The Prospects of Rice Production in Western Africa

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Introduction

• Rice is a major cereal crop worldwide. Supplying the daily calorie intake for more than half the world’s population
• Important crop in Africa, consumption has sustainably increased over the years. It is the most rapidly growing food commodity in Africa
• Total production in Africa = 30.7 m in 2014 of which Western Africa accounted for 54% (FAOSTAT, 2017)
• Increased production is due to increase in cultivated area; improved and adapted varieties and accompanying GAP
• Notwithstanding, Western Africa is a net importer of rice
Rice production systems - types and characteristics -

- **Irrigated lowland**: Controlled and assured water supply; improved varieties; high input use; improved management and most productive

- **Rainfed lowland**: Water control and supply not always assured; rainfall dependent; improved or traditional varieties; high potential
  - **Flood prone**: deep water and mangrove swamp areas; tall and photoperiod sensitive varieties; tolerant to flooding, salinity and ability to elongate

- **Rainfed upland**: Rice grown on free-draining soils; water table below the rooting depth; no controlled or assured water supply; rainfall dependent; in past dominated by traditional varieties with low yields; increasingly improved NERICA and ARICA varieties with high yields
# Rice production systems -types and characteristics-

<table>
<thead>
<tr>
<th>Ecology</th>
<th>Area (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irrigated lowland</td>
<td>26</td>
</tr>
<tr>
<td>Rainfed lowland</td>
<td>38</td>
</tr>
<tr>
<td>Rainfed upland</td>
<td>32</td>
</tr>
<tr>
<td>Other</td>
<td>4</td>
</tr>
</tbody>
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Source: Diagne et al. (2013)
Rice production systems -types and characteristics-

Adapted from WARDA, 2004
Rice-growing environments in West Africa:
Upland - Lowland (irrigated and rainfed) - Mangrove

Challenges

• Physical, biological and management
  • Vary according to agro-ecology
  • Lack of quality seeds of improved adapted varieties (weak seed industry)

• Human resources
  • Lack of critical mass of researchers
  • Non-literate farming community
  • Weak research-extension-farmer linkages
  • Weak farmer organizations
  • Lack of public-private partnerships

• Socioeconomic and policy
  • Inadequate input and output pricing
  • Limited access to credit and inputs
  • Poor rural infrastructure
Strengths and opportunities

• Presence of leading international rice R4D institution like AfricaRice and emerging centers of excellence

• AfricaRice is an association of member states and member of CGIAR with a mission to contribute to poverty alleviation and food security in Africa through partnership
  • Created in 1971 as WARDA then renamed AfricaRice in 2009
  • Has been particularly active in Western Africa

• Has brought concrete benefits to consumers over the years
Strengths and opportunities

- BENIN
- TANZANIA
- NIGERIA
- SENEGAL
- COTE D’IVOIRE

- Country office (5)
- Regional station (2)
- HQ
Strengths and opportunities

- Generate knowledge, technologies and tools that result in increased productivity in the rice value chain

- Dissemination of improved technologies through IPs and TFs

- Diffusion of information and knowledge through different channels (national/regional)
Strengths and opportunities

• Improved and adapted varieties
  • 18 NERICA varieties for upland ecology
  • 60 lowland NERICA varieties for lowland/irrigated ecology
  • Sahel varieties for irrigated ecology
  • Climate smart ARICA varieties
    • Flood tolerant mega varieties (NERICA L19\textsubscript{sub1}; WITA 4\textsubscript{sub1})
  • Hybrid rice varieties for irrigated ecology
    • AR032H; AR051H – advanced stage in Senegal & Nigeria

• Complementary technologies
  • RiceAdvice
  • Gem parboiling
  • Mechanization – ASI thresher, weeders
### Strengths and opportunities

**Latest generation of AfricaRice varieties**

<table>
<thead>
<tr>
<th>Variety</th>
<th>Appealing point</th>
</tr>
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<tbody>
<tr>
<td>ARICA 1</td>
<td>Yield: 30% &gt; NERICA L19</td>
</tr>
<tr>
<td>ARICA 2</td>
<td>Yield: 50% &gt; NERICA L19</td>
</tr>
<tr>
<td>ARICA 3</td>
<td>Yield: 30% &gt; NERICA L19; good grain quality, high milling recovery, low chalkiness, and shorter cooking time</td>
</tr>
<tr>
<td>ARICA 4</td>
<td>Yield: 15% &gt; NERICA 4</td>
</tr>
<tr>
<td>ARICA 5</td>
<td>Yield: 15% &gt; NERICA 4</td>
</tr>
<tr>
<td>ARICA 6</td>
<td>Fe toxicity tolerance</td>
</tr>
<tr>
<td>ARICA 7</td>
<td>Fe toxicity tolerance</td>
</tr>
<tr>
<td>ARICA 8</td>
<td>Fe toxicity tolerance</td>
</tr>
<tr>
<td>ARICA 9</td>
<td>Cold tolerance</td>
</tr>
<tr>
<td>ARICA 10</td>
<td>Cold tolerance</td>
</tr>
<tr>
<td>ARICA 11</td>
<td>Salt tolerance</td>
</tr>
</tbody>
</table>
Strengths and opportunities

• Complementary technologies and tools for improving rice value chains in Africa
• RiceAdvice – An Android based decision support tool for providing farmers with pre-season field-specific management guidelines for rice production

RiceAdvice installation & use
Strengths and opportunities

• Complementary technologies and tools for improving rice value chains in Africa
• RiceAdvice locations
Strengths and opportunities

• Complementary technologies and tools for improving rice value chains in Africa

• **GEM parboiling** – Enhanced grain quality
  • An improved parboiling technology grain quality-enhancer, energy efficient and durable material (GEM) parboiling technology combines the use of a uniform steam parboiler and an improved parboiling stove
    - Glazoue & Malanvile in Benin; Nasarawa in Nigeria

• **Mechanization** – For improved quality and reduced drudgery
  • ASI thresher, manual weeders
Strengths and opportunities

• Emerging private seed entrepreneurs and SMEs
  • SMEs specialized in seed and other agro-inputs now common place
    • NAFASO (Burkina Faso); Faso Kaba (Mali); Premier Seed (Nigeria)
  • National seed associations have been formed and are playing crucial roles to ensure sustainability of seed industry
    • ASSEMA (Mali); UNIS (Senegal); ANES-BF (Burkina Faso); SEEDAN (Nigeria)
  • Regional associations like AFSTA and ROPPA
Strengths and opportunities

• Existing seed market to be exploited

Source: WASP-CORAF, (2013)
Strengths and opportunities

• Improved policy for enhanced productivity and trade
  • NRDS and policies implemented to stimulate production esp. after rice crisis
  • Average growth rate = 11.8% (2008-2012) whilst it was 1.8% (2000-2007)
  • Public-private sector willingness to collaborate

• Towards harmonization of seed regulations at regional level
  • Regionally harmonized seed regulation and variety catalogue
    • The ECOWAS Seed Regulation & Variety Catalogue: ECOWAS-UEMOA-CILLS largely implemented in member states

• The Common External Tariff (CET) in order to secure investments, provide incentive for rice production and control for massive imports
Conclusion

• There is high potential for increased rice productivity across the rice value chain in Western Africa

• The presence of AfricaRice which is a CGIAR center but also an association of member is a unique opportunity for increased rice production in Western Africa

• Market-oriented research for development

• Emerging private sector to ensure sustainability

• Increasingly appropriate policy environment for private investment
Thank you/ Merci beaucoup