

Nigeria - National Agricultural Sample Survey 2023

National Bureau of Statistics (NBS)

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Identification

SURVEY ID NUMBER

NGA_2023_NASS_v01_M_v01_A_ESS

TITLE

National Agricultural Sample Survey 2023

SUBTITLE

Agricultural Household Survey

ABBREVIATION OR ACRONYM

NASS 2023

COUNTRY

Name	Country code
Nigeria	NGA

STUDY TYPE

Agricultural Survey [ag/oth]

SERIES INFORMATION

The National Agriculture Sample Survey (NASS) 2023 is the second round of NASS surveys, previously conducted in 2010/2011. NASS 2023 was conducted by the National Bureau of Statistics (NBS), in collaboration with Food and Agriculture Organization (FAO), Federal Ministry of Agriculture and Food Security (FMAFS), and the World Bank. The survey covers all agricultural activities in the country at the household, establishment (corporate farm), and community levels, capturing information on crop production, fishery, forestry, livestock activities, and farmgate prices.

ABSTRACT

NASS is designed to provide accurate and up-to-date agricultural statistics that allow policymakers, researchers, and development partners to make informed decisions that directly impact the well-being of farmers, rural communities, and the broader economy. These statistics are essential for enhancing food security, improving productivity, and addressing regional disparities in agricultural performance. Additionally, robust agricultural data are vital in supporting Nigeria's efforts to diversify its economy from oil dependency. By identifying key areas for investment, such as crop production, livestock management, and agro-processing, data can guide both public and private sector investments to boost agricultural output and expand exports. Moreover, the survey contributes to tracking progress toward national goals while supporting Nigeria's efforts to meet global commitments like the Sustainable Development Goals (SDGs). Hence, NASS provides useful data for understanding the state of the agricultural sector and offers essential production and structural data to support evidence-based planning and implementation of agricultural programs vital for addressing current economic challenges and enhancing the livelihood of many Nigerians.

This survey is also essential for monitoring and evaluating the effectiveness of existing agricultural programs and ensuring that resources are allocated efficiently. Capturing detailed data on agriculture practices, outputs, and challenges, the survey supports the planning and implementation of initiatives aimed at improving productivity, enhancing food security, and adapting to challenges like climate change and market fluctuations.

The objectives of the survey are to:

- i. provide data on agricultural production in 2022/2023 and the structure of the sector as a whole to assist the government in policy formulation and programme planning;
- ii. effectively and efficiently provide appropriate agricultural information to increase public awareness; and
- iii. provide data that could be used to compute agricultural sector contribution to the Gross Domestic Product (GDP).

KIND OF DATA

Sample survey data [ssd]

UNIT OF ANALYSIS

Households

Scope

NOTES

The household survey component of National Agricultural Sample Survey (NASS) covered the following subject areas:

- General Household/Holding Identification
- Crop Farming
- Livestock/ Poultry farming
- Fisheries
- Forestry
- Apiary production (Beekeeping)
- Labour

TOPICS

Topic	Vocabulary
Agricultural Production	World Bank

KEYWORDS

Keyword
Agricultural census
Agricultural household
Crops
Livestock
Fishery
Forestry
Farming
Plots
Poultry
Agricultural survey

Coverage

GEOGRAPHIC COVERAGE

The National Population Commission (NPC) provided the sampling frame of Enumeration Areas (EAs), newly demarcated for the proposed 2023 Housing and Population Census. This was used as the primary sampling frame. Although data were collected across the 36 states and the Federal Capital Territory (FCT), only 767 out of the 774 Local Government Areas (LGAs) were covered due to security challenges. The affected states/LGAs are Borno state (Monguno, Kukawa and Abadam LGAs) and Orlu, Orsu, Oru East, and Njaba LGAs in Imo state. The number of EAs covered varied from state to state depending on the number of Agricultural EAs and LGAs.

UNIVERSE

The final sampling units used were agricultural households involved in crop/ livestock farming, and fishery households.

