Rise of Medium-Scale Farms in Africa: Causes and Consequences of Changing Farm Size Distributions

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Keynote Address:
Conference on “Rural Transformation and Urbanization”
Agri4D, 20-21 September 2017, Uppsala, Sweden
Acknowledgements: The work highlighted here is jointly funded through the generous support of the American people through the United States Agency for International Development (USAID) under the Food Security Policy Innovation Lab and by the Bill and Melinda Gates Foundation under the Guiding Investments in Sustainable Agricultural Intensification Grant to MSU.
Outline

1. Document how rapidly farm structure is changing
2. Causes
3. Consequences
4. Implications
Outline

1. Document how rapidly farm structure is changing
2. Causes
3. Consequences
4. Implications
## Changes in farm structure in Tanzania (2008-2012), LSMS/National Panel Surveys

<table>
<thead>
<tr>
<th>Farm size</th>
<th>Number of farms (% of total)</th>
<th>% growth in number of farms between initial and latest year</th>
<th>% of total operated land on farms between 0-100 ha</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2008</td>
<td>2012</td>
<td></td>
</tr>
<tr>
<td>0 – 5 ha</td>
<td>5,454,961 (92.8)</td>
<td>6,151,035 (91.4)</td>
<td>12.8</td>
</tr>
<tr>
<td>5 – 10 ha</td>
<td>300,511 (5.1)</td>
<td>406,947 (6.0)</td>
<td>35.4</td>
</tr>
<tr>
<td>10 – 20 ha</td>
<td>77,668 (1.3)</td>
<td>109,960 (1.6)</td>
<td>41.6</td>
</tr>
<tr>
<td>20 – 100 ha</td>
<td>45,700 (0.7)</td>
<td>64,588 (0.9)</td>
<td>41.3</td>
</tr>
<tr>
<td>Total</td>
<td>5,878,840 (100%)</td>
<td>6,732,530 (100%)</td>
<td>14.5</td>
</tr>
</tbody>
</table>
# Changes in farm structure in Ghana (1992-2013)

<table>
<thead>
<tr>
<th>Ghana</th>
<th>Number of farms</th>
<th>% growth in number of farms</th>
<th>% of total cultivated area</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 ha</td>
<td>1,458,540</td>
<td>1,582,034</td>
<td>8.5</td>
</tr>
<tr>
<td>2-5 ha</td>
<td>578,890</td>
<td>998,651</td>
<td>72.5</td>
</tr>
<tr>
<td>5-10 ha</td>
<td>116,800</td>
<td>320,411</td>
<td>174.3</td>
</tr>
<tr>
<td>10-20 ha</td>
<td>38,690</td>
<td>117,722</td>
<td>204.3</td>
</tr>
<tr>
<td>20-100 ha</td>
<td>18,980</td>
<td>37,421</td>
<td>97.2</td>
</tr>
<tr>
<td>&gt;100 ha</td>
<td>--</td>
<td>1,740</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>2,211,900</td>
<td>3,057,978</td>
<td>38.3</td>
</tr>
</tbody>
</table>

Source: Ghana GLSS Surveys, 1992, 2013, Jayne et al., 2016, using data from Ghana GLSS Surveys I and IV.
## Changes in farm structure in Zambia (2001-2012)

<table>
<thead>
<tr>
<th>Farm size category</th>
<th>Number of farms</th>
<th>% growth in number of farms</th>
<th>% of total cultivated area</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2001</td>
<td>2012</td>
<td>2001</td>
</tr>
<tr>
<td>0 – 2 ha</td>
<td>638,118</td>
<td>748,771</td>
<td>17.3</td>
</tr>
<tr>
<td>2 – 5 ha</td>
<td>159,039</td>
<td>418,544</td>
<td>163.2</td>
</tr>
<tr>
<td>5 – 10 ha</td>
<td>20,832</td>
<td>165,129</td>
<td>692.6</td>
</tr>
<tr>
<td>10 – 20 ha</td>
<td>2,352</td>
<td>53,454</td>
<td>2272.7</td>
</tr>
<tr>
<td>20 – 100 ha</td>
<td>--</td>
<td>13,839</td>
<td>na</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>820,341</strong></td>
<td><strong>1,399,737</strong></td>
<td></td>
</tr>
</tbody>
</table>

Source: Zambia MAL Crop Forecast Surveys, 2001 and 2012
Changes in farm size distributions: Summary

1. Number of small farms growing slowly
2. Number of medium-scale farms growing rapidly
3. Share of area under small farms declining
4. Share of area under medium-scale growing, and currently over 40% of farm holdings (>25% of cultivated area)
% of National Landholdings held by Urban Households

Source: Demographic and Health Surveys, various years between 2004-2014.
% of National Landholdings held by Urban Households

- Ghana: 26.8%
- Kenya: 22.0%
- Malawi: 11.2%
- Rwanda: 10.9%
- Tanzania: 32.7%
- Zambia: 16.8%
- Tanzania: 22.0%

