

**Eradicate hunger, food  
insecurity and malnutrition**



**Eliminate rural poverty through  
socio-economic development**



**Sustainable management  
and utilization of natural  
resources**



**Europe, the Ocean and Feeding the World  
20 March 2018  
European Parliament, Brussels, Belgium**



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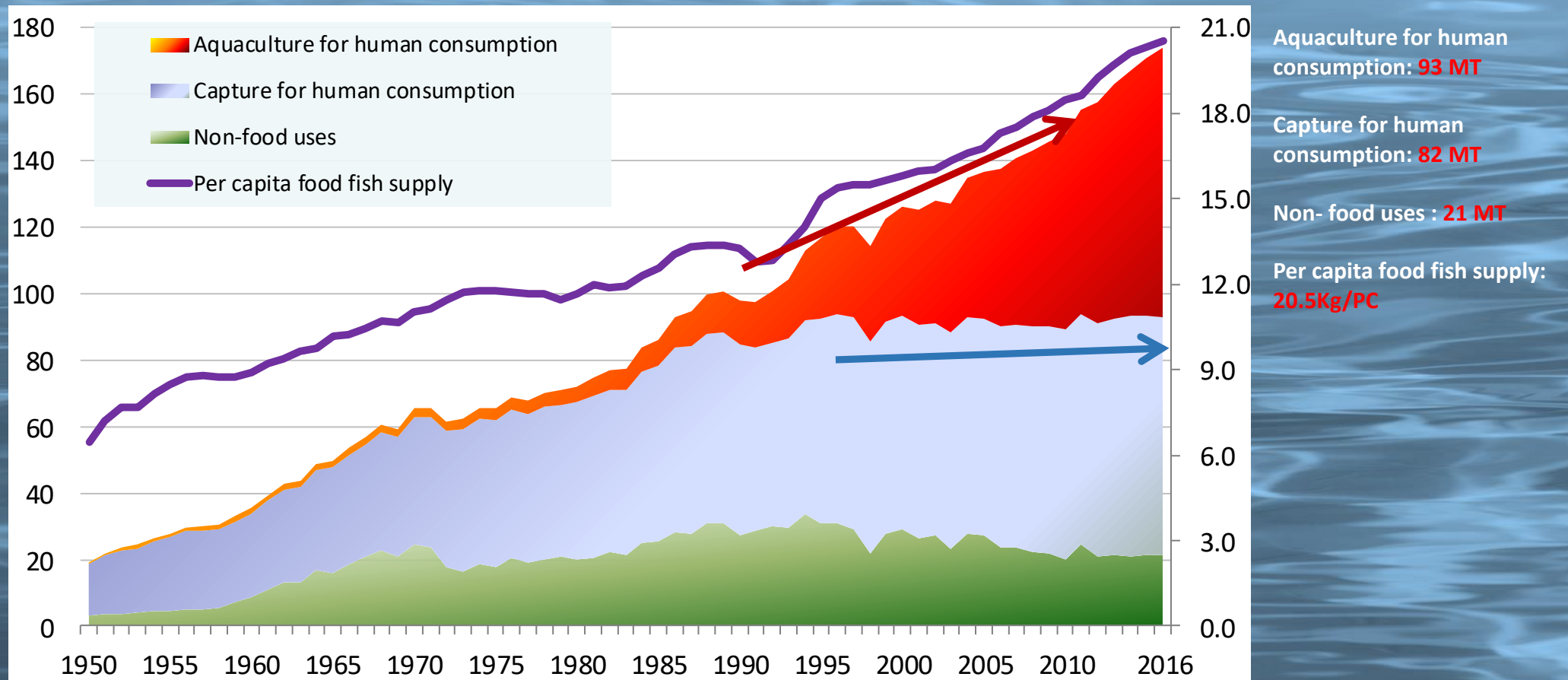
# What are we achieving now?