Producers and sponsors

PRIMARY INVESTIGATORS

Name	Affiliation
National Bureau of Statistics (NBS)	Federal Government of Nigeria (FGN)

PRODUCERS

Name	Abbreviation	Affiliation	Role
Federal Ministry of Agriculture and Food Security (formerly Federal Ministry of Agriculture and Rural Development)	FMAFS (formerly FMARD)	Federal Government of Nigeria (FGN)	Technical support
National Population Commission	NPC	Federal Government of Nigeria (FGN)	Technical support

FUNDING AGENCY/SPONSOR

Name	Abbreviation	Role
The World Bank Group	WBG	Financial assistance

OTHER IDENTIFICATIONS/ACKNOWLEDGMENTS

Name	Affiliation	Role
Federal Ministry of Finance	Federal Government of Nigeria	Supervision
Food and Agriculture Organization of the United Nations	United Nations	Technical assistance
The 50x2030 Initiative		Technical assistance
World Bank		Technical assistance

Sampling

SAMPLING PROCEDURE

The final sampling units used were agricultural households involved in crop/ livestock farming, and fishery households. The sampling method of NASS-household is a stratified three-phased sampling as follows:

- First phase: Stratified Probability Proportional to Size (PPS) selection of 80 EAs per LGA
- Second phase: systematic sub-sampling of 40 EAs per LGA for the extended listing
- Third phase: two-stage sampling for NASS-household

Third-phase details:

- i. First stage: Stratification of EAs into agricultural and non-agricultural EAs drawn from the 40 EAs listed in each LGA
- ii. Second stage: Systematic sampling of ten farming households (crop/ livestock farming) and additional fishery-only households in fishery-intensive LGAs (18 in total) up to a maximum of 12 households per EA. This selection was stratified by sorting the listed farming households according to several agricultural characteristics, including type of farming activity, number of plots, livestock numbers (in tropical livestock units), and gender of household head.

Sample Size and Allocation

Nationally, a total of 15 591 EAs were selected across the 36 States of the Federation and FCT for the NASS household survey. The sample was distributed across LGAs based on the estimated total number of plots per LGA. Within each LGA, the sample was further allocated between urban and rural areas in proportion to the estimated agricultural population. In the selected EAs, 152 485 households were finally sampled.

WEIGHTING

The final probability of selection for each Enumeration Area (EA) is the product of its selection probabilities in the first and second sampling phases. The design weight was defined as the inverse of the final selection probability. These design weights were further adjusted for non-response and scaled to the updated frame population, providing the final weights used to produce estimates (means, totals, proportions, etc.) based on standard Horvitz-Thompson estimators.

It is important to note that the sampling weights were calibrated using preliminary household counts obtained from the cartographic work of the National Population Commission (NPC).

In the microdata, the variable "nasc_listing_weight" represents the household listing weight.

Data collection

DATES OF DATA COLLECTION

Start	End
2022-07-06	2022-09-09

DATA COLLECTION MODE

Computer Assisted Personal Interview [capi]

SUPERVISION

Two rounds of monitoring exercise were carried out in addition to the remote monitoring of data collection. Trainers who also served as monitors, independent monitors, and coordinators participated in the monitoring exercise. They accompanied the field teams to monitor the kickstart of the survey for the first round of monitoring. The general roles of the monitors were to ensure proper compliance with the established rules and procedures by the enumerators, ensure that high-quality data were collected, ensure all farms within the household were measured, and suggest plausible solutions to problems where necessary.

The second round of monitoring was in the middle of the fieldwork. Monitors were further tasked with following up with states on the number and status of malfunctioning CAPI and GPS devices to promptly call for replacements, resolving technical issues, and visiting all the Corporate Farms that enumerators reported to have closed down, not in existence, could not be located, or had misclassification of activities to determine the veracity of their claims.

DATA COLLECTION NOTES

Training for the survey was conducted in three phases:

- Training of Trainers (ToT) at the national level, held in Abuja. Participants included staff from the National Bureau of Statistics (NBS), the Federal Ministry of Agriculture and Rural Development (FMARD), the National Population Commission (NPC), and Coordinators from the World Bank and FAO. The training lasted eight (8) days. Participants took two tests to assess their understanding of the training materials and their overall performance.

- Training of Enumerators (ToE) at the state level. Participants included enumerators, NBS Zonal Controllers, NBS State Officers, staff from State Statistical Agencies and State Ministries of Agriculture, independent monitors, and coordinators. The training, which also lasted eight days, was implemented in two phases:

1. The first three days targeted enumerators responsible for the corporate farm questionnaires. This session concluded with the commencement of lodgement of corporate farm questionnaires.
2. The remaining five days were devoted to intensive training for enumerators administering the household and price questionnaires. Enumerators conducting household interviews also administered price questionnaires at the community level. Participants completed two separate examinations to assess their knowledge and comprehension of the training content.

