Changing Farm Structure and Agricultural Commercialization: Implications for Livelihood Improvements among Small-Scale Farmers in Nigeria

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Work Stream 1 Study

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Introduction

• In the past, national development policy strategies within the SSA region officially regard the smallholder farming sector as the main vehicle for achieving sustainable and inclusive growth in the agricultural sector.

• However, the recent wave of rise of medium scale farms across SSA is providing an alternative pathway to food security, poverty reduction, and employment.

• These changing farm structures is expected to impact to the livelihood outcomes of the millions of smallholder farms through the growth of commercialization
Research Questions

i. What are the characteristics of the emerging medium-scale farms?

ii. Are there productivity differences between small and medium-scale farms?

iii. How do these MSFs influence the behavior and welfare of the millions of small-scale farm households around them?

iv. Are there differences in welfare of medium scale farm households compared with small scale farm households?

v. Should Medium Scale Investor farms be promoted as a policy tool to promote agricultural commercialization and transformation?
Map Of Nigeria showing APRA WS1 & WS3 Study Locations
Key Findings (1)

Basic Types of MSFs identified:

**Stepping Up**: MSFs who Transitioned from SSFs (TMSFs)

**Stepping In**: MSF who started off as Medium Scale Farms (CMSFs)

Stepping-up is more common (40%) than Stepping-in (24%) in past 8 years (2010-2018)

**Land Use Patterns**:

*Non-staple food crops are more common with MSFs relative to SSFs*

**Productivity Differences**

*Land Productivity: SSFs greater than MSFs*

*Labour Productivity: MSFs greater than SSFs*

*Productivity (both land and Labour): CMSFs greater than TMSFs*
Key Findings (2)

Degree of Commercialization:

HCI: “Stepped Up” MSFs (72%) higher than Small Scale Farms (63%)

HIMCI: Stepped Up” MSFs (15%) higher than Small Scale Farms (10%)

Spill–Over Effects:

Providing extension services/information in terms of use of improved seeds and better planting techniques is most common form of Interaction between MSFs and SSFs
Key Findings (3)

Welfare Indicators

Income Poverty Index: Small Scale farm Households (SSFH) are poorer (IPI= 35%) than Medium Scale Farm households (MSFHs); (IPI=13 -14%)

WEI: Women in MSFHs are more empowered (63% For TSMFs and 59% for CMSFs) than women in SSFHs (56%)

MDD_W: SSFHs (59%) are better than MSFHs (53% and 37%)

MPI: MSFHs not different from SSFHs (20% -22%)

Food Insecurity Experiences: MSFHs not different from SSFHs (42-44%)
Key Findings (4)

Some Key challenges for growth of MSFs

- Security of tenure is very low among MSFs as is with SSFs
- Land acquisition through land markets is Limited due to underdeveloped land markets
- Inheritance, which is the most important source of land for expansion, is unsustainable
Highlights

i. Promoting Medium Scale farms could be an important policy tool for enhancing agricultural commercialization and smallholder transformation in Nigeria

ii. We observe that MSFs are better off than SSFs in terms of labor productivity, degree of Commercialization, and some livelihood outcomes such as poverty reduction and women empowerment

iii. The rise of MSFs can potentially enhance the transformation of SSFs through observed spill-over effects

iv. To promote the growth of MSFs, policy will need to effectively address the issue of land tenure security and increased access to land markets by prospective investors.
NEXT STEPS : PLAN FOR 2019

1. Finalize WS#1 Report and Working Paper
2. Prepare at least four research papers and journal manuscripts
   i. Medium-scale farming as a pathway to agricultural commercialization in Nigeria
   ii. Relationship between Farm Size and Productivity: Evidence from Nigeria
   iii. Spillovers between medium- and smallholder farms
   iv. Do medium Scale Farm households have better livelihood outcomes than small scale farming households:
3. Conduct qualitative data collection
4. Conduct stakeholder outreach event in Nigeria

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More Detailed Results Presentation
Characteristics of MSFs: Basic Types

