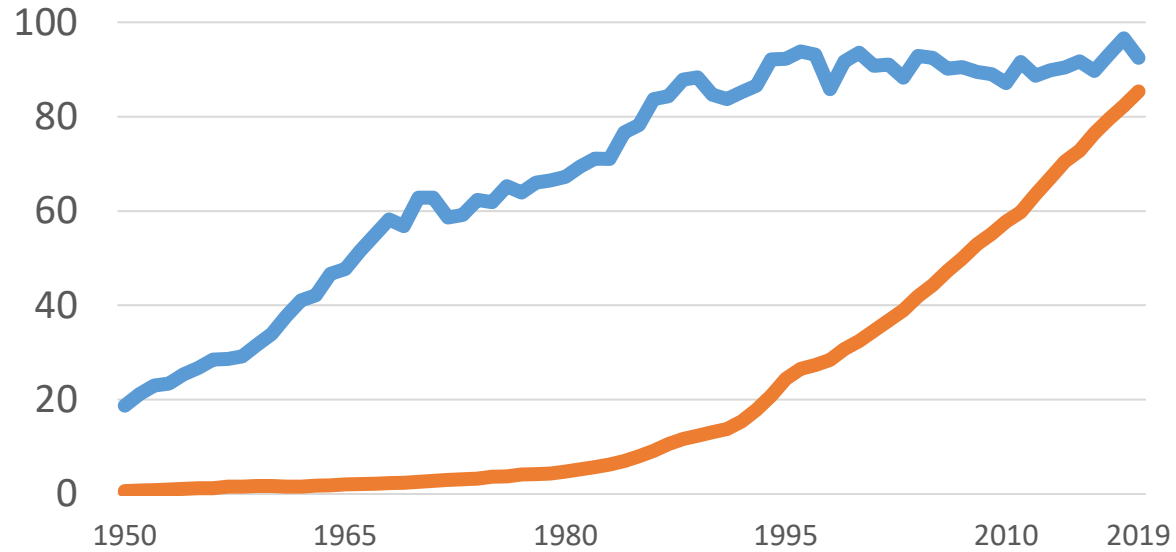
NOTE: Excludes aquatic mammals, crocodiles, alligators and caimans, seaweeds and other aquatic plants

Source: FAO FishStat

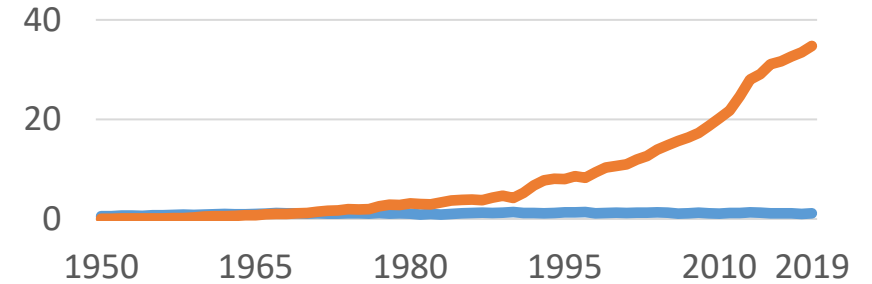
Growing production

Total excluding aquatic plants

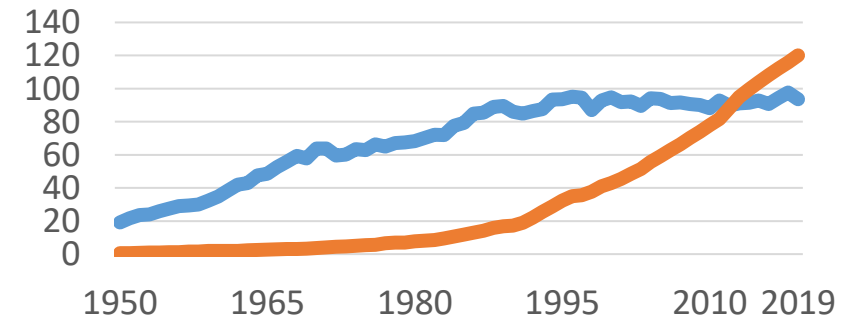
(million tonnes live weight)



