

# Mozambique - CGAP Smallholder Household Survey 2015, Building the evidence base on the agricultural and financial lives of smallholder households

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Report generated on: May 24, 2018

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# Sampling

## Sampling Procedure

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The CGAP smallholder household survey in Mozambique is a nationally-representative survey with a target sample size of 3,000 smallholder households. The sample was designed to provide reliable survey estimates at the national level and for the following regions:

1. North region, comprised of the provinces of Niassa, Cabo Delgado, and Nampula;
2. Centre region, comprised of Zambezia, Tete, Maica, and Sofala, Manica; and
3. South region, consisting of Inhambane, Maputo Province, Maputo City and Gaza.

### Sampling Frame

The sampling frame for the smallholder household survey is the 2009-2010 Census of Agriculture and Livestock (Censo Agro-Pecurio, CAP II) conducted by the Mozambique National Statistical Office (INE) and based on the 2007 Census of Population and Housing (2007 RGPH). CAP II is a large sample that was designed to be representative at the district level and its sample of enumeration areas (EAs) is considered as the "master sample" for the national agricultural surveys. EAs with less than 15 agricultural households (mostly in urban areas) were excluded from the sampling frame for CAP II.

### Sample Allocation and Selection

In order to take non-response into account, the target sample size was increased to 3,158 households assuming a household non-response rate of 5% observed in similar national households. The total sample size was first allocated to the three regions based on the number of agricultural households. Within each region, the resulting sample was further distributed proportionally to urban and rural areas.

The sample for the smallholder survey is a stratified multistage sample. Stratification was achieved by separating urban and rural areas within each region. Since the CAP II master sample that was used as the sampling frame for the survey is stratified by district, rural and urban areas, the rural strata of the individual districts for the CAP II master sample were collapsed up to the province level, and the same for the urban strata within each province. However, the district was still used as a sorting variable in order to provide implicit stratification by district.

At the first sampling stage the CAP II sample EAs were selected systematically with PPS within each district, rural and urban stratum, where the measure of size was the number of agricultural households in the census frame. In general if the EAs are selected with PPS at the first sampling stage, a subsample of EAs would be selected with equal probability within each stratum. However, in the case of the smallholder survey, the district strata were collapsed to the province level (separately for the rural and urban strata). Within each province the weights in CAP II vary by district, rural/urban stratum, by a factor of  $Mdh/ndh$ , where  $Mdh$  is the total number of agricultural households in the CAP II sampling frame for stratum (rural/urban)  $h$  in district  $d$  (from the RGPH 2007), and  $ndh$  is the number of sample EAs selected for CAP II in stratum  $h$  of district  $d$ .

Therefore in order to stabilize the weights within the rural and urban stratum of each province for the smallholder survey, the subsample of EAs included in the smallholder sample were selected within each stratum with probability proportional to the measure  $Mdh/ndh$ .

A household listing operation was carried out in all selected EAs to identify smallholder households and to provide a frame for the selection of 15 households per selected EA at the third stage. Households were selected in each EA with equal probability. In each selected household, the household questionnaire was administered to the head of the household, the spouse or any knowledgeable adult household member. The multiple respondent questionnaire was administered to all adult members in each selected household. In addition, in each selected household only one household member was selected using the Kish grid and was administered the single respondent questionnaire.

The full description of the sample design can be found in the user guide for this data set.

## Response Rate

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The user guide includes household and individual response rates for the CGAP smallholder household survey in Mozambique. A total of 3,041 households were selected for the sample, of which 2,782 were found to be occupied during data collection. Of these, 2,574 were successfully interviewed, yielding a household response rate of 92.5 percent.

In the interviewed households 5,502 eligible household members were identified for individual interviews. Completed interviews were conducted for 4,456 yielding a response rate of 81.0 percent for the Multiple Respondent questionnaire.

Among the 2,574 selected for the Single Respondent questionnaire, 2,209 were successfully interviewed corresponding to a response rate of 85.8 percent.

## Weighting

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The sample for the smallholder household survey is not self-weighting, therefore sampling weights were calculated. The first component of the weights is the design weight based on the probability of selection for each stage of selection. The second component is the response rate at both household and individual levels.

The design weights for households were adjusted for non-response at the household level to produce adjusted household weights. Sampling weights for the multiple respondent data file were derived from adjusted household weights by applying to them non-response rates at the individual level. For the single respondent data file, the same process was applied after taking into account the sub-sampling done within the household.

Finally, household and individual sampling weights were normalized separately at the national level so the weighted number of cases equals the total sample size. The normalized sampling weights were attached to the different data files and used during analysis.