The study identifies two basic categories of Medium scale farms:

i. Transition from small to medium scale farms - “Stepping up group”

ii. Emergence of investor farmers that start off as medium scale level farmers - “Stepping in group”
Figure 1: Farm-types in the Commercialization Pathway

<table>
<thead>
<tr>
<th>Farm-type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small scale</td>
<td>97.40%</td>
</tr>
<tr>
<td>Medium scale</td>
<td>52.70%</td>
</tr>
<tr>
<td>Small-scale</td>
<td>47.30%</td>
</tr>
<tr>
<td>Medium-scale</td>
<td>2.60%</td>
</tr>
</tbody>
</table>

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Identification of Pathways to Commercialization contd.

• Stepping up rate has been low: 6% stepping up in 3 decades

• Stepping up is more important mode of entry into medium scale farming within the past decade. 40% stepped up and 24% stepped in within 2010-2018
Land Use Pattern Differences.

• OGUN: Staple foods (Starch & Cereals) more popular with SSFs; Non-staple crop groups (fruits, beverage (Cocoa), oil seeds, nuts, pulses) more common with MSFs.

• Kaduna: all categories more common for MSFs compared with SSFs
Cropping Pattern Differences: Ogun State

Figure 9: No of Farmers by Crop and Scale - OGUN

- Cereal
- Pulses
- Sugars/Starch
- Fruits
- Vegetables
- Beverage
- Spices/Condiment
- Oil seeds
- Nuts

Small Scale vs Medium Scale
Cropping Pattern Differences: Kaduna State.

Figure 10: No of Farmers by Crop and Scale - KADUNA

- Cereal: Small Scale, Medium Scale
- Pulses: Small Scale, Medium Scale
- Sugars/Starch: Small Scale, Medium Scale
- Fruits: Small Scale, Medium Scale
- Vegetables: Small Scale, Medium Scale
- Beverage: Small Scale, Medium Scale
- Spices/Condiment: Small Scale, Medium Scale
- Oil seeds: Small Scale, Medium Scale
- Nuts: Small Scale, Medium Scale

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Characteristics of Pathways: Productivity Indicators

- Land and labor productivity are generally higher for MSFs who “stepped in” relative to those who “stepped up”.
- Land productivity declines with farm size, while labor productivity increases with farm size.
Productivity Indicators

Chart Title

- Crop income per ha planted ‘000N
- Crop income per adult person ‘000N
- Crop income per day spent in the farm ‘000N
- Net income per adult equivalent ‘000N

Legend:
- CSSF
- TSSF
- TMSF
- CMSF
Productivity Indicators by State (Ogun): Net Income (Y)/adult labor use (L2)

Net Income (y) /Hectare, by farm size

<table>
<thead>
<tr>
<th>Farm Size</th>
<th>Net Income (Y)/Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>below 2 ha</td>
<td>Y1 /L2</td>
</tr>
<tr>
<td>2-5 ha</td>
<td>Y1 /L2</td>
</tr>
<tr>
<td>5-10 ha</td>
<td>Y1 /L2</td>
</tr>
<tr>
<td>10-20 ha</td>
<td>Y1 /L2</td>
</tr>
<tr>
<td>20 ha and over</td>
<td>Y1 /L2</td>
</tr>
<tr>
<td></td>
<td>Y1 /A</td>
</tr>
<tr>
<td></td>
<td>L2 /A</td>
</tr>
</tbody>
</table>
Productivity Indicators by State (Kaduna):

Net Income (Y)/adult labor use (L2)
Net Income (y)/Hectare, by farm size
Characteristics of Pathways: Levels of Commercialization

Medium Scale Farms who “stepped up” (TMSF)

Have attained:

Higher degrees of commercialization

Compared with:

Small Scale Farms who “hanged in” (CSSF)

In both:

Input and output markets
## Characteristics of Pathways: Levels of Commercialization

