

Cambodia - Cambodia Agriculture Survey 2023

**National Institute of Statistics (NIS), Ministry of Planning, Ministry of Agriculture,
Forestry and Fishery (MAFF)**

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Identification

SURVEY ID NUMBER

KHM-NIS-CAS-2023-v1.0

TITLE

Cambodia Agriculture Survey 2023

TRANSLATED TITLE

កម្ពុជា កសិកម្ម អន្តរាគមន៍ ឆ្នាំ ២០២៣

COUNTRY

Name	Country code
Cambodia	KHM

STUDY TYPE

Agriculture Integrated Survey [hh/nhh/agris]

SERIES INFORMATION

The Cambodia Agriculture Survey (CAS) 2023, conducted during November-December 2023, was a comprehensive statistical undertaking for the collection and compilation of information on crop cultivation, livestock and poultry raising, aquaculture and capture fishing, agricultural economy as well as adaptation strategies of the holding to shocks, and the Food Insecurity Experience Scale. The survey was conducted by two institutions from the Royal Government of Cambodia: the National Institute of Statistics (NIS) of the Ministry of Planning and the Ministry of Agriculture, Forestry and Fisheries (MAFF), and with technical support from the Food and Agriculture Organization of the United Nations (FAO).

CAS 2023 was developed under the scope of “The 50x2030 Initiative to Close the Agricultural Data Gap”, a multi-donor initiative implemented through a unique partnership between the World Bank, FAO and the International Fund for Agricultural Development (IFAD), with the aim of building national statistical capacity and establishing efficient and durable national agricultural data collection systems.

ABSTRACT

CAS 2023 was a comprehensive statistical undertaking for the collection and compilation of information on crop cultivation, livestock and poultry raising, aquaculture and capture fishing, agricultural economy, adaptation strategies of the holding to shocks, and the Food Insecurity Experience Scale. The National Institute of Statistics (NIS) of the Ministry of Planning (MOP), and the Ministry of Agriculture, Forestry and Fisheries (MAFF), were the responsible government ministries authorized to undertake the CAS 2023. While NIS had the census and survey mandate, the MAFF was the primary user of the data produced from the survey. Technical support was also provided by the Food and Agriculture Organization of the United Nations (FAO).

The main objective of the CAS was to provide data on the agricultural situation in the Kingdom of Cambodia, to be utilized by planners and policy-makers. Specifically, the survey data are useful in:

1. Providing an updated sampling frame in the conduct of agricultural surveys;
2. Providing data at the country and regional level, with some items available at the province level;
3. Providing data on the current structure of the country's agricultural holdings, including cropping, raising livestock and poultry, and aquaculture and capture fishing activities.

The data collected and generated from this survey effort will help reflect progress towards the 2030 Sustainable Development goals for the agricultural sector, focusing on:

- Goal 1: End poverty in all forms everywhere.
- Goal 2: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.
- Goal 5: Achieve gender equality and empower all women and girls.

KIND OF DATA

Sample survey data [ssd]

UNIT OF ANALYSIS

Household agricultural holdings

Version

VERSION DESCRIPTION

v1.0: Edited, anonymous dataset for public distribution (Public Use File)

VERSION DATE

2025-03-25

Scope

NOTES

The questionnaire collected data on several aspects of the agricultural holding, including demographic information about the holder, any co-holders and all household members, crop production activity, livestock and poultry raising, aquaculture activity, capture fishing activity, economy, adaptation strategies of the holding to shocks, and the household's Food Security Experience Scale status. To avoid respondent burden, the CAS 2023 did not contain any additional modules due to being undertaken within a Census year.

The household survey was conducted from 11-25 December 2023. As 2023 was an agricultural census year and a census of juridical holdings was undertaken, no juridical holding interviews were completed during the survey.

TOPICS

Topic	Vocabulary
Agricultural Production	World Bank
Food Insecurity Experience Scale	World Bank

KEYWORDS

Keyword
Agricultural production
Crops
Livestock
AGRISurvey
Agricultural practices
Agricultural households
Aquaculture
Capture fishing

Coverage

GEOGRAPHIC COVERAGE

The CAS 2023 provides national coverage.

