Insights on Smallholder Households from National Survey and Financial Diaries Data

SAFIN Workshop | 27 November 2017

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Data sources

Six countries have data from National Surveys of Smallholder Households

- Cote d'Ivoire
- Nigeria
- Bangladesh
- Uganda
- Mozambique
- Tanzania
- Pakistan

Mozambique, Tanzania, and Pakistan utilize an additional data source: Financial Diaries

Financial Innovation for Smallholder Households
National Survey of Smallholder Households
Identification of relevant smallholder households to sample

Listing criteria for the national surveys of smallholder households

**LAND AND LIVESTOCK MEASURES**
Households with up to:
- 5 HECTARES OF LAND
- 50 HEADS OF CATTLE
- 100 GOATS, SHEEP, AND PIGS
- 1,000 CHICKENS

**MEASURES OF SELF-PERCEPTION**
Agriculture provides a meaningful contribution to the household:
- LIVELIHOOD
- INCOME
- CONSUMPTION

CGAP conducted national surveys of smallholder households in Tanzania, Uganda, Mozambique, Côte d’Ivoire, Nigeria, and Bangladesh. Care was taken to use an approach in the listing exercise that would encompass the wide variety of smallholder families across all 6 countries.
National Survey of Smallholder Households

Three questionnaires to capture household information and perspectives

- **Demographics**
  - General
  - Livelihood
  - Other

- **Household economics**
  - Income sources
  - Expenses
  - Vulnerability
  - Planning
  - Economic mgmt philosophies

- **Agricultural practices**
  - Farmographics
  - Practices vs. other income
  - Practices vs. other household activities
  - Decision-making
  - Philosophies

- **Mobile phones**
  - Awareness
  - Usage
  - Demand
  - Relevance
  - Interest
  - Ability to access
  - Impetus for trying
  - Use it
  - Impact on life

- **Financial services**
  - Awareness
  - Usage
  - Demand
  - Relevance
  - Interest
  - Ability to access
  - Impetus for trying
  - Use it
  - Impact on life

**Gender:** For many questions, we capture the perspectives of both male and female members of the household.

**Household questionnaire**

**Multiple respondent questionnaire**

**Single respondent questionnaire**

Financial Innovation for Smallholder Households
Data Source: CGAP National Survey of Smallholder Households
Financial diaries with smallholder families

Methodology
The Diaries methodology combines in-depth quantitative and qualitative research. Research teams met participating families about every two weeks to collect granular data on their cash flows in and out of the household, financial tools, assets, major life events, and attitudes toward agriculture and financial services.

Sample Design
The Financial Diaries, conducted between June 2014 and June 2015, captured the financial and in-kind transactions of about 270 total households in impoverished northern Mozambique, the fertile farmlands of western Tanzania, and the Punjab province, the breadbasket of Pakistan.
Financial diaries with smallholder families

Sample locations and key characteristics

**MOZAMBIQUE**
- Sample households: 93
- Monthly p.c. net income: $5.50
- Major crops and livestock: Cassava, beans, peanuts, poultry

**TANZANIA**
- Sample households: 86
- Monthly p.c. net income: $10
- Major crops and livestock: Maize, potatoes, rice, beans, poultry

**PAKISTAN**
- Sample households: 94
- Monthly p.c. net income: $25.99
- Major crops and livestock: Wheat, rice, cotton, buffalo, goats

Financial Innovation for Smallholder Households
Data Source: CGAP Financial Diaries with Smallholder Households
Agriculture and more

Smallholder households are engaged in agriculture and a lot more. They have a range of income-generating activities and priorities, both related to and apart from their agricultural production.

And their household activities are interconnected. Solutions focused on non-agricultural activities and priorities could ease pressure and facilitate agricultural activities.
Agriculture is central to smallholder identity and livelihoods
CGAP National Surveys of Smallholder Households

Smallholder farmers who intend to continue working in agriculture:
- Mozambique: 86%
- Uganda: 88%
- Tanzania: 97%
- Bangladesh: 87%

Smallholder farmers who want to expand their agricultural work:
- Mozambique: 73%
- Uganda: 86%
- Tanzania: 93%
- Bangladesh: 89%

Sample: Smallholder farmers

97%
88%
97%
87%
86%
86%
93%
89%
Very few sales on contract
CGAP National Surveys of Smallholder Households

Sample: Smallholder farmers who grow and sell crops

“Do you have a contract to sell any of your crops and livestock?”