<table>
<thead>
<tr>
<th></th>
<th>Current farm scale</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Small-scale</td>
</tr>
<tr>
<td>Farm scale when household started farming</td>
<td></td>
</tr>
<tr>
<td>Small-scale (CSSF)</td>
<td>1065</td>
</tr>
<tr>
<td>Medium-scale (TSSF)</td>
<td>476</td>
</tr>
<tr>
<td>Farm scale when household started farming</td>
<td></td>
</tr>
<tr>
<td>Small-scale (TMSF)</td>
<td>62.78</td>
</tr>
<tr>
<td>Medium-scale (CMSF)</td>
<td>71.92</td>
</tr>
<tr>
<td>Household commercialization index</td>
<td>62.78</td>
</tr>
<tr>
<td>Household Input Market Commercialization Index (HIMCI)</td>
<td>10%</td>
</tr>
</tbody>
</table>

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Spillover Effects

MSFs interacts with SSFs in the following economically beneficial ways, in order of importance:

i. Provision of extension guide/services
ii. Sales of farm inputs to smallholders,
iii. Joint purchase of farms inputs
iv. Rentals of tractor and farm machinery services
Spillover Effects: Services from MSFs to SSFs

- Services Formerly Small-Scale, now MS (TMSF)
- Services Consistently Medium-Scale (CMSF)

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Extension Service Provided by MSFs:
Common forms

i. Use of improved seeds (40%)

ii. Better planting techniques (16.4%)

iii. Use of tractor for land preparation (13.3%)

iv. Better timing of farming activities (11.7%).
Extension Service Provided by MSFs:
Common forms

- Use of improved seed: 39.5%
- Better planting techniques: 19.1%
- Use of tractor for land preparation: 16.4%
- Better timing of farming activities: 13.3%
- Other: 11.7%

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Welfare Indicators

i. Farms who remained as small scale were poorer than those who stepped up to MSFs

ii. Women from households of Transitined MSFs are more empowered relative to those from Small scale farming households
Welfare Indicators

• Preliminary Results Indicates No Difference

• between SSFs and MSFs in terms of both:
  • Minimum Dietary Diversity for Women
  and
  • Food Insecurity Experience of Household
# Welfare Indicators

<table>
<thead>
<tr>
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<th>Medium-scale</th>
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<tr>
<td>Small-scale (CSSF)</td>
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</tr>
<tr>
<td>Medium-scale (TSCF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Small-scale (TMSF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium-scale (CMSF)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>N</strong></td>
<td>1065</td>
<td>34</td>
</tr>
<tr>
<td><strong>Income Poverty Index (Poverty Headcount)</strong></td>
<td>35%</td>
<td>47%</td>
</tr>
<tr>
<td><strong>MPI</strong></td>
<td>43%</td>
<td>55%</td>
</tr>
<tr>
<td><strong>MPI (adjusted)</strong></td>
<td>20%</td>
<td>27%</td>
</tr>
<tr>
<td><strong>MDD_W</strong></td>
<td>59%</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Food Insecurity Experience Scale (FIES)</strong></td>
<td>42%</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Women Empowerment Index</strong></td>
<td>56%</td>
<td>74%</td>
</tr>
</tbody>
</table>
Welfare Indicators

- Income Poverty Index
- MPI
- MPI Adjusted
- Minimum Dietary
- Food Insecurity
- Women Empowerment

CSSF, TMSF, CMSF

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Key Challenges Characterising the rise of Medium Scale Farms

i. Security of tenure is very low among MSFs as is with SSFs

ii. Land acquisition through land markets is Limited due to underdeveloped land markets

iii. Inheritance, which is the most important source of land for expansion, is unsustainable
APRA Nigeria WS1 & 3 Data Collection Staff
Visit of APRA Nigeria WS1 Leadership to The Permanent Secretary, Kaduna State Ministry of Agriculture
Visit of APRA Nigeria WS1 Leadership to The Permanent Secretary, Ogun State Ministry of Agriculture
APRA Nigeria WS1 Field Staff in a periodical data collection review meeting with Country and Ogun State Coordinators, at Obafemi Owode LGA, Ogun State, April 2018