- Training of Data Editors and Data Assistants, also held in Abuja, focused on the household and price questionnaires. The objective was to ensure that editors fully understood all sections of the questionnaires before data processing began.

Teams were constituted in each state to carry out the fieldwork. Each team consisted of a team lead and a teammate, and covered an average of 20 Enumeration Areas (EAs). Some teams operated across more than one Local Government Area (LGA). Each enumerator interviewed five (5) households per EA over two and a half days. Cultivated plots belonging to sampled households that were not too large or located more than two hours from the dwelling were measured on the last day in the EA.

For corporate farms, workloads varied by state. On average, each enumerator covered about 50 corporate farms, depending on availability, and lodged approximately 15 questionnaires per week. Data collection for both household and corporate farm components lasted 50 days in total.

The coordination of the entire survey process was carried out by the survey management team in collaboration with stakeholders from participating MDAs, ensuring smooth field operations and adherence to established procedures.

For the Household and Producer Price questionnaires, data were collected electronically using CAPI devices, allowing for real-time online transmission. In contrast, enumerators engaged for the Corporate Farm component manually retrieved lodged questionnaires from establishments at agreed dates within the allotted timelines.

DATA COLLECTORS

Name	Abbreviation	Affiliation
National Bureau of Statistics	NBS	Federal Government of Nigeria (FGN)

Questionnaires

QUESTIONNAIRES

The NASS household questionnaire served as a meticulously designed instrument administered within selected households to gather comprehensive data.

The questionnaire was structured into the following sections:

- 0A. HOLDING IDENTIFICATION
- 0B. ROSTER OF HOUSEHOLD MEMBERS
- 0C. AGRICULTURAL ACTIVITIES
- 0D. AGRICULTURALACTIVITIES
- 2. PLOT ROSTER AND DETAILS
- 3. CROP ROSTER
- 1A: TEMPORARY (NON-VEGETABLE) CROP PRODUCTION
- 1H: TEMPORARY CROP PRODUCTION (VEGETABLE CROPS)
- 1B: TEMPORARY CROP DESTINATION
- 2A: PERMANENT CROP PRODUCTION
- 2B: PERMANENT CROP DESTINATION
- 4: SEED AND PLANT USE
- 3C: INPUT USE
- 2(DRY SEASON): PLOT ROSTER AND DETAILS
- 3(DRY SEASON): CROP ROSTER
- 1A(DRY SEASON): TEMPORARY (NON-VEGETABLE) CROP PRODUCTION - DRY SEASON
- 1H(DRY SEASON): TEMPORARY CROP PRODUCTION (VEGETABLE CROPS) - DRY SEASON
- 1B(DRY SEASON): TEMPORARY CROP DESTINATION - DRY SEASON
- 4(DRY SEASON): SEED AND PLANT USE - DRY SEASON
- 3C(DRY SEASON): INPUT USE - DRY SEASON
- 4A: LIVESTOCK IN STOCK
- 4B: CHANGE IN STOCK- LARGE AND MEDIUM-SIZED ANIMALS
- 4C: CHANGE IN STOCK-POULTRY
- 4G: MILKPRODUCTION
- 4H: EGG PRODUCTION
- 4I: OTHERLIVESTOCKPRODUCTS
- 4J:APIARYPRODUCTION (BEEKEEPING)
- 5A: FISH FARMING/AQUACULTUREPRODUCTION
- 6A: FISH HUNTING/CAPTURE
- 7A: FORESTRYPRODUCTION
- 9: LABOUR
- 2_GPS.PLOT GPS MEASUREMENT
- 99. END OFTHE SURVEY

Data Processing

DATA EDITING

Data processing and analysis involved data cleaning, data analysis, data verification/validation, and table generation. The World Food Programme (WFP), the Food and Agricultural Organization of the United Nations (FAO), and NBS carried out the data processing and analysis for both the household and corporate farms questionnaires. The corporate farm questionnaire involved manual editing as well as data entry.