**YES answers**

- **Mozambique**
  - n=2,718
  - 5%

- **Uganda**
  - n=4,375
  - 8%

- **Tanzania**
  - n=3,803
  - 3%

- **Cote d’Ivoire**
  - n=4,948
  - 10%

- **Nigeria**
  - n=4,236
  - 13%

- **Bangladesh**
  - n=3,430
  - 4%
Cash is king
CGAP National Surveys of Smallholder Households

“How do you usually get paid for what you sell?”

“Cash” answers

Sample: Smallholder farmers who grow and sell crops
Multiple responses allowed

Mozambique
n=2,718

Uganda
n=4,375

Tanzania
n=3,803

Cote d’Ivoire
n=4,948

Nigeria
n=4,236

Bangladesh
n=3,430
Agriculture is perceived as the driver of household income
CGAP National Surveys of Smallholder Households

"Do you generate income from any of the following sources?"
Sample: Smallholder farmers, multiple responses allowed

<table>
<thead>
<tr>
<th>Source</th>
<th>Mozambique</th>
<th>Uganda</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growing something and selling it, such as crops, or livestock...</td>
<td>58%</td>
<td>80%</td>
<td>68%</td>
</tr>
<tr>
<td>Earning wages from occasional job</td>
<td>35%</td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>Getting money from family or friends</td>
<td>33%</td>
<td></td>
<td>8%</td>
</tr>
<tr>
<td>Rearing livestock, poultry, fish, or bees and selling it or its...</td>
<td>22%</td>
<td>35%</td>
<td>21%</td>
</tr>
<tr>
<td>Running own business by providing services</td>
<td>14%</td>
<td></td>
<td>18%</td>
</tr>
<tr>
<td>Running own business in retail or manufacturing</td>
<td>12%</td>
<td>8%</td>
<td>8%</td>
</tr>
<tr>
<td>Earning wages or salary from regular job</td>
<td>11%</td>
<td>5%</td>
<td>8%</td>
</tr>
<tr>
<td>Getting a grant, pension, or subsidy of some sort</td>
<td>7%</td>
<td>5%</td>
<td>7%</td>
</tr>
<tr>
<td>Other</td>
<td>3%</td>
<td>1%</td>
<td>9%</td>
</tr>
</tbody>
</table>

"What is your primary job?"
Sample: Smallholder farmers

Agriculture: 80%
Agriculture: 79%
Agriculture: 81%
But agriculture may not generate most cash income
CGAP Financial Diaries with Smallholder Households

Household income from agricultural and non-agricultural sources:

(1) Median number of household cash income sources
(2) Median proportion of total household cash income
(3) Median number of household income sources, with in-kind consumption
(4) Median proportion of total household income, with in-kind consumption

<table>
<thead>
<tr>
<th>Country</th>
<th>Agricultural production income</th>
<th>Non-agricultural production income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pakistan</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>42%</td>
<td>58%</td>
</tr>
<tr>
<td>Tanzania</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>26%</td>
<td>74%</td>
</tr>
<tr>
<td>Mozambique</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>7%</td>
<td>93%</td>
</tr>
</tbody>
</table>

Mozambique:
- Median number of household cash income sources: 2
- Median proportion of total household cash income: 7%
- Median number of household income sources, with in-kind consumption: 6
- Median proportion of total household income, with in-kind consumption: 49%

Pakistan:
- Median number of household cash income sources: 4
- Median proportion of total household cash income: 42%
- Median number of household income sources, with in-kind consumption: 5
- Median proportion of total household income, with in-kind consumption: 58%

Tanzania:
- Median number of household cash income sources: 2
- Median proportion of total household cash income: 26%
- Median number of household income sources, with in-kind consumption: 3
- Median proportion of total household income, with in-kind consumption: 46%

June 2014-July 2015
Segment and tailor

Smallholder households are a large and heterogenous group. **Segment** this diverse population, **understand** its distinct profiles, and **tailor** solutions to each segment of interest.