The national territory is divided in four Regions or Zones (Coastal Region, Plains Region, Plateau and Mountain Region, and Tonle Sap Region) and 25 Provinces (Banteay Meanchey, Battambang, Kampong Cham, Kampong Chhnang, Kampong Speu, Kampong Thom, Kampot, Kandal, Kep, Koh Kong, Kratie, Mondul Kiri, Otdar Meanchey, Pailin, Phnom Penh, Preah Sihanouk, Preah Vihear, Prey Veng, Pursat, Ratanak Kiri, Siem Reap, Stung Treng, Svay Rieng, Takeo, and Tboung Khmum).

UNIVERSE

Agricultural households, i.e. holdings in the household sector that are involved in agricultural activities, including the growing of crops, raising of livestock or poultry, and aquaculture or capture fishing activities. A minimum threshold was not considered to determine a household's engagement in the above mentioned activities.

Producers and sponsors

PRIMARY INVESTIGATORS

Name	Affiliation
National Institute of Statistics (NIS), Ministry of Planning	Royal Government of Cambodia
Ministry of Agriculture, Forestry and Fishery (MAFF)	Royal Government of Cambodia

PRODUCERS

Name	Affiliation	Role
Food and Agriculture Organization of the United Nations	United Nations	Technical assistance in the design, implementation and dissemination of CAS 2023
Ministry of Economy and Finance	Royal Government of Cambodia	Provided budgetary support
Ministry of Water Resources and Meteorology	Royal Government of Cambodia	Technical Committee member
Ministry of Industry, Science, Technology and Innovation	Royal Government of Cambodia	Technical Committee member
Ministry of Land Management, Urban Planning and Construction	Royal Government of Cambodia	Technical Committee member
Council of Ministers	Royal Government of Cambodia	Technical Committee member

FUNDING AGENCY/SPONSOR

Name	Abbreviation
Royal Government of Cambodia	RGC
Food and Agriculture Organization of the United Nations	FAO
World Bank	WB
International Fund for Agricultural Development	IFAD

Sampling

SAMPLING PROCEDURE

The sampling approach for the CAS 2023 relied fully upon the sampling procedure of CAS 2022 and CAS 2021 before it, utilizing a panel approach. The CAS 2021 had used statistical methods to select a representative sample of enumeration areas (EAs) throughout Cambodia from the 2019 General Population Census of Cambodia Sampling Frame. Households within these EAs were then screened for any agricultural activity. Using this basic information, the agricultural households were stratified and sampled for additional data collection.

Enumerators along with field and data supervisors were mobilized in all provinces and trained for this undertaking. All enumerators and supervisors (337 enumerators, 46 field supervisors and 46 data supervisors) were existing staff of NIS or MAFF. The collaborative effort between these two ministries was consistent throughout the CAS project, with staff from both organizations contributing from the design of the survey to the data collection and analysis.

For the CAS 2023, the 2019 General Population Census Sampling Frame was utilized, similarly to previous survey rounds. This frame consisted of around 14,500 villages and 38,000 Enumeration Areas (EAs). For each village, the following information was available: province, district, commune, type (rural/urban), number of EAs and number of households. The target population comprised the households that were engaged in agriculture, fishery and/or aquaculture. Given their low number of rural villages, the following districts were excluded from the frame:

- Province Preah Sihanouk, District Krong Preah Sihanouk
- Province Siem Reap, District Krong Siem Reap

- Province Phnom Penh, District Chamkar Mon
- Province Phnom Penh, District Doun Penh
- Province Phnom Penh, District Prampir Meakkakra
- Province Phnom Penh, District Tuol Kouk
- Province Phnom Penh, District Ruessei Kaev
- Province Phnom Penh, District Chhbar Ampov

Since the number of rural households per EA was not known from the 2019 census, to calculate the number of rural households in each province, the sum of the households in the villages that were classified as rural was computed. The listing operation in each sampled EA was conducted for the CAS 2021 to identify the target population, i.e., the households engaged in agricultural activities.