Aquatic plants



Total including aquatic plants



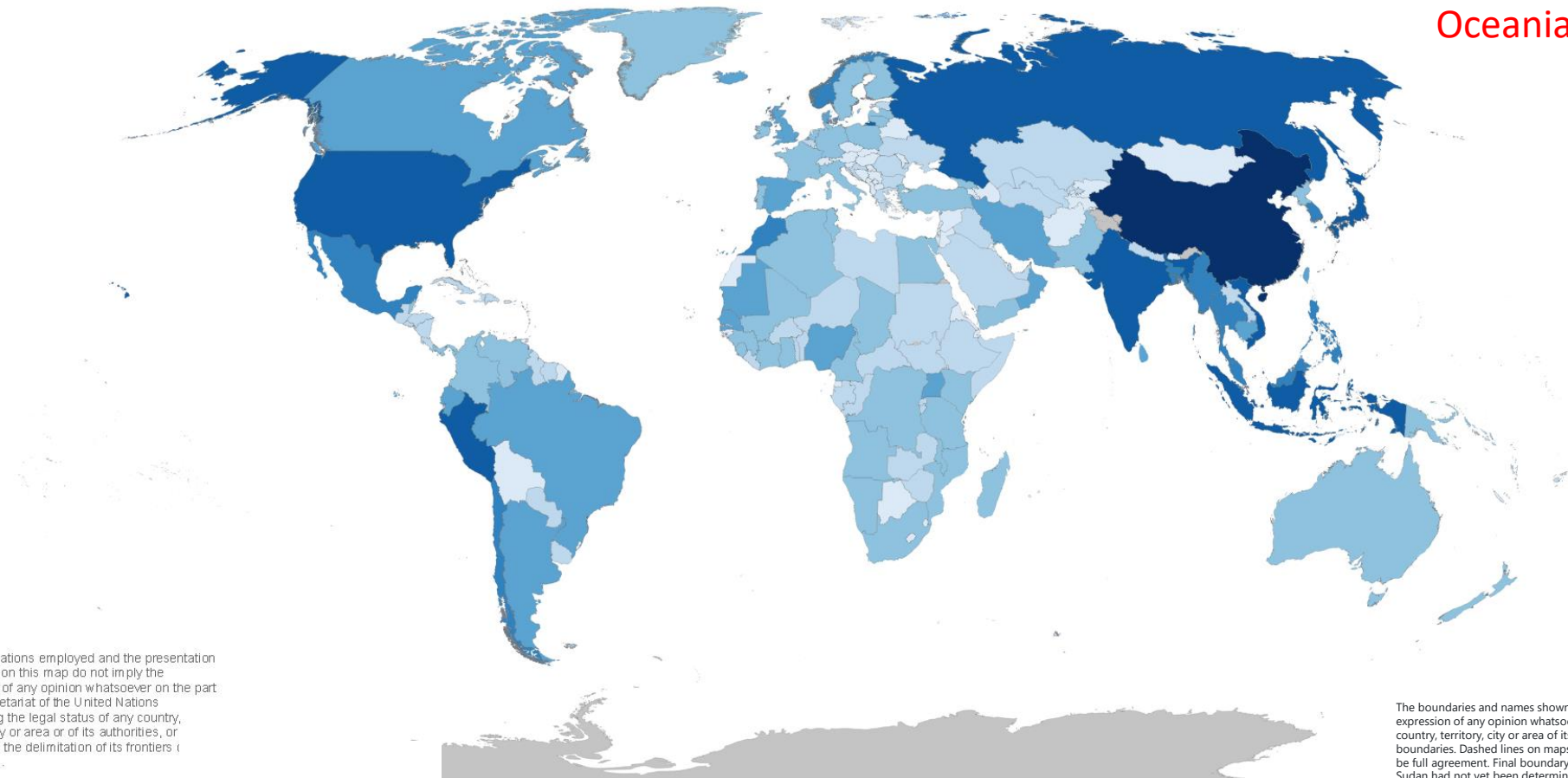
— Total capture

— Total aquaculture

Source: FAO FishStat

Capture fisheries production - 2019

Asia and Pacific share 55%
Asia 53%
Oceania 2%



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 (boundaries).

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Total capture production, tonnes, 2019

The data presented excludes aquatic plants.

0 - 10k 10k - 100k 100k - 500k 500k - 1M 1M - 3M 3M - 8M >13M

Source: FAO FishStat

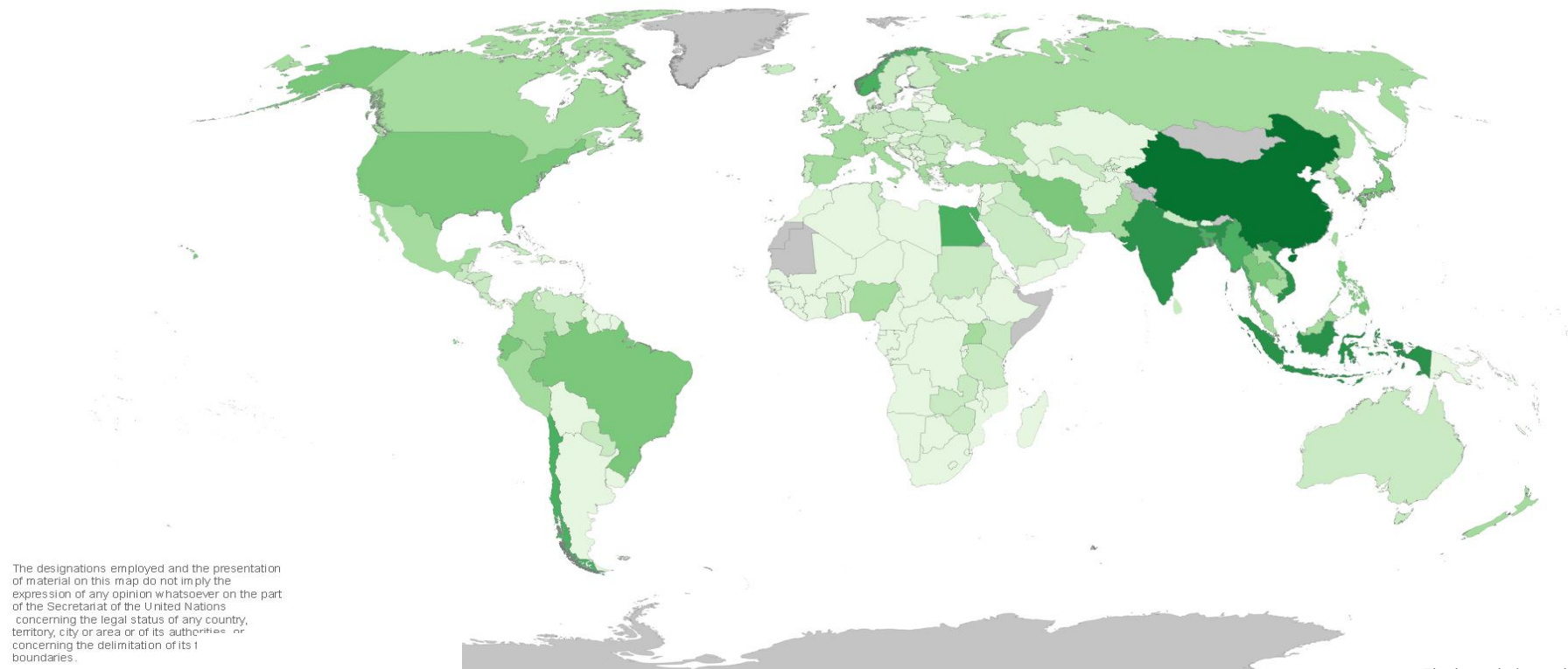
Source: FAO (data), OCHA (map)

