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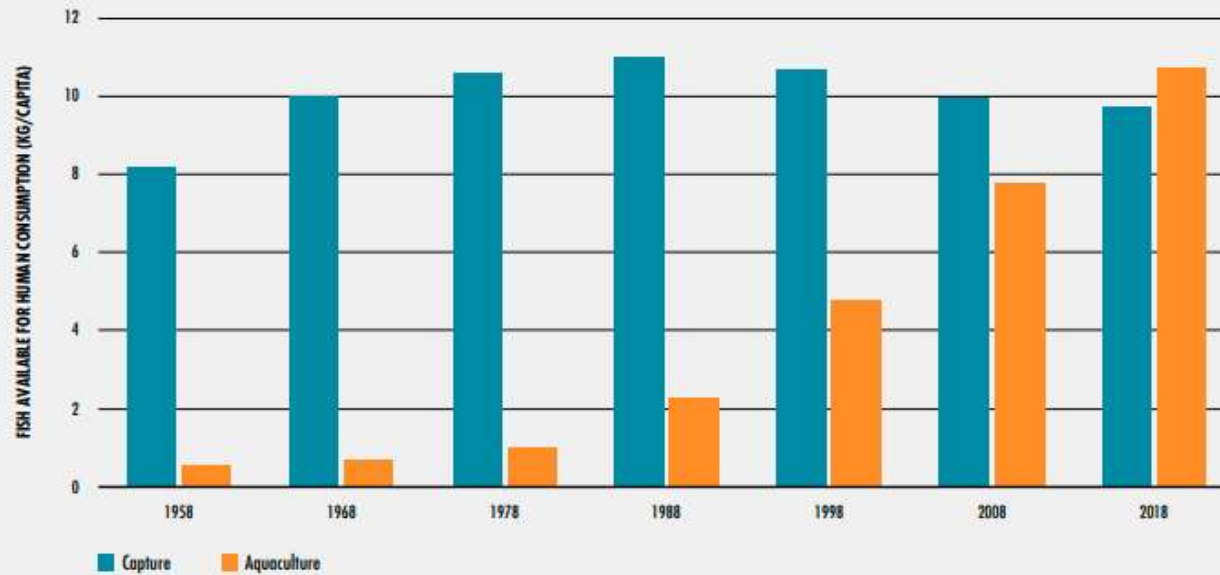


Aquaculture The way forward!

Dr. Antonio Garza de Yta

Aquaculture Today

FIGURE 27
RELATIVE CONTRIBUTION OF AQUACULTURE AND CAPTURE FISHERIES TO FISH AVAILABLE
FOR HUMAN CONSUMPTION



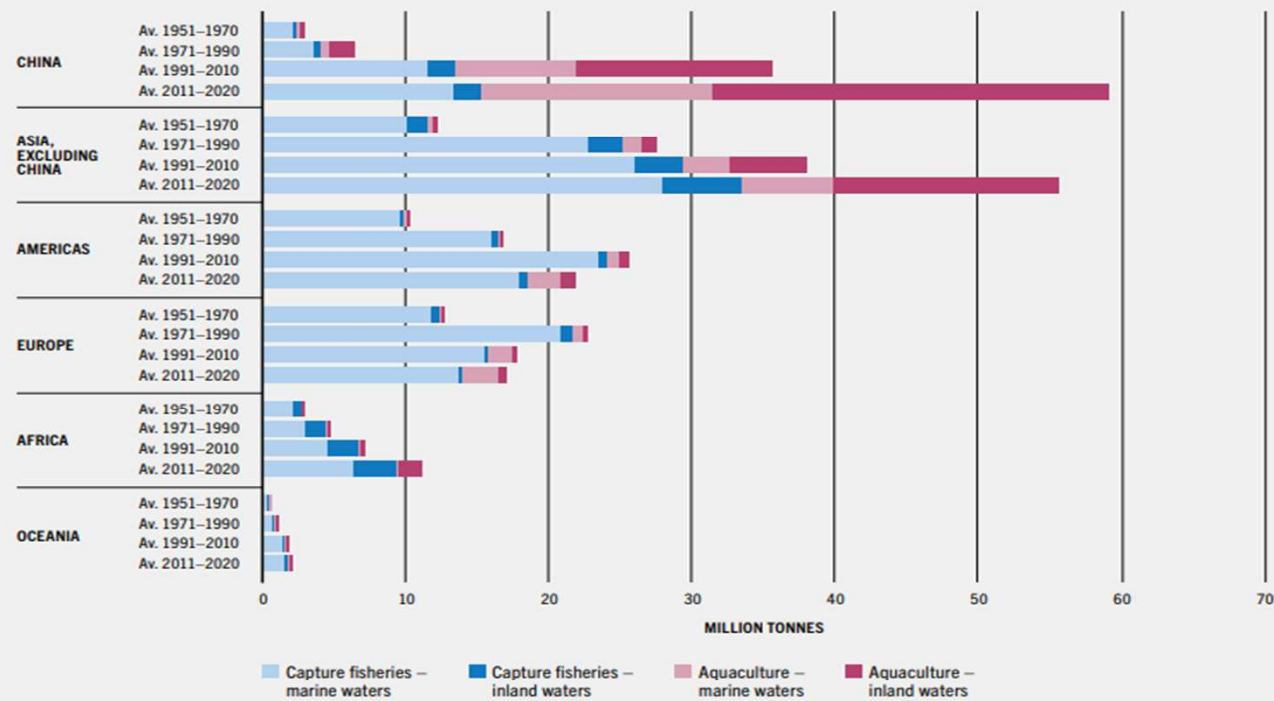
SOURCE: FAO.

