Addressing food insecurity through distribution of value added fish products

Redeat Demissie, FAO

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FAO’s Vision

A sustainable and food secure world for all
Fish is Food
Omega-3 (DHA/EPA)

IQ +6

CHD -36%
Fish, much more than proteins

- Vitamin A
- Protein
- DHA
- EPA
- Vitamin D
- Vitamin B12
- Zinc
- Iron
- Calcium
- Selenium
- Iodine
## Nutritional Composition Bivalves

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Cod</th>
<th>Tilapia</th>
<th>Mussels</th>
<th>Oysters</th>
<th>Scallops</th>
</tr>
</thead>
<tbody>
<tr>
<td>DHA + EPA (omega 3)</td>
<td>mg/100g</td>
<td>184</td>
<td>91</td>
<td>441</td>
<td>688</td>
</tr>
<tr>
<td>Calcium</td>
<td>mg/100g</td>
<td>16</td>
<td>10</td>
<td>26</td>
<td>8</td>
</tr>
<tr>
<td>Iron</td>
<td>mg/100g</td>
<td>0.38</td>
<td>0.56</td>
<td>3.95</td>
<td>5.11</td>
</tr>
<tr>
<td>Zinc</td>
<td>mg/100g</td>
<td>0.45</td>
<td>0.33</td>
<td>1.60</td>
<td>16.6</td>
</tr>
<tr>
<td>Selenium</td>
<td>µg/100g</td>
<td>33.1</td>
<td>41.8</td>
<td>44.8</td>
<td>77.0</td>
</tr>
<tr>
<td>Vitamin A</td>
<td>µg/100g</td>
<td>12</td>
<td>0</td>
<td>48</td>
<td>81</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>µg/100g</td>
<td>0.91</td>
<td>1.58</td>
<td>12.0</td>
<td>16.0</td>
</tr>
</tbody>
</table>

USDA National Nutrient Database (USDA, 2020)
Selected micronutrients per 100 grams edible portion of Darkina (*Esomus danricus*)

<table>
<thead>
<tr>
<th>Nutrient</th>
<th>Carp (mg)</th>
<th>Tilapia (mg)</th>
<th>Darkina (µg RAE)</th>
<th>RDI*</th>
<th>Roos et al., 2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium, Ca</td>
<td>41</td>
<td>10</td>
<td>800</td>
<td>1000</td>
<td></td>
</tr>
<tr>
<td>Iron, Fe</td>
<td>1.24</td>
<td>0.56</td>
<td>12.0</td>
<td>8.9</td>
<td></td>
</tr>
<tr>
<td>Zinc, Zn</td>
<td>1.48</td>
<td>0.33</td>
<td>4.0</td>
<td>5.6</td>
<td></td>
</tr>
<tr>
<td>Vitamin A</td>
<td>9</td>
<td>0</td>
<td>890</td>
<td>500</td>
<td></td>
</tr>
</tbody>
</table>

*RDA for a child, moderate bioavailability*
Fish and Micronutrients

30% of Global population micronutrient deficient
   → Hidden hunger

Small indigenous fish species important source of nutrients
   → Eaten whole

30-70% of the fish removed when processed
   → Most nutrient dense parts
Tilapia processing, it is all food!

6 million tonnes (2020)

30-35%

50-55%
Tuna Frames
Fish powders based on whole fish
South Sudan

- Rich in fishery resource
- Largest wetland in Africa - Sudd. Some 58000sq kilometre of wetland
- Over 120 fish species
- Underutilized resource
- An estimated fish production of 140,000 tonnes per year. With a considerable opportunity to add 100,000 tons more fish per annum.
- Important source of livelihood and coping mechanism when crop and livestock fail
- More than 70% of the population needs food aid
The pilot: reaching food insecure household with value added fish products

• Made in South Sudan fish product which has a longer shelf life
• Highly acceptable product with the population
• Replicable in areas where there is fishery resource
• Much cheaper than imported food aid
• Employment opportunity and income generation activity
• Reaching out to 500 households for 2-3 months
• Partnership with National NGOs
THANK YOU !