HOW TILAPIA HAS IMPROVED THE QUALITY OF LIFE OF THOUSANDS BRAZILIAN BACKLAND PEOPLE?

by Renata Barroso
BACKGROUND - REGION
LAST 10 YEARS - BIG EXPANSION

By Brazilian fisheries law up to 1% of the total area could be utilized for aquaculture production which corresponds to 55,000 ha (IN nº 7, april 28, 2005).

- 47% Brazilian aquaculture
- grow 14 to 20% yearly
- Structured chain
- Internal consumption (negative trade balance of fish in more than 168,119 t and US$ 605 million (2015))
  ≈ US$ 330 million (farm price – 10-20% profitability)
  ≈ 450 million seeds (US$17 million)
  ≈ 650,000 ton of feed (US$1,200 billion)
  ≈ 10,000 employment (just production)
  + inclusion of smallscale farmers

Tilapia production in Brazil (tonnes)
Social situation of the rural area in Brazil

- 4,4 million rural establishment

- 500,000 farms = 90% production value

- 24,000 = 50% of total value

What is the destiny of the 3,9 million rural farm?

- 2,9 million belong to extremely poor families (12 million people) that live with ½ Brazilian minimum wage (USD 125) monthly with agriculture activity;

- Specially in the Northeast Brazil

Source: Navarro & Alves, 2016
Human Development Index at the tilapia centers in the Northeastern Brazil

Total population at the 3 tilapia’s production centers of Orós, Castanhão and Low and middle São Francisco = 449,435 citizens
Two main models of tilapia farming:

- Group of farmers own production = small → medium scale
  - Local Farmer
  - Capacity building
  - Loan from public programs

- Entrepreneur = medium / big scale
  - Local or regional Farmer
  - Technical Assistance
  - Own resource
<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time in the activity</td>
<td>6 – 10 years</td>
</tr>
<tr>
<td>Production average volume (m³ cages)</td>
<td></td>
</tr>
<tr>
<td>Small</td>
<td>500 to 1.000 m³</td>
</tr>
<tr>
<td>Medium</td>
<td>5.000 to 8.000 m³</td>
</tr>
<tr>
<td>Big</td>
<td>20.000 to 30.000 m³</td>
</tr>
</tbody>
</table>
## Job Generation

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Number of workers by farm</td>
<td>Small scale 2-5</td>
</tr>
<tr>
<td></td>
<td>Middle 18 - 28</td>
</tr>
<tr>
<td></td>
<td>Big 60</td>
</tr>
<tr>
<td>Labor use Index</td>
<td>Small scale 1 worker/200 m³</td>
</tr>
<tr>
<td></td>
<td>Middle 1 worker/285 m³</td>
</tr>
<tr>
<td></td>
<td>Big 1 worker/500 m³</td>
</tr>
<tr>
<td>average participation of women</td>
<td>15% (8-29%)</td>
</tr>
<tr>
<td>Salary range</td>
<td>From 1 to 2 Brazilian minimum wage*</td>
</tr>
<tr>
<td>Bonus</td>
<td>No</td>
</tr>
<tr>
<td>Worker regularization</td>
<td>Yes - São Francisco production Center</td>
</tr>
<tr>
<td></td>
<td>No - Ceará Production Center</td>
</tr>
</tbody>
</table>

*1 Brazilian minimum wage = US$ 250
Smallscale farm

✓ Fish farming became important activity
✓ alternative to family agriculture
✓ contribute to sustainable development
✓ provide self-esteem to families
✓ income security – food security
✓ prevente rural exodus.

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PRODUCTION MAIN TRAITS

Low technology use

High density (100 - 140 kg/m³), 6 to 7 months production

Farmers organization (formal and informal groups)

Regional market – high acceptance

Main product = whole (degutted) tilapia, 800g to 1kg

20 % profit (farmer level)
Orós Dam

- Over 450 families engaged in the tilapia farming at Orós, benefiting over 19 communities;
- Over 9,000 cages;
- Production of 450 tons of tilapia / month;
- More than R$2,5 million generated monthly.
Fish farmers organization
- 23 farmers association in Jatobá/PE
- Women participation – organized in association
ADDING VALUE

Handcraft from tilapia’s skin

Fillet production

Oil production from tilapia’s gut
Improvement of Life Quality

**Tilapia Production in Glória**
- 2000 = No production
- 2010 = 15,000 ton/year

**Tilapia Production in Orós**
- 2004 = 960 ton/year
- 2010 = 5,400 ton/year
Challenges, Bottleneck

- Regulamentation

- Capacity building
  - Technical inefficiency to technical leapfrogging
  - Must improve efficiency / productivity

- Genetics management
  - Commercial farm level

- Trade
  - Fish processing plant
  - Add value
Opportunities

Diversification / Adding value
✓ Package, presentation, products
✓ Certification

Market
✓ Improve distribution and marketing structure
✓ Assure quality control along the distribution chain

Annual aquaculture production potential in the 37 largest Brazilian reservoirs

<table>
<thead>
<tr>
<th>Region</th>
<th>Production (tons)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Northeast</td>
<td>1,934,100</td>
</tr>
<tr>
<td>Southeast</td>
<td>1,569,660</td>
</tr>
<tr>
<td>North</td>
<td>872,025</td>
</tr>
<tr>
<td>Midwest</td>
<td>429,435</td>
</tr>
<tr>
<td>South</td>
<td>173,750</td>
</tr>
<tr>
<td>Total</td>
<td>4,978,970</td>
</tr>
</tbody>
</table>
Thank you!!

Renata Melon Barroso, PhD
Embrapa Fisheries and Aquaculture
skype: cnpasa.renata
Email: renata.barroso@embrapa.br
Phone: +55 (63) 3229-7807
Mobile: +55 (63) 8464-8416
https://www.embrapa.br/pesca-e-aquicultura