For this survey, there was no minimum threshold set to determine a household's engagement in agricultural activities. This differs from the procedures used during the 2013 Agriculture Census (and that would be used in the 2023 Agriculture Census later), in which households were eligible for the survey if they grew crops on at least 0.03 hectares and/or had a minimum of 2 large livestock and/or 3 small livestock and/or 25 poultry. The procedure used in the CAS, which had no minimum land area or livestock or poultry inventory, allowed for smaller household agricultural holdings to have the potential to be selected for the survey. However, based on the sampling procedure indicated below, household agricultural holdings with larger land areas or more livestock or poultry were identified and associated with different sampling strata to ensure the selection of some of them.

The CAS 2023 used a two-stage stratified sampling procedure, with EAs as primary units and households engaged in agriculture as secondary units. Overall, 1,381 EAs and 12 agricultural households per each EA were selected, for a total planned sample size of 16,572 households. The 1,381 EAs were allocated to the provinces (statistical domains) proportionally to the number of rural households. To select the EAs within each province, the villages were ordered by district, commune, and then by type of village (Rural-Urban). Systematic sampling was then performed, with probability proportional to size (number of households). After two years of attrition, the total effective sample size of the survey was 15,323 agricultural households.

WEIGHTING

The sample design and stratification procedures detailed above resulted in agricultural households having different probabilities of selection. With this under consideration, a sampling weight was calculated for each agricultural household in the sample and applied to that record's reported data. The CAS 2023 weights were then corrected for non-response and attrition, and calibrated using the number of agricultural households by province obtained through the Census of Agriculture Cambodia 2023.

Data Collection

DATES OF DATA COLLECTION

Start	End	Cycle
2023-12-11	2023-12-25	Data collection for household holdings

TIME PERIODS

Start date	End date
2022-07-01	2023-06-30

DATA COLLECTION MODE

Computer Assisted Personal Interview [capi]

SUPERVISION

All data in the CAS 2023 were collected by trained enumerators who were selected among existing National and Provincial staff of NIS and MAFF based on qualifying tests. Field operations included training of all supervisors and enumerators, data collection and supervision. Central and field staff from the NIS and MAFF were trained before they undertook the data collection and supervision process. There were two levels of training, conducted separately including (a) training of trainers, with NIS and MAFF central office staff serving as data supervisors and field supervisors; and (b) training of household data collection enumerators. All field officials including supervisors at all levels were trained extensively in concepts, definitions and procedures for data collection.

Data Supervisors were responsible for conducting data quality control checks. There were 46 data supervisors for the project, all were staff members from NIS. Field Supervisors were responsible for assisting with enumerator issues in the field, encouraging good relationships with village contacts and promoting cooperation from agricultural household respondents. There were 46 field supervisors for the project, with 24 hired from MAFF and 22 hired from NIS. Enumerator staff included 337 staff, among these were 197 from NIS and 140 from MAFF from province and district level staff. Including field and data supervisors, a total of 429 staff were involved in the data collection effort, although additional staff were trained and maintained as reserve staff for the project not included in these totals. Additionally, 11 NIS staff in Phnom Penh were trained in the Headquarters Tools of Survey Solutions, carrying out the final approval process for the submitted interviews.

The accuracy of the final output of the CAS 2023 depends on the quality of the data collection from the household holdings enumerated. There are several levels of supervision and channels of communication in the CAS, as well comprehensive guidelines, for monitoring progress and for early detection of any problem in data collection. The continued use of CAPI (Computer-Assisted Personal Interviews) for data collection allowed for timely monitoring of the data flow and data quality.

DATA COLLECTION NOTES

The 12-month period prior to 1 July 2023 (i.e., from 1 July 2022 to 30 June 2023) was used as the reference period for the data collection effort. However, the reference period for some of the items was different from the time period specified, and is thus indicated in the questionnaire. For example, for some livestock items, the number of animals on a holding is collected with the day of 1 July 2023 as the reference date.

