Global overview of Fisheries and Aquaculture

MR/NIFES/FAO/UNIDO - NASF Side event
Prospects for increased sustainable harvest from the ocean
7 March 2017

Stefania Vannuccini
Stefania.Vannuccini@fao.org
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THE STATE OF WORLD FISHERIES AND AQUACULTURE
CONTRIBUTING TO FOOD SECURITY AND NUTRITION FOR ALL

Outlook

http://www.fao.org/Giews/English/fo/index.htm

http://www.agri-outlook.org/
Status of stocks: 2013

- **31.4%** of overfished stocks
- **68.6%** of stocks fished within biologically sustainable levels:
  - 58.1% fully fished
  - 10.5% underfished
- But signs of recovery due to improved management of some of the stocks
Fish production

Fish production (million tonnes live weight)

Excluding aquatic plants. 2015/2016: estimate/forecast
Fish production & utilization

Fish production (million tonnes live weight)

Per capita fish supply (kg)

Excluding aquatic plants. 2015/2016: estimate/forecast
Surpass of aquaculture: 2014 and 2021

OECD-FAO Agricultural Outlook 2016-2025
Surpass

OECD-FAO Agricultural Outlook 2016-2025
Fisheries and aquaculture & livelihoods

World fishers and fish farmers by region

In 2014, an estimated 56.6 million people were engaged in the primary sector of capture fisheries and aquaculture.

Approximately 1 in 10 people rely on fisheries and aquaculture for their livelihoods.

- 84% Asia
- 10% Africa
- 4% Caribbean
Employment and gender

Direct Employment in Fisheries

Women Employment in Fisheries

10.8 million
Number of women employed directly in the fishing activity

19%
Women force employed in fish production (primary sector)

50%
Women force employed in fish production, processing and distribution (primary and secondary sectors)
Fish & Nutrition

Fish provides many valuable nutrients

- protein
- long-chain omega-3 fatty acids
- fat-soluble vitamins
- minerals like iron, calcium, iodine, zinc & selenium

With numerous health benefits

- *(known)* reduced risk of cardiac death, aids neurodevelopment in unborn infants
- *(probable)* reduced risk of stroke, *(possible)* reduced risk of depression

Which are important in developing countries

- fish provides nutrients where they are most needed
- cheap small pelagics growing component of developing country diets
Fish food supply

Average per capita fish supply (in live weight equivalent)
Fish contribution to human nutrition

[Bar chart showing the share of fish in total animal protein (%) and per capita fish consumption (kg) for different regions: Asia, Africa, Europe, Oceania, Northern America, Latin America & the Caribbean, LIFDCs, and World.]

- Asia: High share of fish in total animal protein and high per capita fish consumption.
- Africa: Moderate share of fish in total animal protein and moderate per capita fish consumption.
- Europe: Low share of fish in total animal protein and low per capita fish consumption.
- Oceania: Very high share of fish in total animal protein and high per capita fish consumption.
- Northern America: Low share of fish in total animal protein and low per capita fish consumption.
- Latin America & the Caribbean: Moderate share of fish in total animal protein and moderate per capita fish consumption.
- LIFDCs: Low share of fish in total animal protein and low per capita fish consumption.
- World: Moderate share of fish in total animal protein and moderate per capita fish consumption.

Share of fish in total animal protein (%) and Per capita fish consumption (kg)
Per capita fish consumption

Kg (live weight)

OECD-FAO Agricultural Outlook 2016-2025
Share of production being traded

million tonnes live weight

Excluding aquatic plants. 2015/2016: estimate/forecast
Exports of fish and fishery products (value)

Excluding aquatic plants. 2015/2016: estimate
FAO Fish Price Index (2002-2004= 100)

- FAO Total fish price index
- Aquaculture total
- Capture total
Imports of fish and fishery products

**VALUE**

USD billion

**QUANTITY**

million tonnes live weight

Excluding aquatic plants. 2015/2016: estimate
Exports of fish and fishery products

**VALUE**

USD billion

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**QUANTITY**

million tonnes live weight

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Excluding aquatic plants. 2015/2016: estimate
Net exports of developing countries

US$ billions

Milk  Meat  Rice  Tobacco  Tea  Cocoa  Banana  Sugar  Natural Rubber  Coffee  Fish

1993  2003  2013
World fishery trade: growth at lower rate

Million tonnes (live weight)

Trend

Imports excluding intra EU

OECD-FAO Agricultural Outlook 2016-2025
Annual growth in trade (volume)

