African Agricultural Transformation in the 21st Century: What Should It Look Like and How Can it be Achieved?

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Introduction

- The classical structural transformation
  - *Asian Green Revolution of the 20th century*
    - Productivity increase in smallholder agriculture
    - Driven by technology and supporting institutions
    - Multiplier effects
  - Massive migration of labor to the high-wage urban industrial sector

- How will the African agricultural transformation in the 21st century look like?
  - What will be similar? What will be different?
  - Why has it not happened, so far?
  - What can be done to promote it?
What will the African transformation look like?

- Still driven by the agricultural sector?
  - Is there any convincing alternative?

- Still based on smallholders?
  - Collier (2008): “Romantic populism”
  - Byerlee & de Janvry: “Sound economic and social policy”

- So, what will be different?
  - Tailored to the diverse agro-ecological conditions and cropping systems (less spill-over from R&D elsewhere)
    - Need to invest more in agricultural R&D (as in Australia)
  - Stronger focus on labor productivity
    - Need for mechanization
What will the African transformation look like?

- **Challenges of the 21st century?**
  - Climate change
  - Sustainable natural resource management
    - Avoid the environmental problems
      - of intensive agriculture ("evergreen revolution")
      - of extensive agriculture (e.g., nutrient depletion)
  - Globalization
    - More volatile prices?

- **Opportunities of the 21st century**
  - Adoption of technical and institutional innovations
    (e.g., submergence-tolerant varieties; index-based insurance)
  - New opportunities: Precision agriculture; ICTs, Genomics …
Why has an African agricultural transformation not yet been achieved?

1) Lack of “political will” to support agriculture
2) Governance challenges that affect implementation of agricultural investments and support programs

1) Indicators of “Political will”
   - Budget share for agriculture
     - In spite of CAADP commitment: below 10% for many countries (IFPRI budget data base)
     - Focus on subsidies rather than investments
   - Spending on agricultural R&D
     - Funding levels increased between 2000 to 2011, but not in relative terms (Beintema & Stads, 2014)
Investments in agricultural R&D

Source: Beintema and Stads (2014: 15)
Agricultural policy beliefs and discourses

- Discourse analysis in Ghana, Uganda and Ethiopia (Mockshell and Birner, 2015)
  - Approach: Interviews with a wide range of stakeholders
    - What are the main challenges facing the agricultural sector? What are appropriate policy instruments to meet these challenges?
  - Coding of the transcripts; identification of themes and story-lines; cluster analysis to identify discourse coalitions

- “Two worlds” of agricultural policy-making
  - *Domestic policy-makers*: Strong focus on mechanization and youth; subsidy programs considered to be essential
  - *Donors & Ministries of Finance*: “Non-stories”
  - Parallel policy processes (CAADP vs. Parliament)
## (2) Governance Challenges

<table>
<thead>
<tr>
<th>Government function</th>
<th>Examples</th>
<th>Governance Challenges</th>
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<tbody>
<tr>
<td>Addressing market failures in agricultural technology development</td>
<td>Public agricultural research (focus on non-excludable technologies); Publicly funded agricultural extension</td>
<td>Retaining highly qualified researchers in NARSs; Avoiding staff absenteeism and elite capture in extension, making services gender-inclusive;</td>
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<td>Investing in agricultural infrastructure</td>
<td>Building large-scale irrigation systems</td>
<td>Avoiding political interference in public procurement; corruption; embezzlement of funds</td>
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<td>Regulation to address externalities and information asymmetries</td>
<td>Regulation for biosafety, food safety, pesticides; seed certification; quality control for inputs</td>
<td>Finding a balance between “over-regulation” and “under-regulation”; Reducing regulatory costs; Organizing effective certification (inspectors)</td>
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Government Effectiveness (2014)

How to improve governance?

Empowering communities to hold service providers accountable

Ability of farmers to demand and supervise services

Capacity of service providers to finance and supply services

Performance of rural service provision
  * Quality
  * Efficiency
  * Equity
  * Sustainability

Demand-side approaches

Other factors

Agri-cultural transformation

Supply-side approaches

Improving capacity and incentives of service providers to deliver quality services

good fit
Combining demand-side and supply-side approaches in agricultural extension

- Uganda’s National Agricultural Advisory Services (NAADS) (Rwamigisa et al., 2013)
  - Creating a semi-autonomous agency
  - Decentralizing implementation to sub-county level
  - Outsourcing extension to NGOs and private providers
  - Empowering farmer groups to select priorities and be in charge of procurement of service providers

- Experience: System was ultimately abandoned
  - Governance challenges underestimated
    - Problems of public procurement; political capture
    - Lack of buy-in from key domestic constituents

- Way forward?
  - Back to public sector provision – but innovative approaches to improve accountability?
Promoting agricultural mechanization

- Private sector led approaches
  - Interest of multinational companies
- Case studies in Zambia and Ghana (Daum, 2015)
  - Experiments with different financing models (Zambia)
    - Medium farmers as contractors
  - Used tractor market (Ghana)
- Main constraints
  - Training of operators and mechanics
  - Applied research
  - Erosion
  - Maintenance?
  - Alternatives to the disk plough?
Conclusions

African agricultural transformation
- as in case of the “classical transformation” still needs to be based on productivity increase in smallholder agriculture
- but needs to be different in several aspects:
  - be tailored to the diversity of African farming systems
  - meet the challenges of climate change and resource degradation
  - use the opportunities of new technologies

Government support remains essential to address market failure
- More efforts needed to bridge the “two worlds” of policy-making and to overcome governance challenges
Thank you!
Additional slides
Divergent policy beliefs about mechanization

Domestic coalition beliefs

[The youth prefers jobs outside agriculture, which offer] …“better jobs than the drudgery that the youth go to face when they go into farming, because farming in Ghana is still largely dependent on hoe & cutlasses, so it is a lot of drudgery involved, so it is not attractive.”

(Interview with former Member of Ghana Parliament, Accra, September 10, 2012)

Donor coalition beliefs

“The tractors have a political image, because they are big, when they say we have brought in tractors, when they say we have brought in 1000 tractors, you can make a big political statement of it.”

(Interview with Development consultant and academic, September 11, 2012)
Encourage, Enable and Empower Every Citizen of India to Eliminate Corruption at All Levels of Society

हर एक नागरिक को समस्तवाद व प्रोत्साहित करे, ताकि भ्रष्टाचार का हर क्षेत्र से उन्मूलन हो सके।

5th PILLAR
जनतंत्र का पांचवा
Supply-side approaches
- Training / capacity development of staff
- Public sector management reforms
  - Example: Performance contracts
- Merit-based promotion; appropriate pay-scales
- Experience: “Good intentions and hard realities”
  - Limited success in the absence of “political will”
  - Problem of erratic funding; lack of sustainability

Demand-side approaches
- Strengthening farmers’ organizations
- Community-driven development approaches
- Including farmers’ representatives in governing bodies of research and extension organizations
Using new technologies: E-Governance

- Computerization of land records
  - Studies from India show potential for substantial reduction in bribery

- Using ITCs for delivery of extension services
  - Using cell phones to monitor performance of extension agents
  - Use of internet-based services – using webcams

- Using digital photos to control corruption in infrastructure
  - Example: Water user associations send pictures on substandard work in canal rehabilitation

- Need for more research on what works where and why
  - Opportunities for experimentation, including RCTs
Effect of climate change on crop yields

Source: IPCC 5 – Porter (2014: 498)