## Fish production and utilization

174.1 MT

Utilisation du poisson (millions des tonnes –équivalent en poids vif)

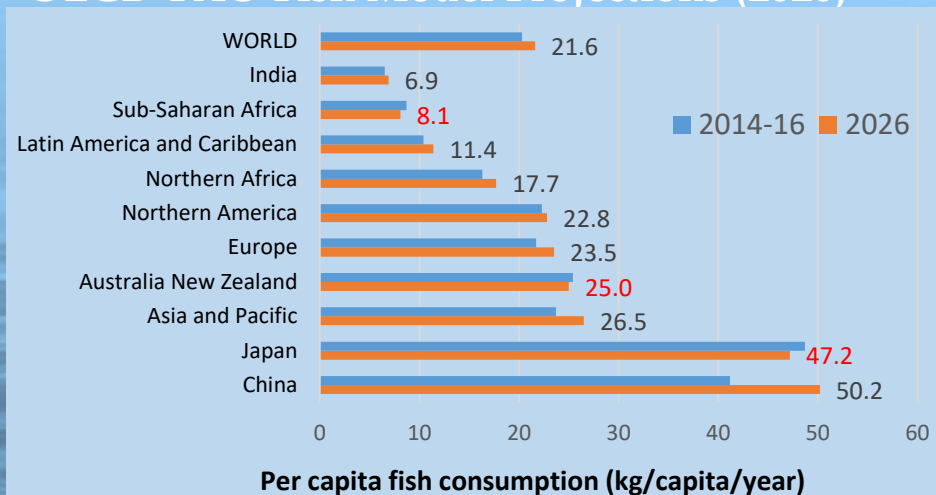
Consommation de poisson par personne (kg)



Hors plantes aquatiques. 2015/2016: estimations/perspectives



## OECD-FAO Fish Model Projections (2026)

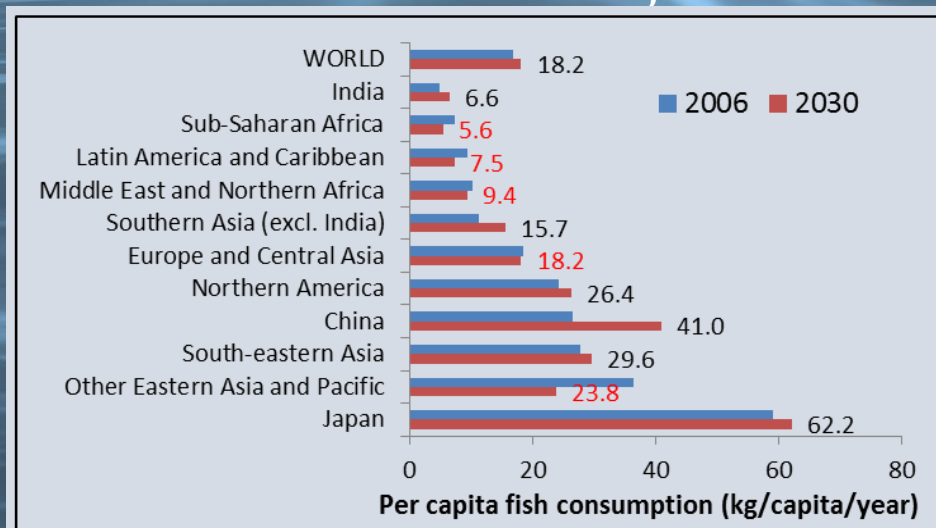


Source: OECD-FAO Agricultural Outlook 2017-2026

Countries/regions ranked by per capita fish consumption in 2014-16 average.

Countries/regions with declined per capita fish consumption highlighted in red.

## WB-FAO-IFPRI Fish to 2030 Projections



Source: World Bank Report on Fish to 2030 (Table 3.7).

Countries/regions ranked by per capita fish consumption in 2006.

Countries/regions with declined per capita fish consumption highlighted in red.