In 2014
aquaculture
surpassed
fishing as
the main
source of
fish and
shellfish for
human
consumption

2020= 56%

REGIONAL CONTRIBUTION TO WORLD FISHERIES AND AQUACULTURE PRODUCTION

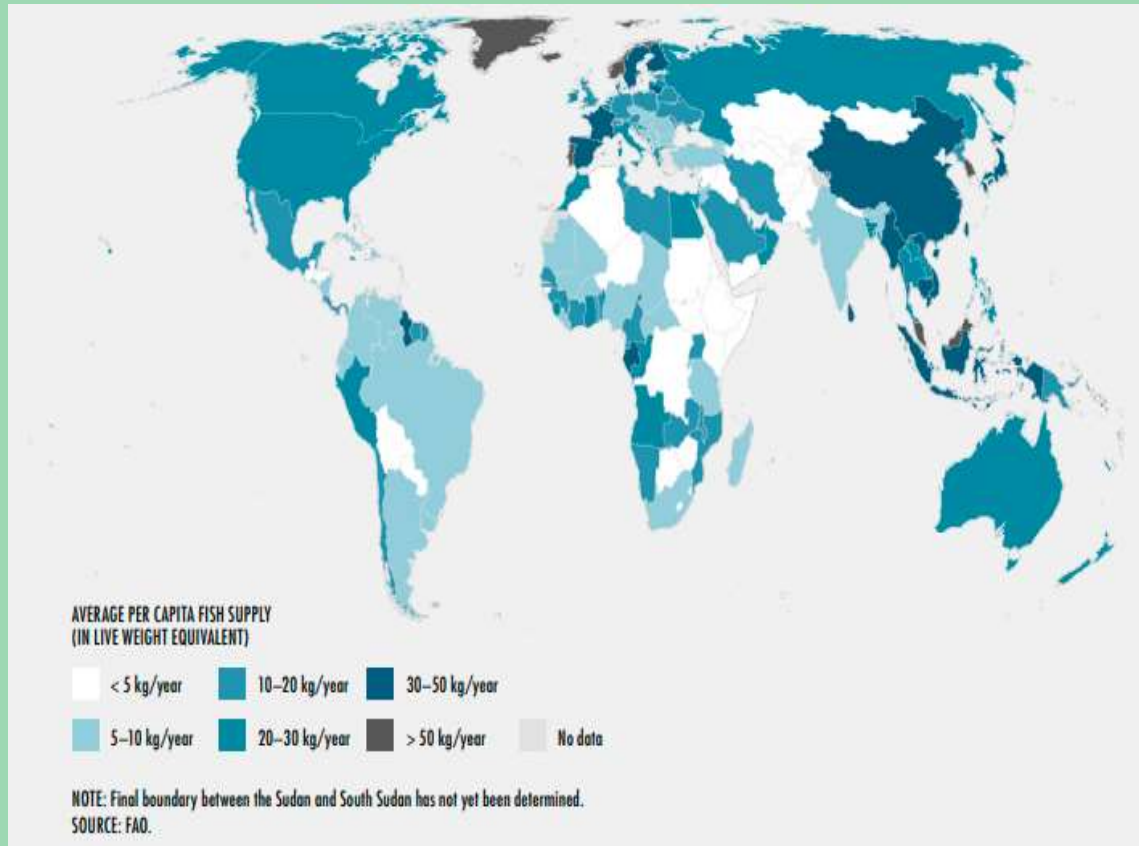
FIGURE 5 REGIONAL CONTRIBUTION TO WORLD CAPTURE FISHERIES AND AQUACULTURE PRODUCTION



NOTES: Excluding aquatic mammals, crocodiles, alligators and caimans and algae. Data expressed in live weight equivalent.
SOURCE: FAO.

