Can Smallholders Farm Themselves out of smallholder farming and poverty?

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Introduction

• Smallholder farms constitute over 70% of farms in Africa, and majority of them are poor and food insecure

• Based on evidence from Asia, it has been generally accepted that a smallholder-led strategy holds the best prospects for achieving structural transformation and mass poverty reduction in Africa
Standard version of the structural transformation model (Mellor, 1976; Johnston and Kilby, 1975)

- Farming is the primary source of employment for the majority of the population
- Structural transformation process start with *agricultural productivity growth*
- Smallholders but productive farmers with sufficient land *produce a surplus*
- Money from the surplus production stimulates demand for goods and services
- This in turn stimulates jobs in various off-farm sectors
- Rural-urban migration, and gradual urbanization follows
- Slow rate of population growth in rural areas and land consolidation
- Agriculture declines in its relative share of total GDP over time
CONCERNS about the viability of a smallholder-led growth strategy in Africa

1. Small-scale farming in Africa has historically provided very LOW RETURNS to labor

2. Mounting POPULATION pressure and shrinking FARM SIZES

3. UNSUSTAINABLE forms of agricultural intensification with population growth

4. Changing FARM STRUCTURE-- rising proportion of land among medium-scale farms
CONCERNS about the viability of a smallholder-led growth strategy in Africa

Examining the viability of smallholder farming take on even greater policy importance in light of recent studies questioning the viability and even the objectives of promoting small-scale agriculture in Africa

“Favoring small farmers is romantic but unhelpful”

[Collier and Dercon, 2014]
CONCERNS about the viability of a smallholder-led growth strategy in Africa

1. Small-scale farming in Africa has historically provided very low returns to labor

   • Most rural households now appear to be seeking ways to improve their livelihoods away from farming

   • Most rural households attempt to diversify into higher-return non-farm employment or getting out of farming entirely
CONCERNS about the viability of a smallholder-led growth strategy in Africa

2. Mounting POPULATION pressure and shrinking FARM SIZES

- Rising rural population densities leading to declining land sizes
- Most African farms have little control over water, are prone to frequent droughts, and have only one growing season per year
Sub-Saharan Africa: only region of world where rural population continues to rise past 2050

Source: UN 2013
### Population densities in 10 topmost densely populated districts in Kenya

<table>
<thead>
<tr>
<th>Province</th>
<th>District</th>
<th>Rural population</th>
<th>Density</th>
<th>Rural area prop.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Western</td>
<td>Emuhaya</td>
<td>135,723</td>
<td>1,011</td>
<td>0.77</td>
</tr>
<tr>
<td>Western</td>
<td>Hamisi</td>
<td>148,259</td>
<td>948</td>
<td>1.00</td>
</tr>
<tr>
<td>Western</td>
<td>Vihiga</td>
<td>96,535</td>
<td>931</td>
<td>0.52</td>
</tr>
<tr>
<td>Nyanza</td>
<td>Kisii Central</td>
<td>283,117</td>
<td>844</td>
<td>0.93</td>
</tr>
<tr>
<td>Nyanza</td>
<td>Gucha</td>
<td>364,460</td>
<td>821</td>
<td>0.96</td>
</tr>
<tr>
<td>Nyanza</td>
<td>Manga</td>
<td>87,859</td>
<td>789</td>
<td>1.00</td>
</tr>
<tr>
<td>Nyanza</td>
<td>Nyamira</td>
<td>263,201</td>
<td>779</td>
<td>0.85</td>
</tr>
<tr>
<td>Central</td>
<td>Githunguri</td>
<td>128,643</td>
<td>772</td>
<td>0.96</td>
</tr>
<tr>
<td>Nyanza</td>
<td>Gucha South</td>
<td>146,307</td>
<td>760</td>
<td>0.94</td>
</tr>
</tbody>
</table>

Source: Republic of Kenya, KNBS, 2009 Population Census Data
CONCERNS about the viability of a smallholder-led growth strategy in Africa

3. UNSUSTAINABLE forms of agricultural intensification with population growth
   • Declining land sizes leading to degraded soils
   • Reduced fallows leading to decline in soil organic matter
   • Micro-nutrient deficiencies
   • Soil acidification due to continued use of inorganic fertilizers
   • LEADING to soil-induced poverty traps
Agricultural intensification - Kenya

Source: Tegemeo Institute Panel Data, Kenya
Intensification tends to plateau at about 500–600 persons/km²

Figure 4: Net crop income per hectare cultivated

Sustainable intensification

Unsustainable intensification

Source: Tegemeo Institute Panel Data, Kenya
Declining arable land per household in agriculture

Figure 1: Area cultivated per household

Source: Tegemeo Institute Panel Data, Kenya
### Proportion of population facing unsustainable agricultural intensification in Kenya

<table>
<thead>
<tr>
<th>Population density (persons/km² of arable land)</th>
<th>% of population (excluding urban areas)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0&lt;den&lt;=200</td>
<td>36%</td>
</tr>
<tr>
<td>200&lt;den&lt;=400</td>
<td>26%</td>
</tr>
<tr>
<td>400&lt;den&lt;=600</td>
<td>16%</td>
</tr>
<tr>
<td>600&lt;den&lt;=800</td>
<td>8%</td>
</tr>
<tr>
<td>800&lt;den</td>
<td>14%</td>
</tr>
<tr>
<td>total</td>
<td>100%</td>
</tr>
</tbody>
</table>
CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE– rising proportion of land among medium-scale farms
# Farm structure in Kenya