## Future fish supply and demand projections

### FAO/FI Fish Supply-Demand Gap Projections

Country/region	Fish Demand (2030)		Total fish prod. (2012, mil. tonne)	S-D gap 2030 (col. 4 minus col. 3)
	kg/cap.	Total (mil. tonne)		
WORLD	29.1	261.2	156.5	-104.7
S.S. Africa	10.8	15.1	6.9	-8.2
L.A. & C.	12.2	18.3	14.8	-3.4
N. Africa	12.9	3.7	2.8	-0.8
Europe	27.3	23.4	16.0	-7.4
N. America	29.8	12.9	6.7	-6.1
Oceania	31.9	1.8	1.4	-0.3
Asia	37.0	186.3	107.8	-78.5

Source: Estimation of FI/FAO (preliminary results)

Main assumptions: 1) Per capita fish demand affected by income growth.

2) Fish price unchanged. 3) Preference over fish unchanged



# Filling Fish Supply-Demand

## **Maintaining/increasing capture fisheries production**

- Rebuilding overexploited stocks
- Recovery of the “Sunken Billions” through reducing overcapacity

## **More direct human consumption**

- Shifting industrialized use of fish (fish meal and fish oil) to direct human consumption

## **Reducing waste**

- Utilization of bycatch and discards
- Utilization of processing waste
- Reducing post-harvest spoilage (cold storage, more efficient value chain, etc.)

## **Sustaining aquaculture growth**

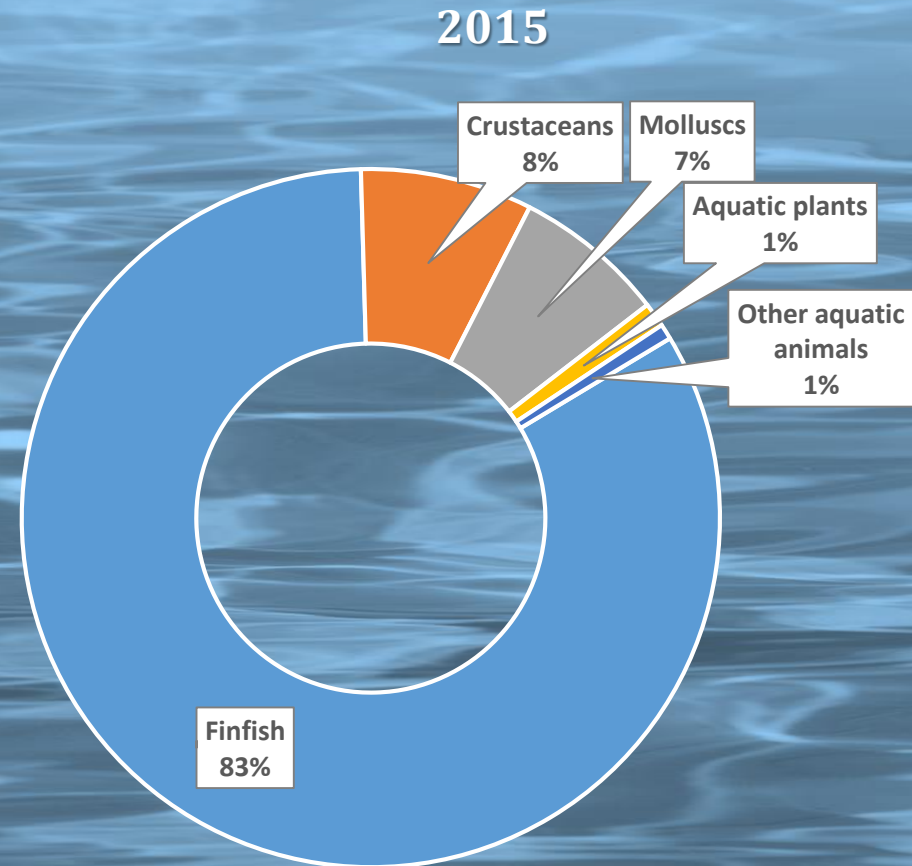
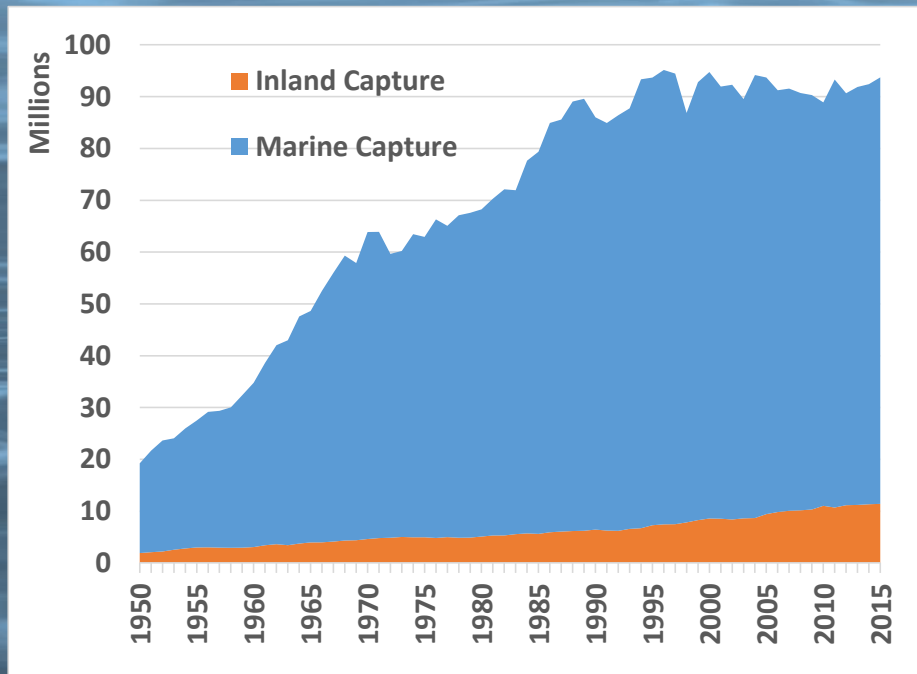
- Sustainable intensification in Asia.
- Expansion in Africa and Latin America
- Increasing acceptance in western countries
- More efficient feed and feed management
- Genetic improvement of seed stocks
- Low-trophic species (non-fed finfishes, mollusks, etc.)
- Innovation in farming systems and technologies