Source:
FAO,
SOFIA,
2022

APPARENT FISH CONSUMPTION PER CAPITA, AVERAGE



Fish consumption per capita kg/year

- 20.2 kg per capita in the world
- 6.31 kg per capita in India

The consumption recommended by WHO should be reached:

16 kg/cápita/year

Source: FAO, SOFIA, 2022

PRESSING NEEDS

1. Fish protein and fish oil need to be reduced or eliminated from aquatic feeds to allow aquaculture to continue growing.
2. Capacity building programs should aim to the professionalization of the industry in all the value chain and at all levels, including government personnel that need to be able to take decisions based on the most recent scientific information available.



PRESSING NEEDS

3. Solid genetic programs need to continue to address adaptability of species, disease resistance and desirable production traits such as growth rate and food conversion ratio.
4. We must build a solid and resilient industry. Aquaculture does not only need to adapt and take preventive measures for climate change, but also for financial and multi-variable crises such as the one generated by Covid-19.



PRESSING NEEDS

5. Thorough strategic planning is essential, and it must encompass various subsets of the industry, such as marketing, service providers, capacity building, investment & financing, seafood consumption promotion, digitalization, seafood trade negotiations, development of trade cooperatives and associations, and very importantly, regional cooperation.



PRESSING NEEDS

6. Aquaculture needs to be an instrument to improve the quality of life of the people engaged in it. It should be a good tool to promote the inclusion of women and the young in rural development, thus reducing rural migration.



VISION FOR THE FUTURE

A. Circular economy will be a concept embraced by the industry where all by-products will be utilized, maximizing resource usage, and decreasing environmental footprints to a minimum.



B. In the long run livestock produced worldwide will be fed protein produced by aquaculture of aquatic plants.



Fuente: FAO, SOFIA, 2020

VISION FOR THE FUTURE



Fuente: FAO, SOFIA, 2020

C. Innovation will be a major disruptor of the status quo. While Recirculation Aquaculture Systems and Offshore cages will become more important, biotechnology such as tissue culture and cellular seafood production will become major players in the industry

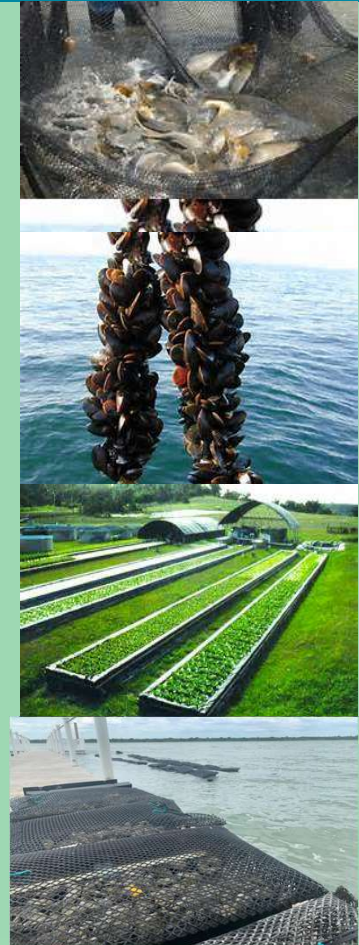
D. Aquaculture becoming the major source of protein and the culmination of the Blue Revolution.

SHORT TERM GOALS

Aquaculture needs to concentrate its efforts in reducing its environmental footprint.

Scientific and policy cooperation within and between regions needs to be more active and effective.

Aquaculture needs to become a priority at a national, regional and global level.



My advice to Kerala

Build the Foundation

Aquaculture Center of Excellence

Kerala as a center of reference for
Aquaculture Development

Marine Genetic
Improvement

Aquatic Health
& W.Q.

Nutrition &
Feed
Development

New Species &
Aquaculture
Innovation

Research Park
& Incubator

Aquaculture
Academy

IT & Innovation

Use Smart Intensification to Make a More Efficient Use of Resources

- Unfed aquaculture remains a model of sustainability
- Intensive systems make better use of resources and have smaller environmental footprints
- They use the land better
- Minimize habitat conversion
- The use of resources per unit is lower the more intensive the system is:

↓Land ↓ Water ↓Aquafeed ↑Profits

- Progressive intensification can increase production 10x
- RAS and Biofloc systems → their future is directly linked to the development of clean energy



- Analyze Markets
- Add value if needed
- Product campaign
- Strategic Alliances



- Include Fisheries & Aquaculture in the Education Programs
- Work on Public Perception
- Promotion of seafood consumption
- Fairs & events
 - Locally (Fisheries week)
 - International (WAS)



Let's make it happen!