

Ghana - Agricultural Integrated Survey (AGRIS) - Pilot - PME module, Ghana Pilot Survey 2018

Food and Agricultural Organization, Ghana Statistical Service,

Report generated on: January 21, 2022

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Overview

Identification

ID NUMBER

GHA_2018_AGRIS-PME_v01_EN_M_v01_A_OCS

Overview

ABSTRACT

The AGRIS Ghana Pilot test was implemented in 4 districts of the Ashanti Region (Ahafo Ano South, Asante Akim North, Ejura Sekye Dumase, and Sekyere Afram Plains) in February 2018, to collect information on:

- Crop and livestock production as well as data on farm characteristics, diversification and structures;
- Farm revenues and expenses;
- Type of labour used by the agricultural holding;
- Farming practices and their linkages with the natural environment;
- Farm machinery, equipment and assets.

The general objective of the pilot was to customize AGRIS instruments and methodologies for adoption as a standard tool to efficiently gather relevant and reliable agricultural data for policy making and monitoring the Sustainable Development Goals (SDGs).

The specific objectives of the AGRIS Ghana pilot were as follows:

- Elaborate the overall set up of AGRIS in Ghana;
- Customize the content of the AGRIS questionnaire to the Ghanaian context;
- Assess the overall efficiency of the customized, integrated questionnaires and their feasibility in terms of length, flow, use of Computer Assisted Personal Interviewing (CAPI), and integration of core and rotating modules;
- Assess the difficulty and relevance of each question, each section and each generic questionnaire for different types of holdings;
- Test the use of Survey Solutions software to implement CAPI data collection, and the current version of the CAPI questionnaires;
- Assess the relevance of the training material developed to train survey enumerators and supervisors.

KIND OF DATA

Sample survey data [ssd]

UNITS OF ANALYSIS

Agricultural holdings in the household sector

Scope

NOTES

The Core module is a questionnaire developed with the main objective of measuring agricultural production (crop, livestock, and other on-farm production). It also covers essential structural data on the characteristics of the agricultural holding and household and data on agricultural inputs and production methods.

The Core questionnaire with the Production Method and Environment (PME) module was tested in Ahafo Ano South. The PME module collects data on the production processes adopted by the holding, and their environmental impact.

KEYWORDS

Agricultural Integrated Surveys, Agricultural production, Labour input in agriculture, Economy, Production methods, Environment, Farm machinery and assets, We can develop one for AGRIS

Coverage

GEOGRAPHIC COVERAGE

District level coverage. The 4 district covered by the survey were:

- Ahafo Ano South (CORE+PME)
- Asante Akim North (CORE+MEA)
- Ejura Sekye Dumase (CORE+LABOUR)
- Sekyere Afram Plains (CORE+ECO)

UNIVERSE

All households, agricultural or not, in the 4 surveyed districts.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Food and Agricultural Organization	United Nations
Ghana Statistical Service	Ministry of Finance and Economic Planning

OTHER PRODUCER(S)

Name	Affiliation	Role
Ministry of Food and Agriculture	Government Of Ghana	Technical Support

FUNDING

Name	Abbreviation	Role
Bill & Melinda Gates Foundation	BMGF	Financial Support

OTHER ACKNOWLEDGEMENTS

Name	Affiliation	Role
Global Strategy to Improve Agricultural and Rural Statistics (FAO)	United Nation	Technical Support

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Food and Agriculture Organization of the United Nations	FAO	United Nations	Metadata producer

Ghana Statistical Service	GSS	Ministry of Finance and Economic Planning	Metadata producer
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DATE OF METADATA PRODUCTION

2019-01-14

DDI DOCUMENT ID

DDI_GHA_2018_AGRIS-PME_v01_EN_M_v01_A_OCS_FAO

Sampling

Sampling Procedure

Definition of agricultural holding

As stated in the manual of the World Programme for the Census of Agriculture (FAO, 2015), an agricultural holding is defined as an economic unit of agricultural production under single management comprising all livestock and poultry kept, and all land used wholly or partly for agricultural production purposes, without regards to title, legal form, or size. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency (FAO, 2015).

1. The Sampling Frame

The initial plan for the pilot survey was to consider as statistical units, agricultural holdings covering both the household and the non-household sectors, as proposed in the AGRIS methodology.

For holdings in the household sector, no updated list of agricultural households in the country was available, and therefore a sampling frame needed to be established. To do so, the 2010 Population and Housing Census (PHC) was used to build a frame of EAs which were the primary sampling units (PSUs) of the adopted sampling design. After selecting the sample of PSUs in the four districts of interest, a complete list of holdings in the selected EAs was built. All households, agricultural or not, present in the selected EAs were listed.

Holdings in the non-household sector are by definition, economic units such as commercial farms and government institutions engaged in agricultural production. GSS and MoFA provided a list of these holdings to be used as sampling frame. Therefore, the plan was to use as the overall sampling frame a multiple frame composed of the two lists described above (one for the household sector and one for the non-household sector). However, after further discussion and evaluation, it was determined that the list of holdings in the non-household sector could not be considered as a reliable sampling frame for the targeted units. As a consequence, the data collected for the 80 non-household units could not be analysed to represent holdings in the nonhousehold sector.