# What are we achieving now?

## Capture fisheries production

million tonnes in live weight

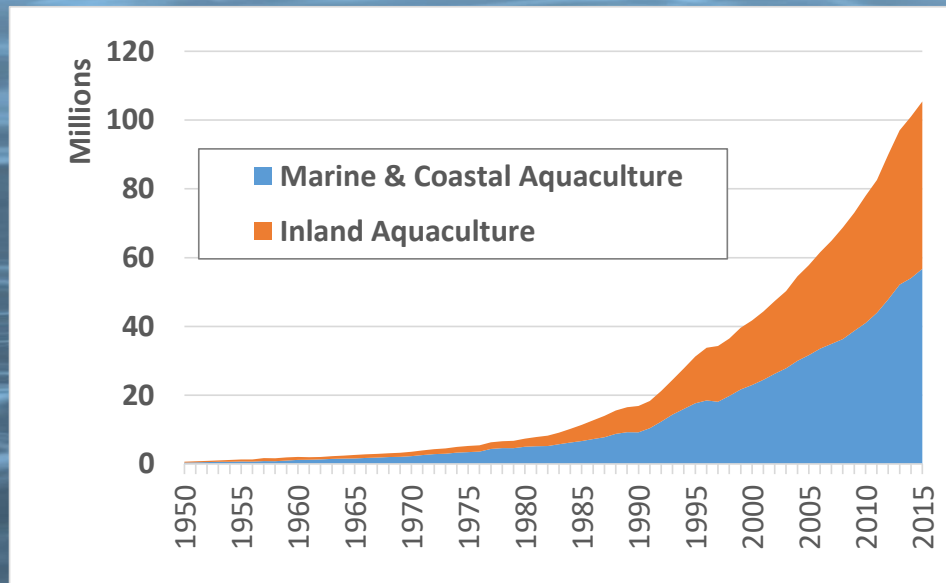


*Including aquatic plants*

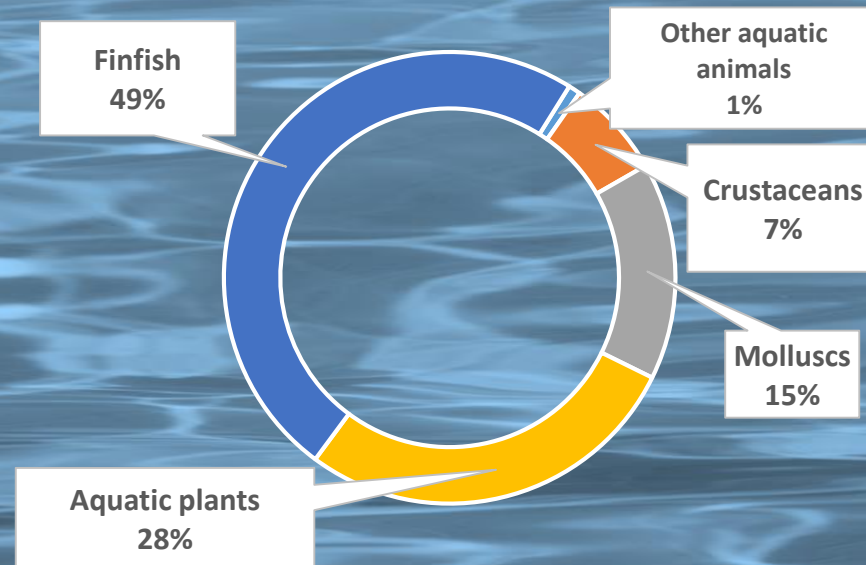
# What are we achieving now?

## Aquaculture production

million tonnes live weight



2015

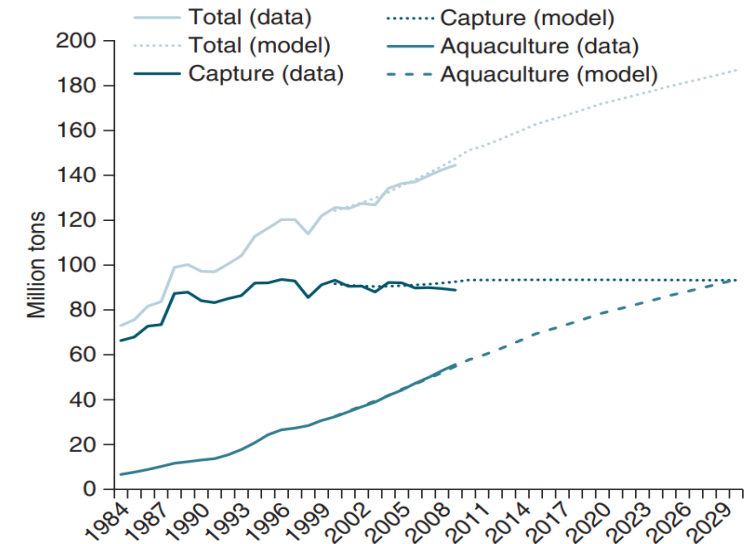


*Including aquatic plants*

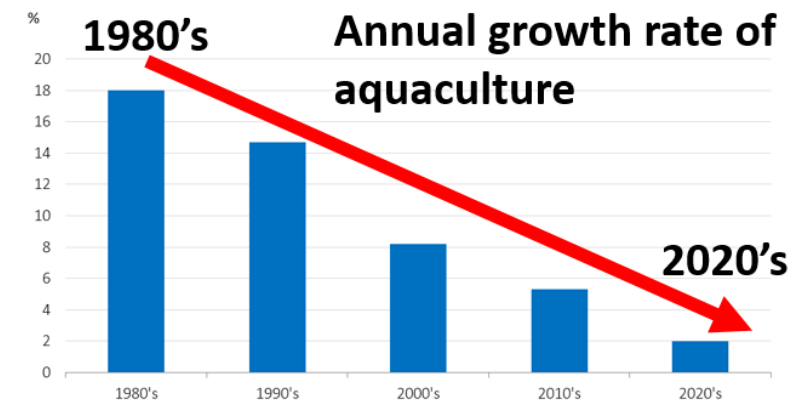
# Available for consumption

- Increased proportion for human consumption
- Reduced waste
- Rebuilding stocks
- Aquaculture expected to exceed 100 million tonnes by 2025
- Aquaculture annual growth expected to slow from 5.3% over previous decade to 2.3% pa for coming decade (1970-2010 8.3% pa)
- Human consumption 2026 180 MT ; 100 MT Aquaculture - 80 MT Capture Fisheries