Projection: Sphere Robinson (EPSG:53030)

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Aquaculture production - 2019

Asia and Pacific share 89%
Asia 88%
Oceania 0.2%



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 boundaries.

Total aquaculture production, tonnes, 2019

The data presented excludes aquatic plants.



Source: FAO (data), OCHA (map)

Projection: Sphere Robinson (EPSG:53030)

The boundaries and names shown and the designations used on these map(s) do not imply the expression of any opinion whatsoever on the part of FAO concerning the legal status of any country, territory, city or area of its authorities, or concerning the delimitation of its frontier and boundaries. Dashed lines on maps represent approximate border lines for which there may not yet be full agreement. Final boundary between the Republic of Sudan and the Republic of South Sudan had not

Source: FAO FishStat

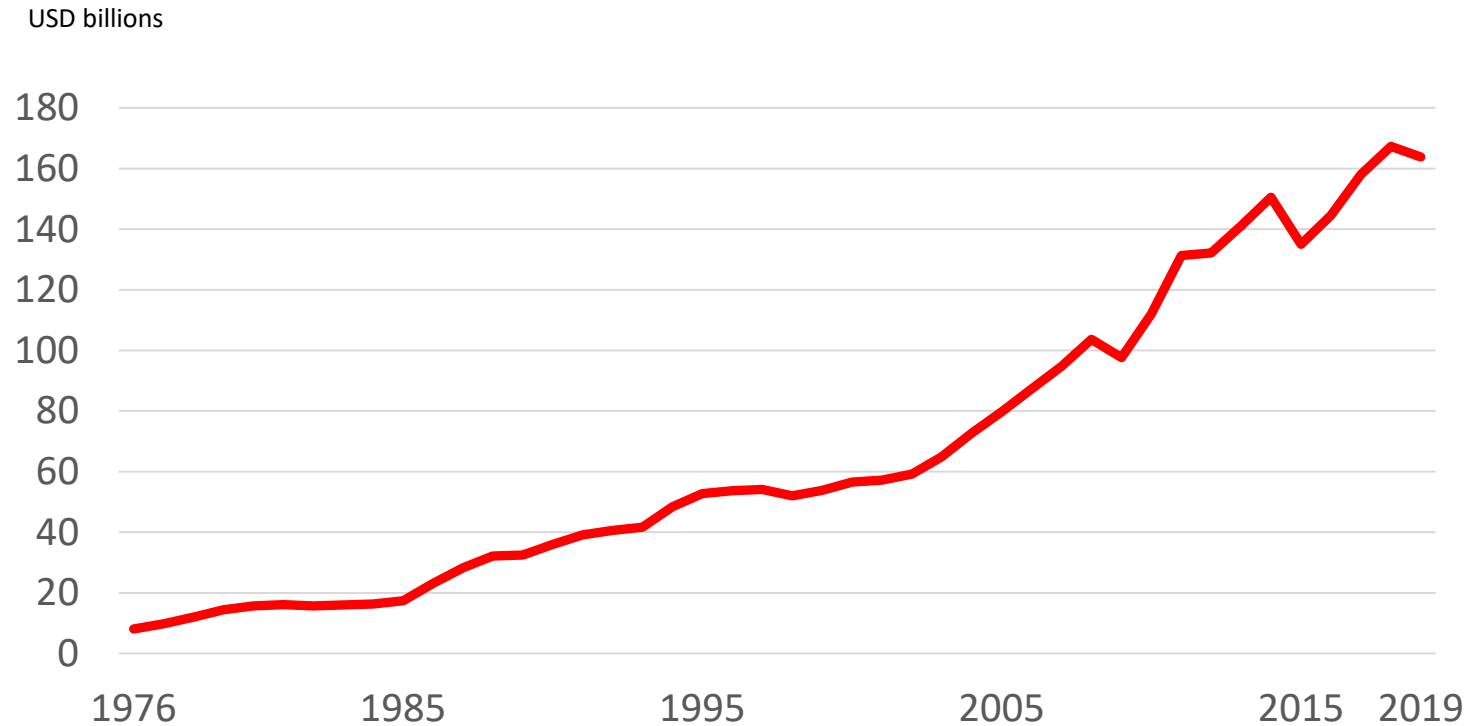
Fish Trade

Exports

Asia and Pacific share 39%
Asia 37%
Oceania 2%

Imports

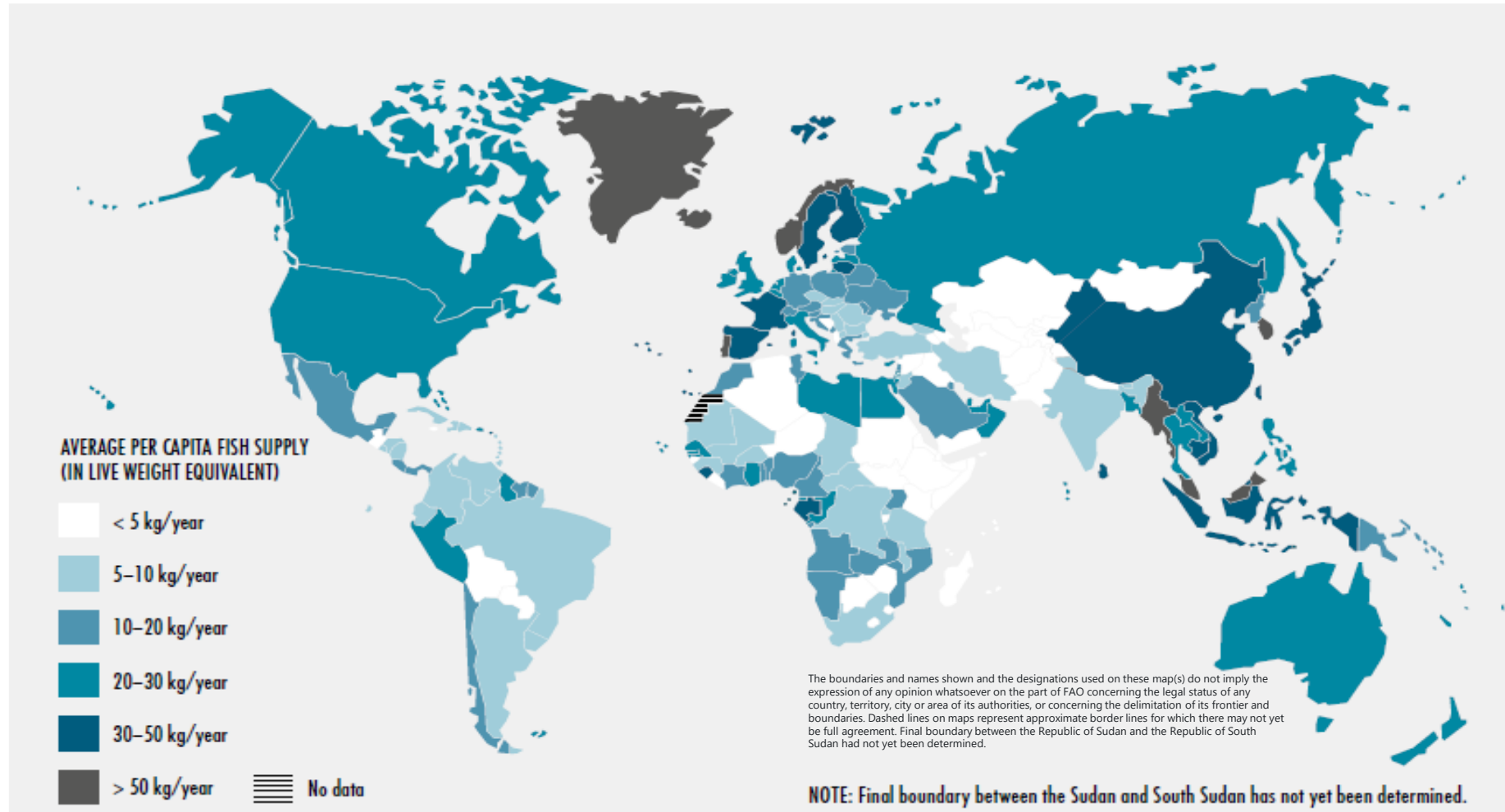
Asia and Pacific share 37%
Asia 36%
Oceania 1%



- USD 162 BILLION IN EXPORT VALUE (VS USD 80 BILLION IN 1976)
- 35-38 % OF FISH PRODUCTION ENTERS INTERNATIONAL TRADE EVERY YEAR
- DEVELOPING COUNTRIES MADE UP 54% OF TOTAL FISH EXPORTS BY VALUE
- NET TRADE REVENUE FOR DEVELOPING COUNTRIES EXCEEDED OF ALL MEATS, TOBACCO, RICE AND SUGAR COMBINED

