AQUACULTURE DEVELOPMENT IN WEST AFRICA

OPPORTUNITIES AND BOTTLENECKS

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AQUACULTURE DEVELOPMENT IN WEST AFRICA

Outline

- Background
- Opportunities
- Bottlenecks
- Conclusions

ECOWAS (2014)
Population: 335 Million
GDP: USD 1322 billion

NIGERIA
Population: 180 Million
GDP: USD 1049 billion
COUNTRIES STUDIED

Chaîne de Valeur du Poisson au Mali

IMARES: E. Rurangwa, K. Goudswaard, J. Kals, A. Rothuis
LEI: E. Hoefnagel, A. van Duijn
MALI: S. Touré, B. Traoré, S. Keita

Smallholder Fish Production in Nigeria
A technical and economical feasibility study for tilapia cage farming and food security in Nigeria
Wageningen, 8 July 2013
IMARES - LEI

Urban and peri-urban aquaculture production systems in South West Nigeria. Research and Business Opportunities
E. Rurangwa, A.O. Akinwole, B.G. Abiona, O.M. Onagbesan
Report number C048/13 [publishable after 1 year]

Development of Aquaculture in Ghana
Analysis of the fish value chain and potential business cases
E. Rurangwa¹, S.K. Agyakwah², H. Boon³ & B.C. Bolman⁴
IMARES report C021/15

Mission exploratoire
Pêche, Pisciculture et Aquaculture au Bénin
Un quick scan du secteur pour des possibilités d'interventions
E. Rurangwa¹, J. van den Berg², P.A. Lalaye³, A.P. van Duijn⁴, A. Rothuis⁵
IMARES report C072/14
LEI report 14-049

SAFEWAY COLLEGE OF TECHNOLOGY
DEPARTMENT OF AQUACULTURE
MISSION REPORT OF A QUICK ASSESSMENT OF NEEDS
E. Rurangwa
IMARES report C112.14

Business Cases for Aquaculture Investment in Ghana
E. Rurangwa¹, S.K. Agyakwah², H. Boon³ & B.C. Bolman⁴
Publication date: 31 March 2015.
4 phases of AQ development in SSA

- 1950-1970: Popularisation
- 1995-2005: Facilitation
- 2005->: Business approach
  - Led by the private sector

PUBLIC subsidies
PRIVATE investments
world aquaculture average annual % growth rate (FAO, 2012)
Aquaculture Production in West Africa

2013 (FAO, 2014)

Production (tonnes)

Nigeria: 278,706
Ghana: 32,513
Ivory Coast: 3,720

98%
Aquaculture Production in Nigeria

- Private sector led development

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<tr>
<td>Production</td>
<td>0</td>
<td>2000</td>
<td>30000</td>
<td>50000</td>
<td>70000</td>
<td>100000</td>
<td>150000</td>
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<td>300000</td>
<td>350000</td>
<td>400000</td>
<td>450000</td>
<td>500000</td>
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**Nigeria** (FDF, 2015)

- All sp
- Catfish
- Increasing interest in *Tilapia*
Aquaculture Production in Ghana

- **Private sector led development**

*Ghana* (MOFAD, 2015)

- mainly *Tilapia* & cages
 OPPORTUNITIES OR CHALLENGES

- There are challenges ..........................

- but also many opportunities
Growing population and urbanisation
OPPORTUNITIES

- Fish consumption is high

**Fish contribution to animal protein (FAO, 2011)**

<table>
<thead>
<tr>
<th>Country</th>
<th>Per capita fish consumption (kg/yr)</th>
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<tbody>
<tr>
<td>Sierra Leone</td>
<td>34.2</td>
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<tr>
<td>Ghana</td>
<td>27.2</td>
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<tr>
<td>Gambia</td>
<td>26.6</td>
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<tr>
<td>Nigeria</td>
<td>17.1</td>
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<td>Senegal</td>
<td>23.5</td>
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</table>

Source: Earthtrend database, World Resources Institute (WRI), Washington; Faostat, Food and Agriculture Organization of the United Nations (FAO).
OPPORTUNITIES

Dynamic Fish Value Chains and Markets
Suitable environment

- Markets
- Labour
- Climate
- Water
**Small Scale AQ Production Systems**

- Extensive traditional systems
- Semi-intensive ponds overall
- Low input/Low output systems
Nigeria: a huge fish market

2010 Data in Million Tons:
- Annual Fish Demand: 2.66
- Domestic Production: 0.80
- Aquaculture Production: 0.20
- Frozen Imports: 0.80
- Supply Deficit: 1.06
- Value of Imports: N100 Billion (USD 625 Million)

Promotion of fish farming

Regulation of fish imports
LARGE SCALE INTENSIVE AQ PRODUCTION SYSTEMS

- Ponds
- Tanks
- Cages
Government Support - Ghana

- Private sector led development
- Target 100,000 tonnes by end of 2016 (39,000 tonnes in 2014)
- Aquaculture fund and subsidies from government
- Increased availability high quality feed and seed
- Enhancement of genetic quality broodstock
- Technical and administrative support by government
- Ban on Tilapia imports
<table>
<thead>
<tr>
<th>Agency/Commission</th>
<th>Permit Type</th>
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<tbody>
<tr>
<td>ENVIRONMENTAL PROTECTION AGENCY (EPA)</td>
<td>ENVIRONMENTAL PERMIT</td>
</tr>
<tr>
<td>FISHERIES COMMISSION</td>
<td>AQUACULTURE OPERATIONAL PERMIT</td>
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<tr>
<td>WATER RESOURCES COMMISSION</td>
<td>WATER USE PERMIT</td>
</tr>
<tr>
<td>VOLTA RIVER AUTHORITY (VRA)</td>
<td>VRA PERMIT (if operations within VRA)</td>
</tr>
<tr>
<td>DISTRICT ASSEMBLY</td>
<td>OPERATIONAL PERMIT</td>
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</table>

**BOTTLENECK – PERMITS**
**Bottleneck - Feeds**

60-70% production costs

- Imported (too expensive)
- Locally Industrially Manufactured
- No standards
- Local Artisanal
- Compounded on-farm
BOTTLENECK - SEEDS

- Quantity and quality
  - Insufficient
  - High mortality
  - Low performance

- No standards
OVERALL BOTTLENECKS

- Bureaucracy in policy & permitting
- Lack of investment capital for local producers
- Knowledge, expertise, technology, skills
- Infrastructures, Logistics
CONCLUSIONS AND RECOMMENDATIONS

- 3 important and shared bottlenecks: Feed-Seed-Knowledge
- Public Private Partnerships:
  - Turning Bottlenecks into Business Opportunities
  - Research support to sustainable development of AQ
  - Increase (sub)regional networking & collaboration
- Government/Policy in WA:
  - Investment in basic infrastructures
  - Fish farming permits
  - Import of aquaculture inputs
  - Introduction and farming of performant fish strains
  - Certification of inputs and providers
  - Introduction of BMPs
THANK YOU

- All PP Partners & Stakeholders in WA and NL
- Dutch Embassies in Accra, Lagos, Cotonou, Bamako

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