**FIGURE 3.1: Global Fish Production: Data and Projections, 1984–2030**



Sources: FishStat and IMPACT model projections.



# Issues, constraints and 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.)
- Economic development and Equity (poverty, forced labor, child labor, etc.)
- Public image of fisheries and aquaculture



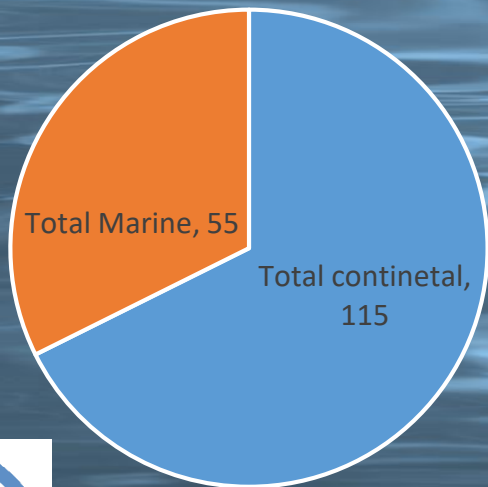
# What is the potential?



## Global Primary Production

**Total Continental 115 billion tons a year**

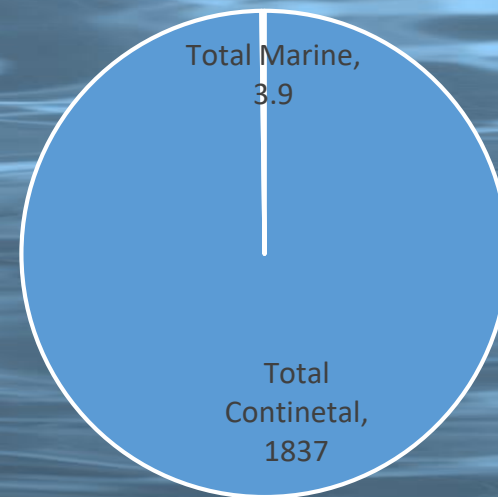
**Total Marine 55 billion tons a year**



## World Biomass/Standing Stock

**Total Continental 1837 billion tons**

**Total Marine 3.9 billion tons**

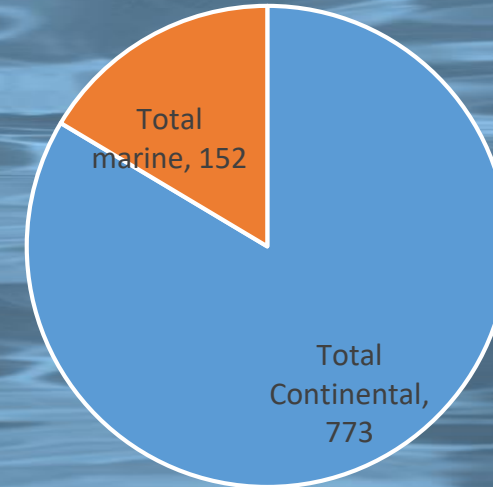