# Questionnaires

## Overview

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Building on secondary research on the smallholder sector and discussions with stakeholders, the design process for the survey instrument began. This process involved defining the end goal of the research by:

- Drawing from existing survey instruments;
- Considering the objectives and needs of the project;
- Accounting for stakeholder interests and feedback;
- Learning from the ongoing financial diaries in country; and,
- Building from a series of focus groups conducted early on in the study.

Using this foundation, a framework for the survey instrument was developed to share with stakeholders and capture all the necessary elements of a smallholder household. The framework consisted of five main subject areas: (i) demographics, (ii) household economics, (iii) agricultural practices, (iv) mobile phones, and (v) financial services.

In order to capture the complexity inside smallholder households, the smallholder household survey was divided into three questionnaires: the Household questionnaire, the Multiple Respondent questionnaire and the Single respondent questionnaire.

The household questionnaire collected information on:

- Basic household members' individual characteristics (age, gender, education attainment, schooling status, relationship with the household head)
- Whether each household member contributes to the household income or participates in the household's agricultural activities. This information was later used to identify all household members eligible for the other two questionnaires.
- Household assets and dwelling characteristics

Both the Multiple and Single Respondent questionnaires collected different information on:

- Agricultural practices: farm information such as size, crop types, livestock, decision-making, farming associations and markets
- Household economics: employment, income, expenses, shocks, borrowing and saving habits, and investments

In addition, the Single respondent questionnaire collected information on:

- Mobile phones: attitudes toward phones, usage, access, ownership, desire and importance
- Financial services: attitudes towards financial products and services such as banking and mobile money, including ownership, usage, access and importance.

Before the start of fieldwork, all three questionnaires were pretested in all languages to make sure that the questions were clear and could be understood by respondents. The pretest took place 19 - 24 June 2015 in Maputo, Mozambique and 17 - 20 July 2015 in Inhambane, Nampula and Tete, Mozambique. In total, the pretest covered 79 households. At the end of the pretest, debriefing sessions were held with the pretest field staff and the questionnaires were modified based on the observations from the pretest. Following the finalization of questionnaires, a script was developed to support data collection on smart phones. The script was tested and validated before its use in the field.

# Data Collection

## Data Collection Dates

Start	End	Cycle
2015-07-23	2015-09-04	N/A

## Data Collection Mode

Computer Assisted Personal Interview [capi]

### DATA COLLECTION NOTES

InterMedia's local field partner conducted the recruitment of interviewers and supervisors for the main fieldwork, taking into account their language skills. Following the recruitment of 64 field staff, two training sessions were conducted in Maputo, Mozambique from 29 June 2015 to 04 July 2015 and in Nampula, Mozambique on 07-13 August 2015. Four independent field quality control staff directly hired by InterMedia also attended the training. The training consisted of instructions on interview techniques and field procedures, a detailed review of the survey questionnaires, mock interviews between participants in the classroom, and a field practice with real respondents in the areas outside the sampled EAs.

The interviewing teams carried out data collection for the survey on mobile phones. Each team consisted of one supervisor and four to five interviewers. Two staff members from InterMedia's local field partner coordinated and supervised fieldwork activities in addition to the independent quality control (QC) team hired by InterMedia. The QC team stayed with the survey teams during fieldwork to closely supervise and monitor them. Data collection took place from 23 July 2015 to 04 September 2015. During data collection, InterMedia received weekly partial data from the field which was analyzed for quality control and used to provide timely feedback to field staff.

The final data file was checked for inconsistencies and errors by InterMedia and corrections were made as necessary and where possible.

## Data Collectors

Name	Abbreviation	Affiliation
IPSOS Mozambique		

### SUPERVISION

InterMedia's local field partner recruited 64 field that included interviewers and supervisors. In addition, four independent field quality control staff were directly hired by InterMedia. Each team consisted of one supervisor and four to five interviewers. Two staff members from InterMedia's local field partner coordinated and supervised fieldwork activities and the independent quality control (QC) team hired by InterMedia oversaw the overall quality function of data collection. The QC team stayed with the survey teams during fieldwork to closely supervise and monitor them.

# Data Processing

## Data Editing

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During data collection, InterMedia received a weekly partial SPSS data file from the field which was analyzed for quality control and used to provide timely feedback to field staff while they were still on the ground. The partial data files were also used to check and validate the structure of the data file. The full data file was also checked for completeness, inconsistencies and errors by InterMedia and corrections were made as necessary and where possible.

## Other Processing

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Following the finalization of questionnaires, a script was developed using Dooblo to support data collection on smart phones. The script was thoroughly tested and validated before its use in the field.

## Data Appraisal

### Estimates of Sampling Error

The sample design for the smallholder household survey was a complex sample design featuring clustering, stratification and unequal probabilities of selection. For key survey estimates, sampling errors taking into account the design features were produced using either the SPSS Complex Sample module or STATA based on the Taylor series approximation method.