No one segmentation can do everything. Different objectives call for different views of this massive and diverse client group.
Segmentation of smallholder households
Christen and Anderson (2013)

**SOURCE**
- Desk review of data and literature

**VARIABLES**
- **Crops**: Staple crops and high-value cash crops
- **Markets**: None, spot market, high-value export markets

**Noncommercial smallholders**
- Landless, or up to 1 hectare
- Staple crops
- Production consumed by the household
- Little market engagement
- Very limited access to financial tools, informal if at all

**Commercial smallholders in loose value chains**
- 1-2 hectares
- Staple crops and some cash crops
- Some production consumed by the household
- Reliable surplus of staple crops sold informally
- Limited access to financial tools, largely informal

**Commercial smallholders in tight value chains**
- At least 2 hectares
- Reliable surplus of staple crops sold informally, some consumed by HH
- Cash crops sold through contract farming
- Access to formal and informal financial tools, some via buyers
Segmentation of smallholder households
Christen and Anderson (2013)

Commercial smallholders in tight value chains: 7%
Commercial smallholders in loose value chains: 33%
Noncommercial smallholders: 60%
Six variables drive five segments to financial inclusion
CGAP National Surveys of Smallholder Households

**SOURCE**
- Nationally-representative smallholder household survey data

**DEPENDENT VARIABLE**
- Financial inclusion

**VARIABLES**
- **Educational attainment** of head of household
- **Socioeconomic status** above or below USD 2.50 day poverty line
- **Access to emergency funds**: Equivalent of 5% of GNI per capita in local currency within a month
- **Mobile phone ownership**: At least one phone in the household
- **Attitude toward the future**: “The future will take care of itself”
- **Unexpected event** (e.g. severe illness, accident) in last 12 months

![Segmentation Chart]

- **Farming for sustenance**
  - Lowest HH income, generating very little ag income
  - Very limited access to financial tools and very vulnerable to shocks

- **Battling the elements**
  - Low HH income, more from ag and other sources
  - More financial tools, still very vulnerable to shocks

- **Diversified and pragmatic**
  - Growing, selling, and earning more
  - More income streams and financial tools
  - More likely to leave ag if given the choice

- **Options for growth**
  - Rely on ag income, most likely to have other stable income sources
  - Could pivot into or out of farming depending on opportunities

- **Strategic agricultural entrepreneurship**
  - Successful in ag
  - Relatively highest income, most resilient, and most access to financial mechanisms
Five segments of smallholder households: Mozambique
CGAP National Surveys of Smallholder Households

- Battling the elements, 15%
- Diversified and pragmatic, 4%
- Options for growth, 2%
- Strategic agricultural entrepreneurship, 1%
- Farming for sustenance, [VALUE]

- Financially Included
Five segments of smallholder households: Tanzania

CGAP National Surveys of Smallholder Households

- **Farming for sustenance, 18%**
- **Battling the elements, 15%**
- **Options for growth, 22%**
- **Strategic agricultural entrepreneurship, 15%**
- **Diversified and pragmatic, 29%**

These segments represent the varied needs and strategies of smallholder households in Tanzania, as captured by the CGAP National Surveys.
Six variables differentiate smallholder households
CGAP and Nathan Associates (2017)

<table>
<thead>
<tr>
<th>Commercializing smallholder households</th>
<th>Small-scale households</th>
<th>Diversifying smallholder households</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Rural</td>
<td>• Rural</td>
<td>• Urban, peri-urban, and rural</td>
</tr>
<tr>
<td>• Larger smallholdings</td>
<td>• Small to med-size smallholdings</td>
<td>• Smallest smallholdings</td>
</tr>
<tr>
<td>• Higher income: Mainly agricultural income</td>
<td>• Low income: Ag and casual employment income</td>
<td>• Higher income: Regular or casual employment, their own business, and some ag activities</td>
</tr>
<tr>
<td>• Cash crops for sale</td>
<td>• Consumption, with some surplus for sale</td>
<td>• Consumption crops</td>
</tr>
<tr>
<td>• Often a formal contract: Sales to wholesalers or processors</td>
<td>• No contracts: Sales to public or through a co-op or middleman</td>
<td>• No contracts: Crops sometimes sold locally</td>
</tr>
</tbody>
</table>