Source: FAO FishStat

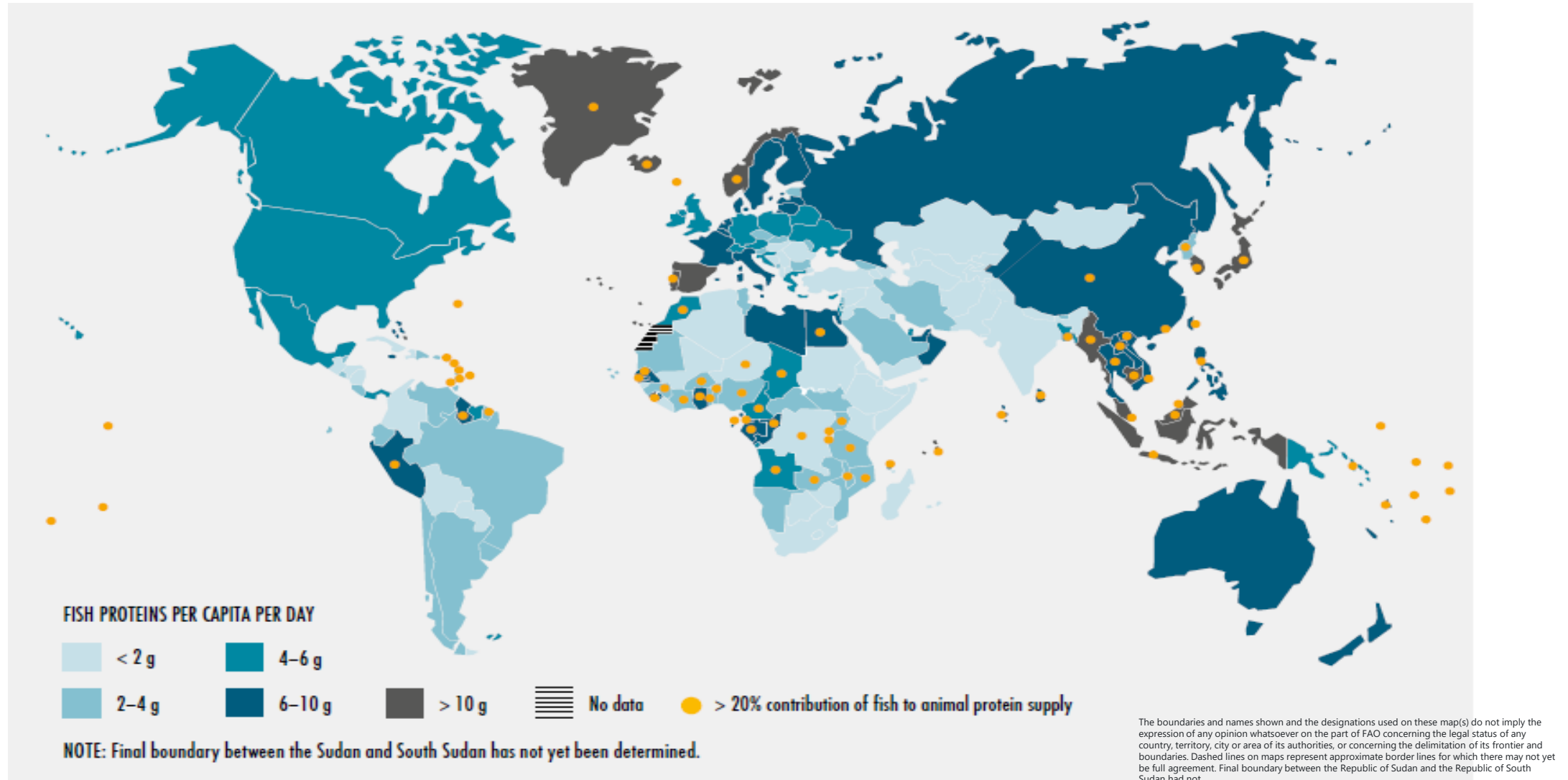
Fish food supply



Source: FAO FishStat

APCAS29, Ulaanbaatar, Mongolia, 22-25 November 2021

Contribution of fish to animal proteins



Issues, constraints, challenges

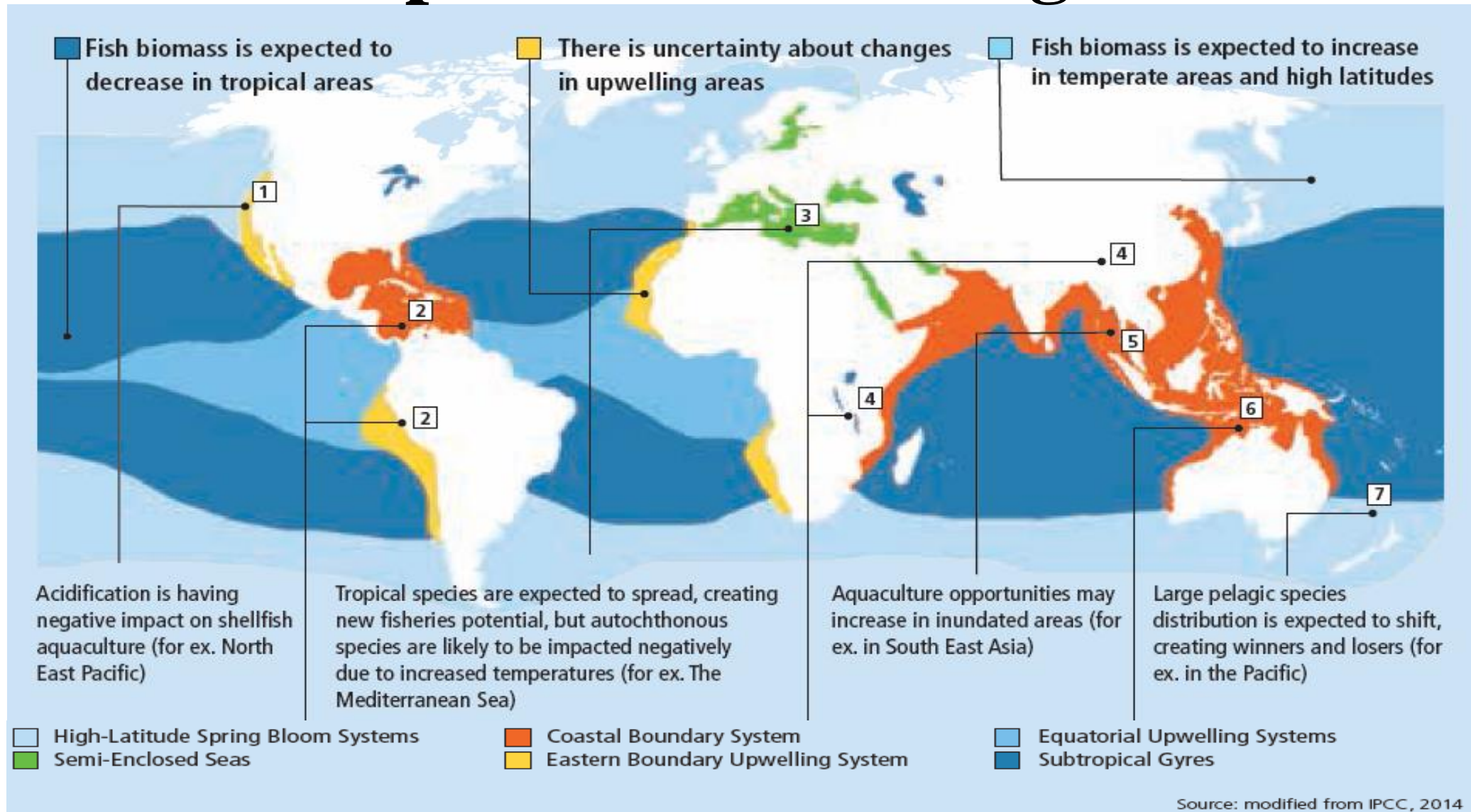
Resources and environment

