Transforming African Agriculture: Successes, Challenges and Opportunities

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Michigan State University
Presented at the African Development Bank conference
“Feeding Africa: An Action Plan for African Agricultural Transformation”
Dakar
October 21, 2015
Transforming African Agriculture

1. Past successes
2. Future opportunities
3. Challenges
4. A strategy for moving forward
Roller Coasters or Rocket Ships?

Production (000 tons)

- Red line represents roller coasters.
- Blue line represents rocket ships.

Production values range from 0 to 2000 (000 tons) from 1961 to 2005.
1. Learning from past successes

• Inventory “successes”: $n = 250$ nominations
• Select informative cases: advisory panel
• Comparative case studies: $n = 18$
• Generalize: stakeholder workshops

Source: Haggblade and Hazell (2010)
Improved cassava varieties
Improved varieties spread

Kenya horticulture exports

Value of exports (US$ million)

- Other vegetables
- Other proc. vegetables
- Other fresh vegetables
- Green beans
- Other fruit
- Other fresh tropical fruit
- Mangoes
- Pineapple juice (SS)
- Pineapples, canned

- Canned pineapples
- Other fresh vegetables
- Green beans
- Pineapple juice (SS)
What drives success?

• Increased productivity
• Market incentives
Dual requirements for agricultural growth

- Increased productivity: on farm and post-farm
- Market incentives

+
Key public goods required

• Research
  – Vegetatively propagated crops
  – Orphan crops
• Disease control
• Education and training
• Infrastructure
• Policies
Transforming African Agriculture

1. Past successes

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3. Challenges

4. A strategy for moving forward
Growing urban population (millions)

Source: UN Urban Projections (http://esa.un.org/unup)
Projected growth in African food markets, 2010 to 2050

Growth multiple in value added

1. Consumption
2. Distribution
   - Packaging
   - Processing
   - Marketing
3. Farming

3 X ++ high value perishables (poultry, dairy, horticulture, meat)

Source: Haggblade 2011
Projected growth in African food markets, 2010 to 2050

Growth multiple in value added

Consumption

Distribution
Packaging
Processing
Marketing

Farming

3 X

++ high value perishables (poultry, dairy, horticulture, meat)

6 X

Source: Haggblade 2011
Tanzania’s fastest growing food markets ($Billion/year, 2050 vs 2010)

Table 3. Projected increase in consumer spending ($ billion per year)

<table>
<thead>
<tr>
<th>Category</th>
<th>Annual spending increases ($B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prepared foods</td>
<td>70</td>
</tr>
<tr>
<td>Beverages</td>
<td>22</td>
</tr>
<tr>
<td>Livestock products</td>
<td>23</td>
</tr>
<tr>
<td>Horticulture</td>
<td>10</td>
</tr>
<tr>
<td>Rice</td>
<td>11</td>
</tr>
<tr>
<td>Maize</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: Minde et al. 2013
### Six countries SE Africa

Table 4. Changing food expenditure patterns Eastern and Southern Africa’s maize belt

<table>
<thead>
<tr>
<th></th>
<th>Expenditure ($ billions)</th>
<th>Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2010</td>
<td>2040</td>
</tr>
<tr>
<td><strong>Formal</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>high</td>
<td>9</td>
<td>127</td>
</tr>
<tr>
<td>low</td>
<td>41</td>
<td>304</td>
</tr>
<tr>
<td>Unprocessed, high value</td>
<td>24</td>
<td>154</td>
</tr>
<tr>
<td>Informal processed</td>
<td>10</td>
<td>32</td>
</tr>
<tr>
<td>Own production</td>
<td>55</td>
<td>211</td>
</tr>
<tr>
<td><strong>Total food expenditure</strong></td>
<td><strong>138</strong></td>
<td><strong>828</strong></td>
</tr>
</tbody>
</table>

Source: Tschirley et al. (2013)
Mapping urban markets: rice

Source: Haggblade et al (2013)
Mapping urban markets: poultry

Source: Haggblade et al (2013)
Major food markets
Surplus food production zones
Linking breadbasket zones with markets: maize market sheds in Eastern and Southern Africa

Source: Govereh et al 2009
Historic opportunities in domestic urban food markets

- Fastest urbanization in the world
- Growing middle class
- Growing urban food markets
- High value foods
- Post-farm value added
- Linking breadbasket zones to cross-border markets
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Challenges

• Import competition in urban food markets
• Small country problem
• Youth bulge: 400-800 million
• Shifting skill needs
Import competition

Total African Agricultural Trade Values, billions of constant 2005 $US

Source: FAOSTAT
Africa’s small-country problem

Table 8. Dimensions of Africa’s Small-Country Problem

<table>
<thead>
<tr>
<th></th>
<th>Percent of Africa's 54 countries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population</td>
<td></td>
</tr>
<tr>
<td>under 5 million</td>
<td>35%</td>
</tr>
<tr>
<td>under 10 million</td>
<td>49%</td>
</tr>
<tr>
<td>Landlocked</td>
<td>27%</td>
</tr>
<tr>
<td>Electricity generation less than 200 MW</td>
<td>39%</td>
</tr>
<tr>
<td>Fertilizer consumption under 25,000 tons</td>
<td>46%</td>
</tr>
</tbody>
</table>

Mo Ibrahim, November 19, 2009

“Who are we to think that we can have 53 tiny little countries and be ready to compete with China, India, Europe, the Americans? It is a fallacy... We need scale and we need that now. “
Cropping zones cut across borders

Tschirley et al. (2013)
Markets cut across borders
Political borders restrict trade
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## Think Regionally!

<table>
<thead>
<tr>
<th>Requirements</th>
<th>Regional Strategies</th>
<th>Yield Efficiency Gains</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increased productivity</td>
<td>• Regional R&amp;D networks</td>
<td>• Technology spillovers</td>
</tr>
<tr>
<td></td>
<td>• Harmonized input standards</td>
<td>• R&amp;D scale economies</td>
</tr>
<tr>
<td></td>
<td>• Standardized release protocols</td>
<td>• Scales economies in input supply</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Lower input costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Productivity spillovers</td>
</tr>
<tr>
<td>Market incentives</td>
<td>• Regional infrastructure (roads, power, communications)</td>
<td>• Lower production costs</td>
</tr>
<tr>
<td></td>
<td>• Trade corridors</td>
<td>• Lower processing costs</td>
</tr>
<tr>
<td></td>
<td>• Regional trade policies</td>
<td>• Lower marketing costs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Link breadbaskets with cross-border markets</td>
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