<table>
<thead>
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<th>Diversifying smallholder households</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Farm size</td>
<td>• Rural</td>
<td>• Rural</td>
<td>• Urban, peri-urban, and rural</td>
</tr>
<tr>
<td>• Sources of income</td>
<td>• Larger smallholdings</td>
<td>• Small to med-size smallholdings</td>
<td>• Smallest smallholdings</td>
</tr>
<tr>
<td>• Perception of farming as a business</td>
<td>• Higher income: Mainly agricultural income</td>
<td>• Low income: Ag and casual employment income</td>
<td>• Higher income: Regular or casual employment, their own business, and some ag activities</td>
</tr>
<tr>
<td>• Markets for agricultural outputs</td>
<td>• Cash crops for sale</td>
<td>• Consumption, with some surplus for sale</td>
<td>• Consumption crops</td>
</tr>
<tr>
<td>• Contract with sellers</td>
<td>• Often a formal contract: Sales to wholesalers or processors</td>
<td>• No contracts: Sales to public or through a co-op or middleman</td>
<td>• No contracts: Crops sometimes sold locally</td>
</tr>
<tr>
<td>• Types of on-farm labor</td>
<td>• Informal and formal financial tools</td>
<td>• Some informal financial tools</td>
<td>• Mostly formal financial tools</td>
</tr>
</tbody>
</table>

SOURCE
• Nationally-representative smallholder household survey data

Diversifying smallholder households
• Informal and formal financial tools
• Mostly formal financial tools
Cleavages between the segments: Average landholding
CGAP National Surveys of Smallholder Households

Landholding among Smallholders:
Average number of hectares

- Mozambique: 6.7 hectares (Commercialising), 4.6 hectares (Small-scale), 2.9 hectares (Diversifying)
- Uganda: 5.0 hectares (Commercialising), 2.4 hectares (Small-scale), 0.7 hectares (Diversifying)
- Tanzania: 8.0 hectares (Commercialising), 4.1 hectares (Small-scale), 1.9 hectares (Diversifying)
- Côte d'Ivoire: 11.8 hectares (Commercialising), 6.0 hectares (Small-scale), 0.3 hectares (Diversifying)
- Nigeria: 13.2 hectares (Commercialising), 6.9 hectares (Small-scale), 0.6 hectares (Diversifying)
- Bangladesh: 13.5 hectares (Commercialising), 12.2 hectares (Small-scale), 1.7 hectares (Diversifying)
Cleavages between the segments: Formal accounts
CGAP National Surveys of Smallholder Households

Financial Inclusion:
Percentage of smallholder respondents using a formal bank account

- Mozambique: 10% Commercialising, 11% Small-scale, 16% Diversifying
- Uganda: 10% Commercialising, 15% Small-scale, 16% Diversifying
- Tanzania: 10% Commercialising, 8% Small-scale, 12% Diversifying
- Côte d’Ivoire: 6% Commercialising, 7% Small-scale, 21% Diversifying
- Nigeria: 22% Commercialising, 16% Small-scale, 22% Diversifying
- Bangladesh: 22% Commercialising, 27% Small-scale, 26% Diversifying
Financial Diaries with Smallholder Families
- **Executive summary** | **Full paper**
- Mozambique: **Data**
- Tanzania: **Data**
- Pakistan: **Data**

National Surveys and Segmentations of Smallholder Households
- Mozambique: **Paper** | **Data**
- Uganda: **Paper** | **Data**
- Tanzania: **Paper** | **Data**
- Bangladesh: **Paper** | **Data**
- Cote d'Ivoire: **Paper** | **Data**
- Nigeria: **Paper** | **Data**

Digitizing Value Chain Finance for Smallholder Farmers **Paper**

Designing Digital Financial Services for Smallholder Families: Lessons from Zimbabwe, Senegal, Rwanda, and Cambodia **Paper**

Segmentation of Smallholder Households **Paper**
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