- 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.)

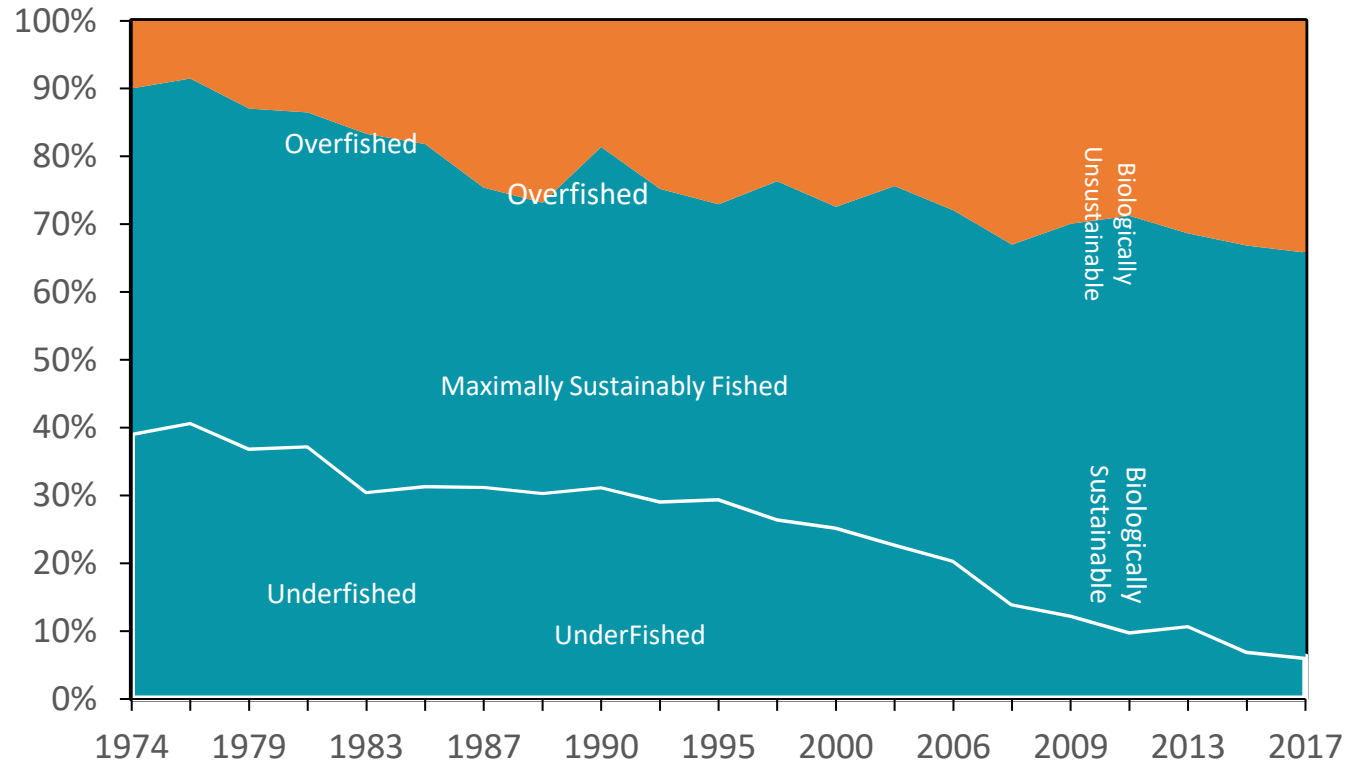
Socioeconomic and governance

- 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

Potential impact climate change



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: more food has to be produced in future decades...