## Related Materials

### Questionnaires

#### Mozambique CGAP Smallholder Household Survey Questionnaire Single-respondent (English)

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Title Mozambique CGAP Smallholder Household Survey Questionnaire Single-respondent (English)  
Country Mozambique  
Language English  
Filename cgap\_smallholder\_household\_survey\_questionnaire\_mzo\_2015\_single\_respondent\_eng\_03\_aug\_15.pdf

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#### Mozambique CGAP Smallholder Household Survey Questionnaire Single-respondent (Portuguese)

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Title Mozambique CGAP Smallholder Household Survey Questionnaire Single-respondent (Portuguese)  
Country Mozambique  
Language Portuguese  
Filename cgap\_smallholder\_household\_survey\_questionnaire\_mzo\_2015\_single\_respondent\_por\_03\_aug\_15.pdf

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#### Mozambique CGAP Smallholder Household Survey Questionnaire Household (English)

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#### Mozambique CGAP Smallholder Household Survey Questionnaire Multi-respondent (English)

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#### Mozambique CGAP Smallholder Household Survey Questionnaire

## Multi-respondent (Portuguese)

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Title Mozambique CGAP Smallholder Household Survey Questionnaire Multi-respondent (Portuguese)  
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 Language Portuguese  
 Filename cgap\_smallholder\_household\_survey\_questionnaire\_mzo\_2015\_multi\_respondent\_por\_03\_aug\_15.pdf

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## Reports

### Mozambique CGAP Smallholder Household Survey User Guide (Portuguese)

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Title Mozambique CGAP Smallholder Household Survey User Guide (Portuguese)  
 Date 2016-02-01  
 Country Mozambique  
 Language Portuguese  
 Filename CGAP Smallholder Household Survey\_User Guide to Data Set\_MZO\_POR\_Feb 16.pdf

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### Mozambique CGAP Smallholder Household Survey Technical Paper (Portuguese)

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Title Mozambique CGAP Smallholder Household Survey Technical Paper (Portuguese)  
 Date 2016-03-01  
 Country Mozambique  
 Language Portuguese  
 Filename Mozambique CGAP Smallholder Household Survey Report\_POR.pdf

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### Understanding the Demand for Financial, Agricultural, and Digital Solutions from Smallholder Households: Insights from the Financial Diaries and Household Survey in Mozambique

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Title Understanding the Demand for Financial, Agricultural, and Digital Solutions from Smallholder Households: Insights from the Financial Diaries and Household Survey in Mozambique  
 subtitle Summary Deck  
 Author(s) CGAP  
 Date 2017-06-01  
 Country Mozambique  
 Language English  
 Description This deck is part of a series which explores the research that CGAP and partners have conducted to explore the financial needs and behaviors of smallholder households. Research was conducted as a basis for guiding financial solution providers, mobile network operators, donors and governments to design, improve, and scale solutions that address the needs of smallholder families.  
 Filename Mozambique CGAP Smallholder Household Survey Summary Deck\_Eng.pdf

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### Compreender a Procura de Soluções Financeiras, Agrícolas e Digitais, pelos Agregados Familiares de Pequenos Produtores: Baseado nos Diários Financeiros e no Inquérito a Agregados Familiares em Moçambique

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Title Compreender a Procura de Soluções Financeiras, Agrícolas e Digitais, pelos Agregados Familiares de Pequenos Produtores: Baseado nos Diários Financeiros e no Inquérito a Agregados Familiares em Moçambique  
 subtitle Summary Deck  
 Author(s) CGAP  
 Date 2017-06-01

Country	Mozambique
Language	Portuguese
Description	Esta apresentação faz parte de uma série que explora a pesquisa feita pelo CGAP e seus parceiros, para analisar as necessidades e comportamentos financeiros das famílias de pequenos produtores. Foram feitas pesquisas, como intuito de orientar os provedores de soluções financeiras, operadores de redes móveis, doadores e governos, no sentido de conceber, melhorar e massificar soluções que respondam às necessidades das famílias de pequenos agricultores.
Filename	Mozambique CGAP Smallholder Household Survey Summary Deck_Por.pdf

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## Technical documents

### Mozambique CGAP Smallholder Household Survey User Guide (English)

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Title	Mozambique CGAP Smallholder Household Survey User Guide (English)
Date	2016-02-01
Country	Mozambique
Language	English
Filename	cgap_smallholder_household_survey_user_guide_to_data_set_mzo_feb_16.pdf

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### Mozambique CGAP Smallholder Household Survey Technical Paper (English)

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Title	Mozambique CGAP Smallholder Household Survey Technical Paper (English)
Date	2016-03-01
Country	Mozambique
Language	English
Filename	Mozambique CGAP Smallholder Household Survey Report_ENG.pdf

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