## Primary Production

**Mean NPP (g/m<sup>2</sup>/year)**

**Total Continental 773**

**Total Marine 152**



# We are only using a fraction of the Ocean Space and PP today



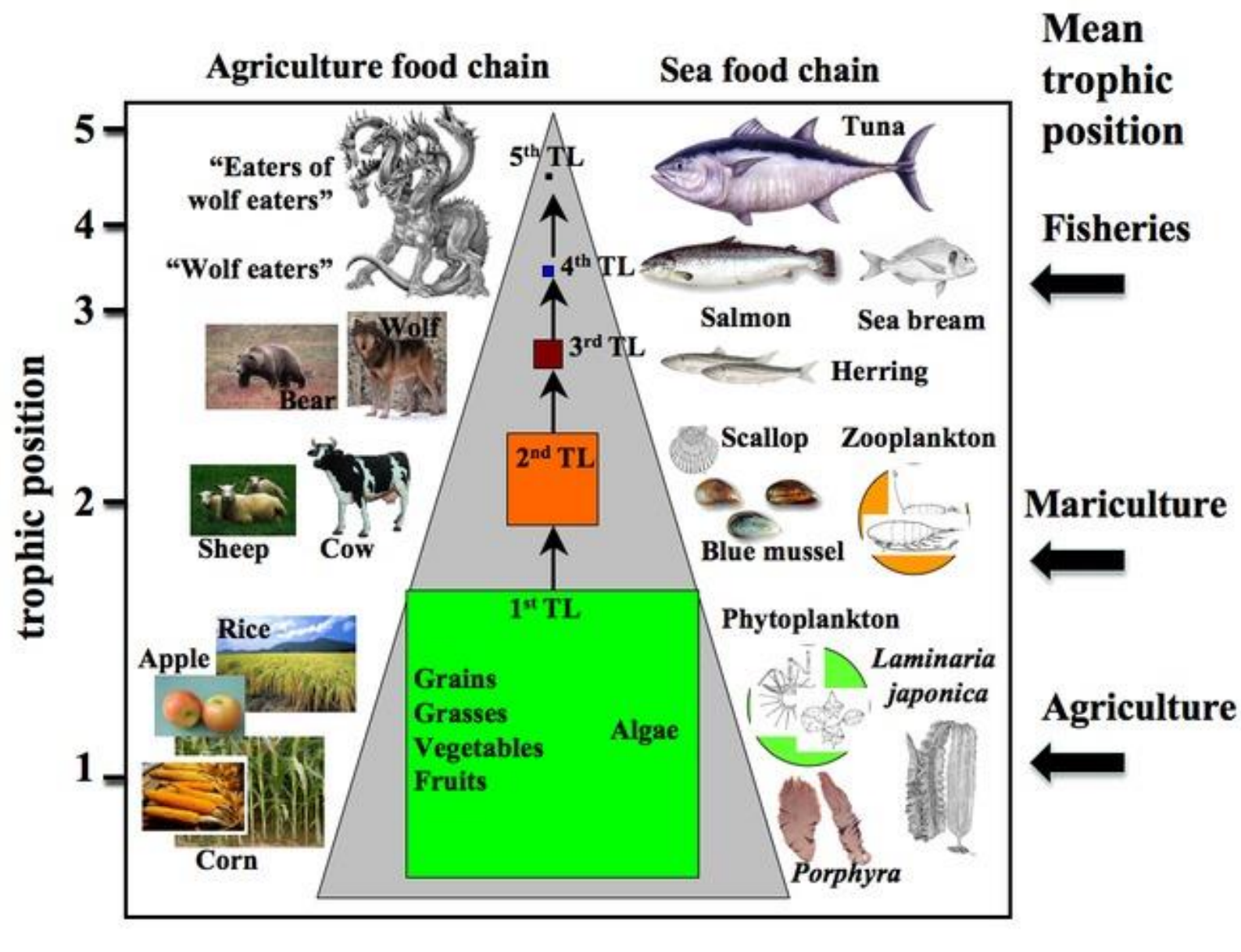
1. What can we achieve with in the conventional?
2. Can we use more of the PP?
3. Can we increase the PP?

Are there limits?

**Yes ( Technical, Environmental)**

What are the limits? **We don't know**





# Integrated Multi-Trophic Aquaculture(IMTA): Big potential for Blue Growth

- Ecosystem approach
- Diversified products
- Better market satisfaction
- Better economic and ecological benefit



2013 Her Majesty the Queen in Right of Canada



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THANK YOU