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”

World Commission on Environment and Development

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 and aquaculture 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

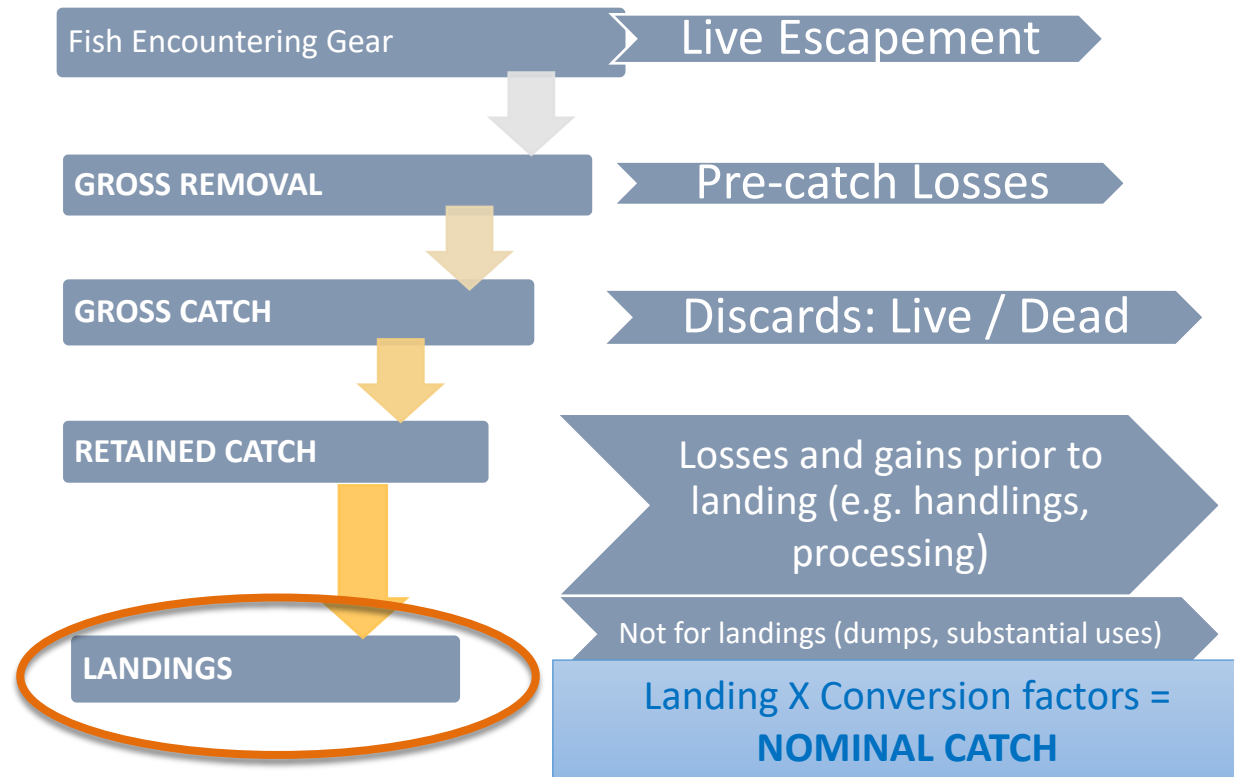
- Multi national joint Ventures

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

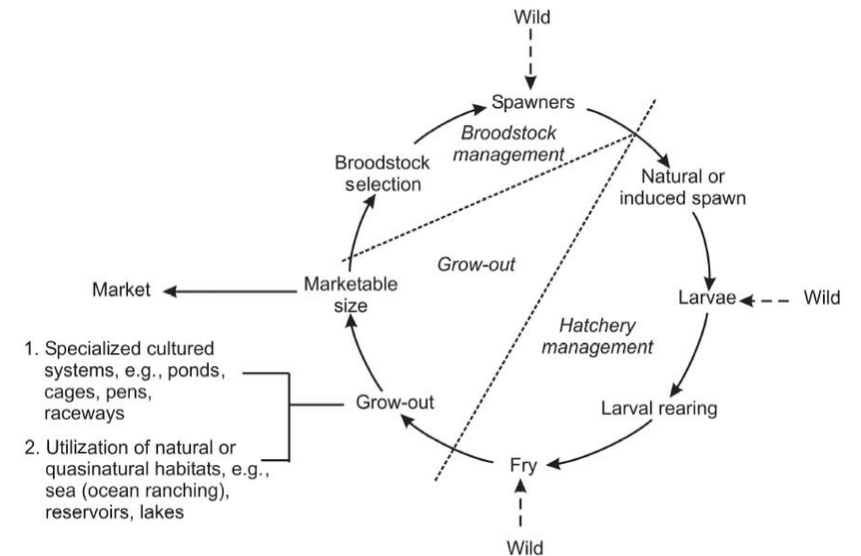
- Definition
- Difference with capture fisheries
- Method of culture