<table>
<thead>
<tr>
<th>Land under cultivation category</th>
<th>Number of farms ‘000</th>
<th>Share of farms (%)</th>
<th>Share of landholding (%)</th>
<th>Share of net crop production (%)</th>
<th>Share of net farm production (%)</th>
<th>Share of crop production sales (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ha and below</td>
<td>3,735.10</td>
<td>71.80</td>
<td>34.39</td>
<td>40.83</td>
<td>38.67</td>
<td>33.42</td>
</tr>
<tr>
<td>above 1 to 5 ha</td>
<td>1,388.34</td>
<td>26.69</td>
<td>56.36</td>
<td>52.68</td>
<td>54.44</td>
<td>53.89</td>
</tr>
<tr>
<td>above 5 to 20 ha</td>
<td>74.09</td>
<td>1.42</td>
<td>8.36</td>
<td>5.83</td>
<td>6.17</td>
<td>11.03</td>
</tr>
<tr>
<td>above 20 ha</td>
<td>4.64</td>
<td>0.09</td>
<td>0.89</td>
<td>0.66</td>
<td>0.72</td>
<td>1.66</td>
</tr>
<tr>
<td>Total</td>
<td>5,202.17</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

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

Percent

"Elite rural based" 35
Successful smallholder farmers via farm expansion 5

0 10 20 30 40 50 60 70 80 90 100

Percent
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></th>
<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></td>
<td>58</td>
<td>60</td>
</tr>
<tr>
<td>% men</td>
<td></td>
<td>91.4</td>
<td>80</td>
</tr>
<tr>
<td>Year of birth</td>
<td></td>
<td>1960</td>
<td>1947</td>
</tr>
<tr>
<td>Years of education of head</td>
<td></td>
<td>11</td>
<td>12.7</td>
</tr>
<tr>
<td>Have held a job other than farmer (%)</td>
<td></td>
<td>100</td>
<td>83.3</td>
</tr>
<tr>
<td>Formerly /currently employed by the public sector (%)</td>
<td></td>
<td>59.6</td>
<td>56.7</td>
</tr>
<tr>
<td>Current landholding size (ha)</td>
<td></td>
<td>74.9</td>
<td>50.1</td>
</tr>
<tr>
<td>% of land currently under cultivation</td>
<td></td>
<td>24.7</td>
<td>46.6</td>
</tr>
<tr>
<td>Decade when land was acquired</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1969 or earlier</td>
<td></td>
<td>1.1</td>
<td>6</td>
</tr>
<tr>
<td>1970-79</td>
<td></td>
<td>5.1</td>
<td>18</td>
</tr>
<tr>
<td>1980-89</td>
<td></td>
<td>7.4</td>
<td>20</td>
</tr>
<tr>
<td>1990-99</td>
<td></td>
<td>23.8</td>
<td>32</td>
</tr>
<tr>
<td>2000 or later</td>
<td></td>
<td>63.4</td>
<td>25</td>
</tr>
</tbody>
</table>

Source: MSU, UP, and ReNAPRI Retrospective Life History Surveys, 2015
% of National Landholdings held by Urban Households

Source: Demographic and Health Surveys, various years between 2004-2014.
CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE -- CAUSES

a) Rise in world food prices – heightened investor interest in farmland

b) Urban elite capture of land policy / farm lobbies
   • Access to capital, management expertise, ability to navigate complex traditional and/or statutory land institutions

c) Elite capture of government input and output policies

d) Rise of new towns converting remote land into valued property

e) One-way direction flow of migration from farm to off-farm sectors may not generally apply in Kenya
CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE—CONSEQUENCES [+++]

a) More capital and labor-saving technologies use—
   – Example: rising use of mechanization

b) Medium farms more productive than small-scale farms
   • Reasons to believe that capitalized and educated MS farms are more productive

c) Vent-for-surplus
   • Medium-scale farm contributing a large share of marketed surplus
   • Selling to large grain traders, get higher prices due to reduced transaction costs
CONCERNS about the viability of a smallholder-led growth strategy in Africa

4. Changing FARM STRUCTURE—CONSEQUENCES [---]

a) Growing land scarcity

b) Rising inequality of farmland distribution
   • Some displacement of smallholders

c) Is mechanization displacing agricultural employment?

Source: vanderWesthuisen, forthcoming
1. Smallholder farming is under siege—only a few can *FARM* themselves out of smallholder farming

   Most smallholder farms have become “too small” to generate meaningful production surpluses and participate in broad-based inclusive agricultural growth processes given existing technologies.

2. Continued concentration of arable land may have profound consequences for both the pace and the nature of growth within rural economies

   Relatively egalitarian land distribution patterns have tended to generate more broadly based growth.
Implications for policy

1. The “transition” issue still alive
   • How to transform Kenyan economy from current situation to more diversified and productive economy

2. Agricultural productivity growth will still be the cornerstone of any inclusive economic development and improved livelihoods:
   – Multiplier effects: ag productivity will influence the pace of growth in non-farm jobs
   – Pace of labor force exit out of farming
   – Labor productivity in broader economy

3. Multiplier effects may be much weaker when the source of agricultural growth is concentrated
3 categories of activities that promote structural transformation

1. Actions that the private sector will undertake on its own
   - Example: distribution of inputs to areas where demand is strong

2. Actions that the private sector will undertake if governments create a favorable ‘enabling environment’
   - Example: distribution of inputs to areas where demand would be strong with improved road, port, communications infrastructure

3. Actions that the private sector will not do under most circumstances and that governments must do
   - Example: Infrastructure, education, R&D, extension services
Thank You

Tomorrow belongs to people who prepare for it today

--African Proverb--
Available national datasets are unsuitable to understand changes in farm structure

1. Sample proportional to population and tend to systematically under-sample large farms
2. Often exclude non-smallholder farming sectors by default or design
3. Tend not to prompt urban households about farmland they may cultivate or own away from their main urban residences
4. Truncate landholding data