2. The Sampling design

A stratified two-stage sampling design was used for the holdings in the household sector. The PSUs were the EAs and the secondary sampling units (SSU) were the agricultural households.

3. The Sampling Size

For holdings in the household sector, the calculation of sample size was performed fixing the minimum degree of precision required for the final estimates of main variables of interest. The variable considered to determine the sample size was the area of the agricultural land owned by the households. This information had been collected during the 2012-2013 Ghana Living Standards Survey 6 (GLSS6). Therefore, data from this survey was used to estimate the coefficient of variation (CV) of the variable of interest in the chosen four districts.

It should be noted that the estimation domain of the GLSS6 was the region. For that survey, a two-stage sampling design was used and the PSUs (EAs) were selected in each region with the probability proportional to size (PPS). The measure of size was given by the number of individuals in each region, provided for the chosen districts for the AGRIS-Ghana pilot survey by the GLSS6. For the estimation of the CV of the households' agricultural land, it was assumed that the EAs sampled in GLSS6 and located in the target districts were selected in these districts with the same method of selection (PPS). Thus, the households included in the sample were supposed to have been selected with a two-stage sampling design.

The formula for the computation of the sampling size can be consulted in the final report of the survey.

The number of households to be surveyed in each PSU is fixed to 10. Therefore, the size of the sample of PSU is the size of the sample of the households divided by 10.

4. Agricultural holding definition

As stated in the manual of the World Programme for the Census of Agriculture (FAO, 2015), an agricultural holding is defined as an economic unit of agricultural production under single

management comprising all livestock and poultry kept, and all land used wholly or partly for agricultural production purposes, without regards to title, legal form, or size. Single management may be exercised by an individual or household, jointly by two or more individuals or households, by a clan or tribe, or by a juridical person such as a corporation, cooperative or government agency (FAO, 2015).

Deviations from Sample Design

As mentioned in the sampling procedure section, holdings in the non-household sector were not included in the survey, as per initial plan, due to a problem in the listing frame provided by the Ghana Statistical Service.

Response Rate

Out of 370 households planned for interview, 366 were interviewed (98.91% response rate).

Weighting

All the formulas used to compute sampling weights are mentioned in the final report of the survey.

Wights were adjusted for non-responses.

Questionnaires

Overview

The AGRIS Core module integrates with the Production Methods and Environment module (Core+Pme) collected information on household and holding characteristics, agricultural production and practices used for agricultural production by holdings.

A full appraisal of the contents of the questionnaires can be get by downloading the questionnaires in the documentation section.

Data Collection

Data Collection Dates

Start	End	Cycle
2018-01-29	2018-02-12	N/A

Time Periods

Start	End	Cycle
2017-03-01	2018-02-28	N/A

Data Collection Mode

Computer Assisted Personal Interview [capi]

Data Collection Notes

Data collection took place from the 29th of January 2018 and lasted for approximately 28 days. Teams were deployed in the 4 surveyed districts (Ahafo Ano South, Asante Akim North, Ejura Sekye Dumase, Sekyere Afram Plains) in the Ashanti Region. A total number of 19 enumerators and 6 supervisors were engaged for data collection. Enumerators were organized in 6 teams:

- Two teams were assigned to Sekyere Afram Plains where data on the Core+Eco modules were collected
- Two teams were assigned to Asante Akim North where data on the Core+Mea modules were collected
- One team was assigned to Ahafo Ano South where data on the Core+Pme modules were collected
- One team was assigned to Ejura Sekye Dumase where data on the Core+Labour modules were collected

Prior to data collection, a two-weeks long enumerator training was held to provide training on the use of tablet for computer assisted personal interviewing (CAPI), and on the contents of the questionnaires.

The average duration of interviews was approximately 2 hours.

Data collection was also supervised by personnel from Ghana Statistical Service and the Ministry of Agriculture. The few technical issues encountered during data collection are developed in the final report of the pilot survey.

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Data Collectors

Name	Abbreviation	Affiliation
Ghana Statistical Service	GSS	Ministry of Finance and Economic Planning
Ministry of Food and Agriculture	MoFA	Government Of Ghana

Supervision

19 enumerators engaged in the data collection exercise. They have been organized in 6 teams, each one of them supervised by a team leader.

Data collection was performed using Survey Solutions, a CAPI software that gives the possibility of including various quality control steps along the data collection process.

After completing a CAPI interview, the enumerator was supposed to synchronize his/her tablet in order to submit the interview to his/her supervisor. The supervisor would then check the quality of data collected and decide on whether accepting or rejecting the completed case. When a supervisor was opting for the rejection of an interview, the interview would be sent back to the interviewer tablet in order to be corrected as requested. Contrarily, when the supervisor was accepting an interview, this would be sent to the headquarter for his/her final validation. This process would continue until the quality of data collected was considered to be good.

Data Processing

Data Editing

The first level of data quality checks was implemented through Survey Solutions, which allows the programmer to develop a questionnaire containing skips and validation rules to minimize errors and inconsistencies in the collected data.

After data collection, data editing and preparation was performed using STATA.

Data Appraisal

Estimates of Sampling Error

Details on the estimates of sampling error are provided in the final survey report.