A total of 429 staff (including 337 enumerators, 46 field supervisors and 46 data supervisors) completed data collection on a sample of 15,323 household holdings across the 25 provinces of Cambodia.

DATA COLLECTORS

Name	Abbreviation	Affiliation
National Institute of Statistics (NIS), Ministry of Planning	NIS	Royal Government of Cambodia
Ministry of Agriculture, Forestry and Fisheries	MAFF	Royal Government of Cambodia

Data Processing

DATA EDITING

Once the enumerators collected the survey data for an agricultural household, they submitted the completed questionnaire via Survey Solutions to their data supervisors who, in turn, carried out scrutiny checks. If there were errors or suspicious data detected, the data supervisor would return the record to the enumerator to address the issues with the respondent if needed, and the corrected record would be re-submitted to the data Supervisor. Once the records were validated by the data supervisors, they would approve them for final review by headquarters staff.

At the survey headquarters, the completed questionnaires were received after being approved by the data supervisors. If any issues or suspicious data were discovered during the headquarters review, the records could be returned to the enumerator for verification or correction if needed. Documentation on how to review questionnaire data for suspicious items or outliers was provided to both data Supervisors and headquarters staff.

The data review and calculation of the survey estimates was undertaken using the RStudio software tool. Validation of the data began even when the questionnaires were being designed in the CAPI tool, as Survey Solutions allows for consistency checks to be built into the data collection tool. As soon as completed records were returned during the data collection stage, additional consistency checks were completed, evaluating the ranges for certain items, and verifying any outlier records with the enumerator and/or respondent. Moreover, when the data was cleaned, another step was conducted to impute the missing values derived from item non-response.

STATISTICAL DISCLOSURE CONTROL (SDC)

Microdata are disseminated as Public Use Files under the terms and conditions indicated at the NIS Microdata Catalog (<https://microdata.nis.gov.kh/>), as indicated in the section about 'access conditions' below.

In addition, anonymization methods have been applied to the microdata files before their dissemination, to protect the confidentiality of the statistical units (e.g. individuals) from which the data were collected. These methods include: i) removal of some variables contained in the survey (e.g. name, address, etc.), ii) grouping values of some variables into categories (e.g. age categories), iii) limiting geographical information to the province level, iv) removal of some records or

specific data points, v) censoring the highest values in continuous variables (top-coding) by groups, replacing them with less extreme values from other respondents, or vi) rounding numerical values.

Users must therefore be aware that data protection with SDC methods involves perturbations in the microdata. This implies information loss and bias, and affects the resulting estimates and their parameters. In general, the smaller the subpopulation, the higher the potential impact derived from the anonymization process.

Access policy

CONTACTS

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CONFIDENTIALITY

Article 22 of the Statistics Law of the Kingdom of Cambodia stipulates that staff and employees working in the National Institute of Statistics of the Ministry of Planning and statistical units in ministries and other institutions of the Royal Government, as well as the designated statistical officers of these organizations shall ensure confidentiality of all individual information obtained from respondents, except under special circumstances with the consent of the Minister of Planning. The information collected under this Law is to be used only for statistical purposes. All information collected in the CAS 2023 survey must be treated as confidential and used for statistical purposes only. The microdata are released under terms and conditions (as indicated in the section 'access conditions' below), which require that the data are not redistributed or sold, are used only for statistical purposes and reporting aggregated information, and that there is no attempt to identify statistical units (e.g. respondents). In addition, as indicated in the section 'Other processing' above, Statistical Disclosure Control (SDC) methods have been applied to anonymize the microdata and protect the confidentiality of individual data.