OECD-FAO Agricultural Outlook 2016-2025
Key producers and traders

Developing countries:
74% capture
95% aquaculture

Role of developing countries in fish trade

![World map showing key producers and traders in fish trade](image)

Which countries are the major marine capture fisheries producers?
1. China
2. Indonesia
3. United States of America
4. Russian Federation
5. Japan

Which countries are the major aquaculture producers?
1. China
2. India
3. Viet Nam
4. Bangladesh
5. Egypt

Major importers of fish and fishery products:
1. United States of America
2. Japan
3. China
4. Spain
5. France

Major exporters of fish and fishery products:
1. China
2. Norway
3. Viet Nam
4. Thailand
5. United States of America
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
- Assess to capital and financial services (loans, insurance, etc.)
- Equity (poverty, forced labor, child labor, etc.)
- Public image of fisheries and aquaculture
Issues, constraints, challenges

• The relationship between fisheries management policy, allocation of rights and the economic sustainability of the sector
• Distribution of margins and benefits throughout the fisheries value-chain
• The more stringent rules for quality and safety of food products, including for imported products, in several countries
• Lack of capacity in post-harvest sector
• The significant increase of ecolabels and their possible effect on market access, in particular for developing countries
• The requirement for new traceability systems
• The economic crises and the risk of increased import barriers and tariffs
• Tariffs and non-tariffs
• Importance to have trade in fisheries more inclusive and sustainable
• Distortions caused by harmful forms of fish subsidies, including those that can contribute to overfishing and depletion of fish stocks undermining sustainable development
Sustainability

The sustainability of fisheries and aquaculture production is crucial to the livelihoods, food security and nutrition of billions of people

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*
International instruments for fisheries conservation, management and governance

UNCLOS (1982)

UN Fish Stocks Agreement (1995)


International Plans of Action Sharks, Seabirds, Capacity, IUU (1999-2001)

International Guidelines FSP, SSF, BC/DC, DSF (2009-2014)


FAO Port State Measures Agreement (2009)

Strategies on information STF, STA (2003-2008)
Code of Conduct of Responsible Fisheries (CCRF)
States and all those engaged in fisheries management should, through an appropriate policy, legal and institutional framework, adopt measures for the long-term conservation and sustainable use of fisheries resources. Conservation and management measures, whether at local, national, subregional or regional levels, should be based on the best scientific evidence available and be designed to ensure the long-term sustainability of fishery resources at levels which promote the objective of their optimum utilization and maintain their availability for present and future generations.
Discards

- Discards refer to the portion of the catch which is returned to the sea for whatever reason
- Based on a fishery-by-fishery approach, the proportion of catch discarded is estimated at 8%
- 7.3 million tonnes
- Trawl fisheries for shrimp and demersal finfish account for over 50% of total estimated discards
- New assessment by FAO
Reduction of discards

- Use of more selective fishing gears, technologies and methods
- Introduction of bycatch and discards regulations
- Improved enforcement of regulatory measures prohibiting discarding in some countries, establish marine protected areas and no trawl zones, set by catch quotas
- Greater utilization of bycatch for food or non-food purposes due to improved processing technologies and expanding market opportunities
Responsible fishing operations (in relation to discards and bycatch) can be based on the following principles:

• making efforts to avoid unwanted catches - in particular, catches of endangered species and unwanted catches and discards that may reduce biodiversity or disrupt ecosystem function or integrity;

• where catches of unwanted species, sizes or sexes are unavoidable, making efforts to find proper uses for such animals, and/or if there is a reasonable probability of survival, making efforts to return the unwanted catch to the sea;

• taking measures to increase the survival of unwanted catch destined to be returned to the sea;

• keeping records of discards, if required for management purposes.
By-products

• Increasing quantities of offals and other by-products
• They may constitute up to 70% of fish and shellfish after industrial processing
• Fish by-products are not usually put on the market owing to low consumer acceptance or because sanitary regulations restrict their use
• May represent a significant source of nutrition
• Increasingly used for food and non-food purposes
Uses of by products

• many uses, for human consumption or not:
  section fish utilization and processing SOFIA 2016

• fish sausages, cakes, gelatin, sauces, fish snacks, dried heads, etc.

• production of feed, biodiesel/biogas, dietetic products (chitosan),
  pharmaceuticals (including oils), natural pigments (after extraction),
  cosmetics (collagen), and in other industrial processes
Fishmeal: raw material

Million tonnes (product weight)

- From whole fish
- From residues

El niño
THANK YOU

Stefania.Vannuccini@fao.org