Countries: Ghana, Kenya, Malawi, Rwanda, Tanzania, Zambia
Characteristics of “emergent farmers”
Rise of the medium-scale farmers

Three sub-categories of medium scale farmers (Kenya, Zambia, Ghana)
Rise of the medium-scale farmers

Three sub-categories of medium scale farmers: Kenya, Zambia, Ghana

- "Elite rural based": 35%
- Successful smallholder farmers via farm expansion: 5%
Rise of the medium-scale farmers

Three sub-categories of medium scale farmers: Kenya, Zambia, Ghana

- "Elite urban based": 60%
- "Elite rural based": 35%
- Successful smallholder farmers via farm expansion: 5%
Type 1: Urban-based investor farmer

<table>
<thead>
<tr>
<th>Mode of entry to medium-scale farming status: acquire farm using non-farm income</th>
<th>Zambia (n=164)</th>
<th>Kenya (n=180)</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of cases</td>
<td>58</td>
<td>60</td>
</tr>
<tr>
<td>% men</td>
<td>91.4</td>
<td>80</td>
</tr>
<tr>
<td>Year of birth</td>
<td>1960</td>
<td>1947</td>
</tr>
<tr>
<td>Years of education of head</td>
<td>11</td>
<td>12.7</td>
</tr>
<tr>
<td>Have held a job other than farmer (%)</td>
<td>100</td>
<td>83.3</td>
</tr>
<tr>
<td>Formerly /currently employed by the public sector (%)</td>
<td>59.6</td>
<td>56.7</td>
</tr>
<tr>
<td>Current landholding size (ha)</td>
<td>74.9</td>
<td>50.1</td>
</tr>
<tr>
<td>% of land currently under cultivation</td>
<td>24.7</td>
<td>46.6</td>
</tr>
<tr>
<td>Decade when land was acquired</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969 or earlier</td>
<td>1.1</td>
<td>6</td>
</tr>
<tr>
<td>1970-79</td>
<td>5.1</td>
<td>18</td>
</tr>
<tr>
<td>1980-89</td>
<td>7.4</td>
<td>20</td>
</tr>
<tr>
<td>1990-99</td>
<td>23.8</td>
<td>32</td>
</tr>
<tr>
<td>2000 or later</td>
<td>63.4</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: MSU, UP, and ReNAPRI Retrospective Life History Surveys, 2015
Outline

1. Document how rapidly farm structure is changing
2. Causes of changing farm structure
3. Consequences of changing farm structure
4. Implications for policy and strategy
Causes of changing farm size distributions

1. Rise in world food prices – heightened investor interest in farmland

2. Urban farmer capture of land policy / farm lobbies

3. Rapid population growth
   • Fragmentation/subdivision in areas of favorable mkt access
   • Land inheritance declining
   • rising land scarcity $\rightarrow$ land markets $\rightarrow$ rising land prices
   • Rising challenges of youth access to land $\rightarrow$ migration
Sub-Saharan Africa: only region of world where rural population continues to rise past 2050

Source: UN 2013
Output and factor price indices, northern Tanzania

- Agricultural wage (TSH/day)
- Land rental rate (TSH/ha)
- Maize (TSH/kg)
Output and factor price indices, western Tanzania

<table>
<thead>
<tr>
<th>Year</th>
<th>Agricultural wage (TSH/day)</th>
<th>Land rental rate (TSH/ha)</th>
<th>Maize (TSH/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/9</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2010/11</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2012/13</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Output and factor price indices, rural Malawi, 2004-2013

Sources: IHS for land and wages; FEWSNET for urea and maize
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<td>1,725,024</td>
<td>18.3</td>
</tr>
<tr>
<td>2-5 ha</td>
<td>578,890</td>
<td>957,722</td>
<td>65.4</td>
</tr>
<tr>
<td>5-10 ha</td>
<td>116,800</td>
<td>256,620</td>
<td>119.7</td>
</tr>
<tr>
<td>10-20 ha</td>
<td>38,690</td>
<td>110,076</td>
<td>184.5</td>
</tr>
<tr>
<td>20-100 ha</td>
<td>18,980</td>
<td>46,143</td>
<td>143.1</td>
</tr>
<tr>
<td>&gt;100 ha</td>
<td>--</td>
<td>6,958</td>
<td>388.6*</td>
</tr>
<tr>
<td>Total</td>
<td>2,211,900</td>
<td>3,102,543</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: Ghana GLSS Surveys, 1992, 2013
Outline

1. Document how rapidly farm structure is changing
2. Causes of changing farm structure
3. Consequences of changing farm structure
4. Implications for policy and strategy
Consequences of changing farm size distributions