ACCESS CONDITIONS

The anonymized microdata of the CAS 2023 are released as Public Use Files, accessible to all according to the following terms and conditions:

1. Statistical Law. The National Institute of Statistics (NIS) shall ensure confidentiality of all individual information obtained from respondents, except under special circumstances with the consent of the Minister of Planning. The information collected under the Statistics Law of Cambodia is to be used only for statistical purposes. (Statistics Law of the Kingdom of Cambodia, Article 22)
2. Data redistribution and safe storage. The data and other materials retrieved from the NIS Microdata Catalog will not be redistributed or sold to other individuals, institutions, or organizations without the written agreement of the NIS Microdata Catalog. The applicant will ensure, through the safe storage of the micro data retrieved from the NIS Microdata Catalog, that no other person can access the micro data files.
3. Intended use of the data. The data will be used for statistical purposes only and in accordance to the above application form only. The data will be used solely for reporting of aggregated information, and not for investigation of specific individuals or organizations. No attempt will be made to link datasets provided by the NIS Microdata Catalog, or to link with other datasets that could lead to the identification of statistical units (e.g. individuals or organizations).
4. No disclosure of information on statistical units. The applicant will ensure that no other person will have access to results where information on any statistical unit can be disclosed. The applicant will ensure that the identity of any person or establishment, who have provided data to the NIS will not be disclosed during the analysis and/or when releasing results.
5. Reporting breaches of confidentiality. No attempt will be made to re-identify statistical units, and no use will be made of the identity of any person or establishment discovered inadvertently. Any such discovery would immediately be reported to the NIS (nis.nada@yahoo.com and lundysaint@yahoo.com).
6. Citation requirement. Any books, articles, conference papers, theses, dissertations, reports, or other publications that employ data obtained from the NIS Microdata Catalog need to cite the source of data in accordance with the Citation

Requirement provided with each dataset.

7. Reporting on results. An electronic copy of all reports and publications based on the requested data must be sent to the NIS Microdata Catalog (nis.nada@yahoo.com and lundysaint@yahoo.com).
8. Responsibility disclaimer. The original collector of the data (the NIS) and the relevant funding agencies bear no responsibility for use of the data or for interpretations or inferences based upon such uses.

To access the microdata, the user must agree to comply with the above-stated terms and conditions and assure that the use of statistical data obtained from the NIS Microdata Catalog will conform to widely-accepted standards of practice and legal restrictions that are intended to protect the confidentiality of respondents.

CITATION REQUIREMENTS

National Institute of Statistics of the Kingdom of Cambodia, Cambodia Agricultural Survey 2023 (CAS 2023), public use dataset (March 2025), retrieved from the NIS Microdata Catalog (<https://microdata.nis.gov.kh/>).

ACCESS AUTHORITY

Name	Affiliation	Email	URL
Director General	National Institute of Statistics	info@nis.gov.kh	www.nis.gov.kh

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DISCLAIMER

The user of the data acknowledges that the National Institute of Statistics of the Kingdom of Cambodia bears no responsibility for the data or for interpretations or inferences based upon such uses by any user.

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Metadata production

DDI DOCUMENT ID
DDI-KHM-NIS-CAS-2023-v01

PRODUCERS

Name	Abbreviation	Affiliation	Role
National Institute of Statistics	NIS	Ministry of Planning, Cambodia	Documentation of the study
Food and Agriculture Organization	FAO	United Nations	Technical assistance for CAS2023

DATE OF METADATA PRODUCTION
2024-12-14

DDI DOCUMENT VERSION
Version 1.0 (December 2024). This is the first version of the DDI document for CAS2023 microdata.

Data Description

Data file	Cases	Variables
CAS2023_FINAL	15292	178
LANDUSE	52417	5
S3_LANDUSE_PARCEL	24141	6
S3_PARCEL	23763	7
S4_PROCESSED	238	14
S5_INPUTS	35567	15
S6_LIVESTOCK	6731	30
S7_POULTRY	10072	35
S8_CAPTUREFISHING	4236	18
S9_FOREST	3367	13
S9_OTHER	1339	6
S9_PRODUCE_SALES_MARKETS	15715	12
S10_SHOCKS	3653	19
S11_HHROSTER	65464	13
S12_FIES	15292	19
S4_CROP	39397	39
S5_CROPSEED	35195	44
S4_HARVESTED	17654	14
S8_AQUACULTURE	476	32