Bringing the **Oceans & Fish** into the **Global Food Security** Conversation

Patricia Majluf Ph.D.
Centro para la Sostenibilidad Ambiental
Universidad Peruana Cayetano Heredia
Bringing the Oceans & Fish (back) into the Global Food Security Conversation

Patricia Majluf Ph.D.
Centro para la Sostenibilidad Ambiental
Universidad Peruana Cayetano Heredia
Food Security

When all people at all times have both physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life.
Fish are largely left out of global Food Security discussions
Fish as Wealth

Aggregate economic output from fisheries & aquaculture
\textbf{\textasciitilde US$ 500 billion per year.} Contributes to poverty & food security through:
Fish as Wealth

Aggregate economic output from fisheries & aquaculture ~US$ 500 billion per year. Contributes to poverty & food security through:

- Nutritional benefits from the consumption of fish
Fish as Wealth

Aggregate economic output from fisheries & aquaculture ~US$ 500 billion per year. Contributes to poverty & food security through:

- Nutritional benefits from the consumption of fish
- Income to those in the sector & spillover effects
Fish as Wealth

Aggregate economic output from fisheries & aquaculture ~US$ 500 billion per year. Contributes to poverty & food security through:

- Nutritional benefits from the consumption of fish
- Income to those in the sector & spillover effects
- Generation of revenue from exports, taxation, license fees and access to resources by foreign fleets or foreign investment in aquaculture
Harvest, sale and processing of fish contribute indirectly to food security by increasing purchasing power at individual or household level and also regionally and nationally.
Harvest, sale and processing of fish contribute indirectly to food security by increasing purchasing power at individual or household level and also regionally and nationally.
Global fish trade =
~US$ 100 Billion / year

Many poor countries prefer to export their fish (high & low value species) for quick revenue, depriving their people of important sources of nutritious food.
Global per capita supply of fish ~17 Kg
Global per capita supply of fish ~17 Kg

Nearly half comes from aquaculture
Global per capita supply of fish ~17 Kg

Nearly half comes from aquaculture

Demand expected to increase substantially
Availability of fish is unevenly distributed

Supply constraints faced by undernourished populations in developing countries, with high dependence on fish

(Sub-Saharan Africa, least developed countries of S & SE Asia, and small island states in the Pacific Ocean)
Fish & Health: Different perspectives
Fish & Health: Different perspectives

Developed Countries: focus on fish safety & health benefits of PUFAs from fish + fish oil
(Lower blood pressure & risk of heart disease)

WORLDFISH CENTER, 2011
Fish & Health: Different perspectives

Developed Countries:
focus on fish safety & health benefits of PUFAs from fish + fish oil
(Lower blood pressure & risk of heart disease)

Developing Countries:
fish critical to tackling undernutrition, maternal + child health

WORLDFISH CENTER, 2011
Fish & Food Security:
Fish & Food Security:

Usually linked through contributions to PROTEIN SUPPLY
Fish & Food Security:

Usually linked through contributions to PROTEIN SUPPLY

Much more important as source of MICRONUTRIENTS & LIPIDS
More than 2 Billion people in the world are undernourished through deficiencies in essential vitamins & minerals (Vit.A, Fe, Zn)
Essential at key stages of human life: pregnancy, lactation, growth
Essential at key stages of human life: pregnancy, lactation, growth

Deficiencies can cause severe and irreversible impacts on health & physical + mental development

= HIDDEN HUNGER
Fish can contribute to reducing micronutrient deficiencies and reducing the health burden
BIG CONCERN...

Farmed Fish, which are currently increasing in availability globally and are most affordable to the poor, ARE OF LOWER NUTRITIONAL VALUE
SMALL FISH, important in the diets of the poor, have high nutrient content PUFAs (Omega 3 & 6), Vitamin A, Iron, Zinc & Calcium

SMALL OILY FISH

STRATEGIC RESOURCES to reduce global malnourishment

WORLDFISH CENTER, 2011
A global concern:

MARINE FISH LANDINGS (MILLION MT)
Uses for fishmeal and fish-oil

Fishmeal

Fish-oil

Tvesteras 2011 - IFFO
A growth problem:

- Human population growth
- Food demand
- Aquaculture & Industrial Animal production systems
- Global demand for fishmeal & fish-oil
- Ecosystemic resilience & productivity
- Human health
- Food security
- Ecological & Social Degradation
- Overfishing
- Pollution
- Industrial fisheries

---

CSA
Centro para la Sostenibilidad Ambiental
UPCH
IFFO argues these are fish people won’t eat...

“Fishmeal and fish oil are produced from harvesting stocks of fish for which there is little or no demand for human consumption and also from the use of trimmings left over from processing fish for food. The whole fish are mainly small bony oily and largely inedible such as anchovy, horse mackerel, menhaden, capelin and sandeel.”  

www.iffo.net - Oct 2009

<table>
<thead>
<tr>
<th>Country / Region of production</th>
<th>Fishmeal Production 2002/2006 (t)</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peru</td>
<td>1,714.000</td>
<td>Anchoveta</td>
</tr>
<tr>
<td>Chile</td>
<td>798.000</td>
<td>Jack Mackerel, Anchoveta, Sardine, other</td>
</tr>
<tr>
<td>Iceland</td>
<td>224.000</td>
<td>Capelin, Blue-whiting, Herring (incl. trimmings)</td>
</tr>
<tr>
<td>Norway</td>
<td>198.000</td>
<td>Blue-whiting, Capelin, Sandeel, trimmings, other</td>
</tr>
<tr>
<td>Denmark</td>
<td>246.000</td>
<td>Sprat, Blue whiting, Herring, Sandeel, other</td>
</tr>
<tr>
<td>Other EU*</td>
<td>210.000</td>
<td>Sprat, Blue whiting, Herring, Sandeel, trimmings, other</td>
</tr>
<tr>
<td>China</td>
<td>348.000</td>
<td>Various</td>
</tr>
<tr>
<td>Thailand</td>
<td>402.000</td>
<td>Various</td>
</tr>
<tr>
<td>U.S.A.</td>
<td>300.000</td>
<td>Menhaden, Alaska Pollock</td>
</tr>
<tr>
<td>South Africa</td>
<td>103.000</td>
<td>Anchovies, Pilchard</td>
</tr>
<tr>
<td>Others</td>
<td>1,176.000</td>
<td>Mainly Anchovies</td>
</tr>
</tbody>
</table>

TOTAL 5,719.000
WE CAN EAT THESE FISH!
WE CAN EAT THESE FISH!

SHOULD EAT THESE FISH!
Small, oily fish are strategic for global food security programs
Small, oily fish are strategic for global food security programs

We can make BETTER USE of these fish
FAO promotes aquaculture as the way to secure fish for future generations

Although they acknowledge the large fraction of global catches being reduced into fishmeal, they never seem too concerned.

FOOD SECURITY = AGRICULTURE
Farmed fish cannot replace forage fish in food security programs

If we want to improve global nutrition effectively...
We URGENTLY need to find appropriate replacements for fishmeal and fish oil
We URGENTLY need to find appropriate replacements for fishmeal and fish oil...
Thanks!

pmajluf@csa-upch.org