****STATISTICAL DISCLOSURE CONTROL****

To safeguard the confidentiality of household information, rigorous anonymization techniques have been employed on the edited microdata. This process involved the removal of all direct identifiers, such as names, GPS locations, and specific addresses. Additionally, geographic information below the level of Local Government Area (LGA) has been excised to prevent

any potential identification of individuals or households based on their location.

Furthermore, a masking technique (local suppression algorithms) has been implemented on the quasi-identifying variables using the R package `sdcmicro`. This ensures that even subtle patterns or combinations of variables that could potentially lead to re-identification are obfuscated, thereby enhancing the overall security and privacy of the dataset.

Data Appraisal

ESTIMATES OF SAMPLING ERROR

Given the complexity of the sample design, sampling errors were estimated through resampling approaches (Bootstrap/Jackknife).

Access policy

CONTACTS

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CONFIDENTIALITY

The confidentiality of the individual respondent is protected by law (Statistical Act 2007). This is published in the Official Gazette of the Federal republic of Nigeria No. 60 vol. 94 of 11th June 2007. See section 26 para.2. Punitive measures for breeches of confidentiality are outlined in section 28 of the same Act.

ACCESS CONDITIONS

A comprehensive data access policy has been developed by NBS, however section 27 of the Statistical Act 2007 outlines the data access obligation of data producers which includes the release of properly anonymized micro data.

CITATION REQUIREMENTS

National Bureau of Statistics, Nigeria, National Agricultural Sample Survey (NASS 2023)-v1.0

ACCESS AUTHORITY

Name	Affiliation	Email	URL
National Bureau of Statistics (NBS)	Federal Government of Nigeria (FGN)	feedback@nigerianstat.gov.ng	www.nigerianstat.gov.ng

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DISCLAIMER

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Metadata production

DDI DOCUMENT ID

DDI_NGA_2023_NASS_v01_M_v01_A_ESS_FAO

PRODUCERS

Name	Abbreviation	Affiliation	Role
National Bureau of Statistics	NBS	Federal Government of Nigeria	Producer
Federal Ministry of Agriculture and Food Security (formerly Federal Ministry of Agriculture and Rural Development)	FMAFS(formerly FMARD)	Federal Government of Nigeria	Contributor
Statistics Division	ESS	Food and Agriculture Organization of the United Nations	Metadata adapted for FAM

Data Dictionary

Data file	Cases	Variables
1_households This dataset contains the administrative identification data, demographic information as well as the agricultural activities data of the households.	143105	254
2_hh_member This dataset contains the roster details i.e. list of HH members of interviewed households.	710132	17
3_Plot_mainSeason This dataset contains information of the cultivated plot: plot manager, irrigation, greenhouse, and how decisions are made on the plot.	273887	27
4_Crop_mainSeason This dataset contains the types of crops cultivated on the listed plots	480393	248
5_Harvest_mainSeason This dataset contains the harvested quantity of cultivated crops.	334133	68
6_Permanent_Crops The dataset contains the fertilizers, pesticides, insecticides or herbicides used	99775	75
7_Harvested_PermCrops The dataset contains information on the permanent harvested crops. and quantity	56359	69
8_Seed_use_mainSeason This dataset contains information on the temporary crops type and seeds used	414049	21
9_Input_use_mainSeason This dataset contains the Quantity of input used by the HH (Kg) in the agric season	321103	9
10_Plots_drySeason This file contains information on the Tenure Modality, Mode of transportation,	26524	25
11_Crops_drySeason This file contains information on crops cultivated during the dry season	34891	220
12_Harvest_drySeason This file contains information on harvested crops from the dry season	18012	69
13_Seed_use_drySeason This file contains information on seeds cultivated during the dry season	31473	17
14_Input_use_drySeason This file contains information on Input use during the dry season	30787	8
15_Livestock This file contains information on livestock currently kept by the household	316286	70
16_Livestock_products This file contains information on livestock products	18652	13
17_Fish_Farming This file contains information on fish farming activities by the household in the past 12 months.	3761	13
18_Fish_Capture This file contains information on fish capture activities by the household in the past 12 months.	13326	18
19_Forestry_production This file contains information on fish farming activities Forestry Production in the past 12 months.	34035	14
20_Labor This file contains information on labour activities	621618	15
21_Holdings	3856	8