Integrating Food and Nutrition Security into Economic Transformation and Industrialization Agenda: How can agriculture be the driver rather than follower of economic transformation in Tanzania?

New Dodoma Hotel, Dodoma

14th - 16th February, 2018
Synergies between small and medium scale farmers in Tanzania

Alphonse, Roselyne (SUA), Minde, Isaac (MSU) & Muyanga, Milu (MSU)
Background and Motivation of the study

- Guided by the *theory of change*

- Commercialization in agriculture has a potential to lead to employment of smallholders in **agro-industry**- (land preparation, planting, post-harvest mgt)

- While, assuring the agro-industry investors with consistent availability of labor.

- Therefore, the GoT is promoting endorsed agriculture commercialization (as an intervention) for industrialization, better income, FNS.
Background cont’d

- In the literature, debate on large vs medium vs small production gives mixed feelings.
- Some argue that small and medium scale farms are more efficient than large scale farms (Deininger and Byerlee, 2011)
- Others argue that there is a spillover effect from large/medium to small farms (SAGCOT and BRN models).
Others argue that large scale farms have less potential than small and medium scale commercial farmers (www.future-agriculture.org-Policy Brief 84, July 2016).

- More concentrated land distributions will be owned by fewer large and medium farmers, who are not former small farmers.

- Targeting large scale farming will lead to transferring of public competitive resources and services to larger farmers (Deininger and Byerlee, 2011; World Bank, 2011).

- Displacement of villagers.
## Changes in farm structure in Tanzania (2008-2012)

*Source: Jayne et al; 2017 calculations
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>2008</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>
% of National Landholdings held by Urban Households

Source: Demographic and Health Surveys, various years between 2004-2014; Jayne et al calculations
Research Questions

1. The paper strive to answer, if the SAGCOT model is an effective model for agriculture commercialization, poverty alleviation and food security.

   o Specifically; the study looks at the influence of distance (between small and medium/large farms) on:-

   - The level of commercialization (Commercialization Index).
   - Production (total value of crop output per hectare)
   - Specialization Vs Diversification
   - Soil quality (proxy for agronomic management practices)
   - Use of inputs, mechanization & extension services (proxy for market access)
   - Welfare in terms of food security (calories)
Research Question

2. In the co-existence of large and small-scale; who wins and who losses

Benefits and constraint from the synergy

- **Benefit-large scale**
  - Reliable and cost-effective labor, raw material

- **Constraint**
  - Conflict, poor labor market, unreliable inputs

- **Benefits small scale farms**
  - Employment—(what is the opportunity cost for labor—next best alternative(off-farm activities, non-farm activities); markets (access to market-input and output); access to technology (tractor services, input or extension services); management practices
Study Design

A cross-sectional study, conducted in eight districts (including the SAGCOT region) in Tanzania in October 2016

Participants

1200 farmers were randomly recruited from a cluster of large and small scale farmers; finally, 1188 completed the interviews

- Small scale farmers included farmers with < 5 hectares
- Medium between 5-100 hectares
- Large > 100 hectares
  - Farm categorization was based on the most important field crop
    - where soil testing
    - GPS coordinates were taken
Findings - General Results

Spill over effects on small scale farms

- 82% claim to have large scale farmers around them; while
- 17% claim not to have any large scale farmers around.
- Of the 505 farmers who have access to large scale farms
  - 91% plant crops related/similar to large scale farmers crops

✓ Of those who produce crops similar to large scale farmers (462)
Only 19% sell their crops to large scale farmers

✓ Of the 88 who sell to large scale farms only 20% have formal contracts
✓ Other common arrangements included the spot market (82%) and pre-selling (10%)
Findings - Spill Over Effects

- Of small scale farmers (505) with access to large scale farmers:
  - Only 24% have learned new technologies from the LS farms
  - And only 17% have adopted the new technology from LS farms

- Technology mostly adopted include:
  - Good agronomic Practices.
  - The use of farm machinery including tractors.

- Some of the benefits from the adopted technologies include:
  - Increased yield;
  - Increased income;
  - Reduced drudgery;
  - Planting on time.
Findings - Benefits on the medium/large scale farms

- Technology/lessons from small scale farms
  - Only 15% claim to learn from SS (out of 403)
  - Cheap labor; Trading and selling; knowledge exchange; security (wild animals, fire and theft)
- Of the 73 (14%) LS who buy produce from SS farms
  - 29% have pre-selling arrangement; 71% spot market arrangement

Challenges include

- Price fluctuation; Poor quality products; breach of agreement.
THANK YOU