1. Rising use of mechanization
2. More capital using / labor-saving forms of agricultural production
3. Arable land less fully utilized, but better land mgt
4. Some displacement
5. Rising land prices → straining youth access to land
6. Multiplier effects of ag growth are changing
Nominal value of tractor imports to Sub-Saharan Africa (excluding South Africa), 2001-2015

Source: vanderWesthuisen, forthcoming

Source: vanderWesthuisen, forthcoming
## GINI coefficients in farm landholding

<table>
<thead>
<tr>
<th></th>
<th>Period</th>
<th>Movement in Gini coefficient:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ghana (cult. area) (GLSS)</td>
<td>1992 → 2013</td>
<td>0.54 → 0.70</td>
</tr>
<tr>
<td>Kenya (cult. area) (KIHBS)</td>
<td>1994 → 2006</td>
<td>0.51 → 0.55</td>
</tr>
<tr>
<td>Tanzania (landholdings) (LSMS)</td>
<td>2008 → 2012</td>
<td>0.63 → 0.69</td>
</tr>
<tr>
<td>Tanzania (area controlled) (ASCS)</td>
<td>2008</td>
<td>0.89</td>
</tr>
<tr>
<td>Zambia (landholding) (CFS)</td>
<td>2001 → 2012</td>
<td>0.42 → 0.49</td>
</tr>
</tbody>
</table>

Source: Jayne et al. 2014 (JIA)
Average land area allocated to each land use, by category of landholding size

Source: Agricultural Sample Census, 2008
Outline

1. Document how rapidly farm structure is changing
2. Causes of changing farm structure
3. Consequences of changing farm structure
4. Implications for policy and future research
Summary of main findings:

1. Important changes in the distribution of farm sizes
   - Decline in share of farmland under 5 hectare farms
   - Rise of medium-scale farms

2. Rising inequality of farmland distribution

3. Growing land scarcity driven by middle/high income urban people seeking to acquire land – not just for land
   - speculation, housing/properties, farming
   - Rise of new towns converting formerly remote land into valued property

4. Results derived during a decade of very high food prices
Implications for policy

1. The “transition” issue
   • How to transform African economies from current situation to more diversified and productive economies

2. Agricultural productivity growth will be the cornerstone of any comprehensive youth livelihoods strategy:
   - Ag productivity growth influences
     • pace of labor force exit out of farming
     • Labor productivity in broader economy
3. Ag sector policies must anticipate and respond to

- rising land prices, decline of inheritance, market as increasingly important mode of acquiring land

- Resources needed for youth to succeed in farming (access to land, finance)

- Distinguish between “trying to keep youth in agriculture” vs. “giving youth viable choices”
Major research issues to guide agricultural policy:

1. Productivity differences between small and medium-scale farms – limited evidence
   - but reasons to believe that capitalized and educated MS farms will be more productive
   - Main implications for pace of transformation may pertain more to general equilibrium effects on employment and wages in broader economy

2. Are there positive or negative ‘spillover’ effects?
Major challenges/research issues for land policies: How to effectively

1. Strengthen land use planning to identify surplus agricultural land that can be allocated to investors without displacing local people
2. Encourage access to unutilized land to those who can raise ag productivity
3. Provide stronger land rights for women: While many African countries have new laws recognizing gender equality, implementation is weak, especially given continued dominance of customary practices, which tend to discriminate against women
Thank You
• Roughly 28% of rural population in SSA live on degrading agricultural land.
• 43 million additional people living on DAL between 2000-2010
Farming remains largest single employer of workforce.

Sectoral employment shares of total jobs in FTE:

- **Ghana (2012/13)**: 34% (Farming), 19% (Off-farm AFS), 47% (Non-farm)
- **Nigeria (2012/13)**: 34% (Farming), 23% (Off-farm AFS), 43% (Non-farm)
- **Rwanda (2010/11)**: 54% (Farming), 9% (Off-farm AFS), 37% (Non-farm)
- **Tanzania (2012/13)**: 48% (Farming), 17% (Off-farm AFS), 35% (Non-farm)
- **Uganda (2011/12)**: 49% (Farming), 14% (Off-farm AFS), 38% (Non-farm)
- **Zambia (2012)**: 47% (Farming), 9% (Off-farm AFS), 44% (Non-farm)
Farming remains largest single employer of workforce

Sectoral employment shares of total jobs in FTE

- Ghana (2012/13): 34% Farming, 19% Off-farm AFS, 47% Non-farm
- Nigeria (2012/13): 34% Farming, 23% Off-farm AFS, 43% Non-farm
- Rwanda (2010/11): 54% Farming, 19% Off-farm AFS, 9% Non-farm
- Tanzania (2012/13): 48% Farming, 17% Off-farm AFS, 35% Non-farm
- Uganda (2011/12): 49% Farming, 14% Off-farm AFS, 38% Non-farm
- Zambia (2012): 47% Farming, 9% Off-farm AFS, 44% Non-farm

Legend:
- Blue: Farming
- Red: Off-farm AFS
- Green: Non-farm