Species

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

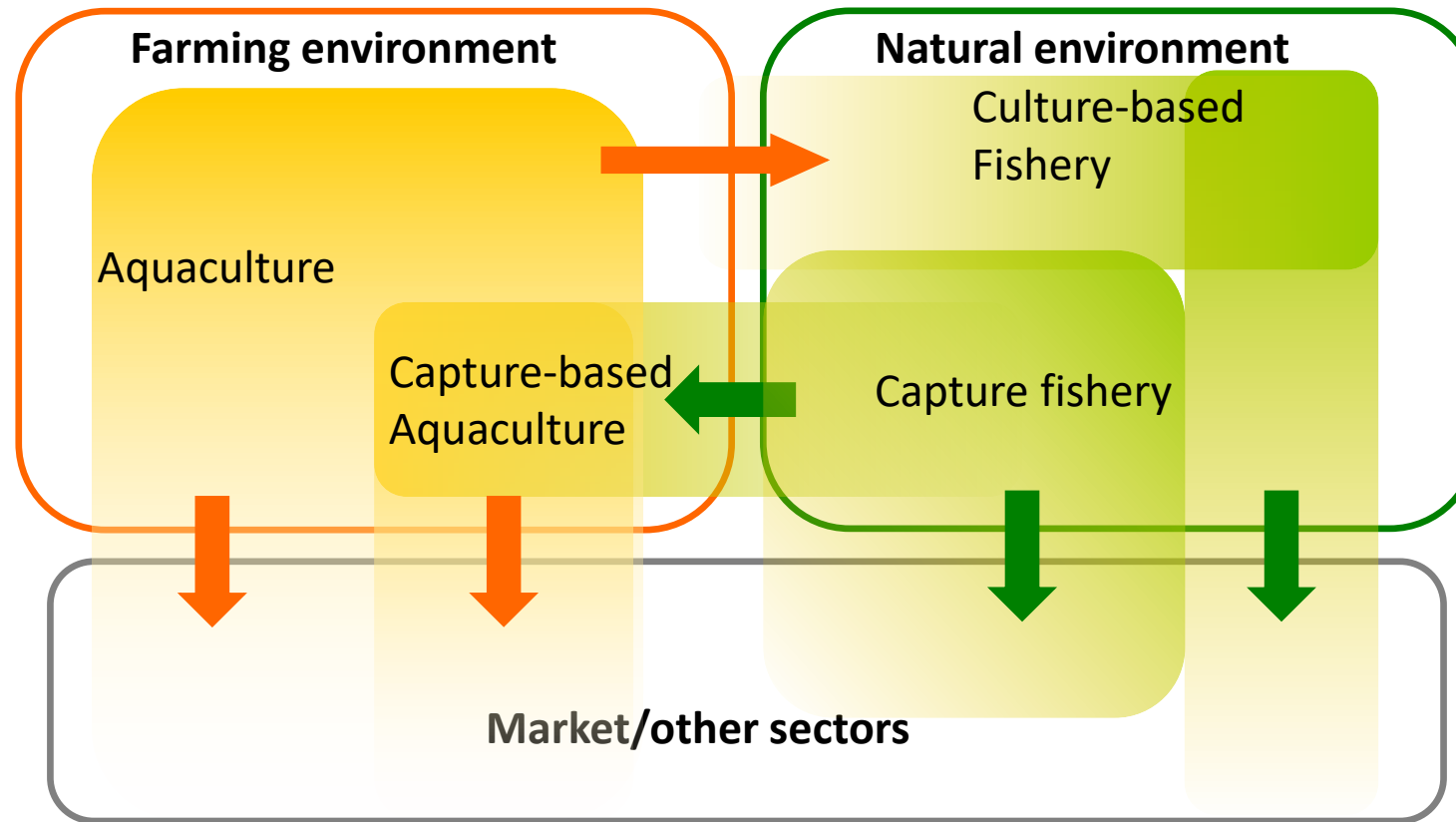
Environment



- Freshwater
- Brackish water
- Marine



De Silva, et. al.
2008

Fisheries or aquaculture?



-  Aquaculture production
-  Capture production

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**

Trade – main challenges

Coverage

- Transhipments
- Landing abroad
- Unrecorded trade

Species/product forms

- Identification
- Adequate national coding systems
- Amount & value

FAO: Main data issues from data received from Asian-Pacific countries

- No regular reporting/low rate
- Late submission of questionnaires
- Quality varies significantly among countries
- For some countries data look incomplete, especially when cross-checking them with additional/alternative sources
- Major problems for inland fisheries
- Issues as well for coastal fisheries in some countries, in particular in the Pacific
- 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 Asian-Pacific countries

- 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



Coordinating Working Party on Fisheries Statistics (CWP) Handbook on fishery statistics

- CWP provides a mechanism for the coordination of fishery statistical programs of regional fishery bodies and other inter-governmental organizations, whose remit relates to 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

SDGs

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**

SDG 14.4.1

→ **progress in measuring the sustainability of the world's marine capture fisheries**

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
Marc.Taconet@fao.org

SDG 14.7.1

→ **Sustainable
fisheries as % of GDP**

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
Marcio.Desouza@fao.org

Proposed Recommendations *in brief*

- *FAO and development partners to coordinate their efforts to support countries in the improvement of fisheries and aquaculture statistics;*
- *Countries align their national indicator framework with the global SDG monitoring framework and to reinforce the collection of data to report on SDG 14, in particular on SDG 14.4.1 and 14.7.1 as more data driven*
- *FAO to support countries to adopt proper collection systems according to appropriate international standards and in particular improve the collection of small-scale fisheries and inland fisheries*



Thank you

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