Senegal - Annual Agricultural Survey 2019-2020

Directorate of Analysis, Forecasting and Agricultural Statistics

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Overview

Identification

ID NUMBER
SEN_2019-2020_AAS_v01_EN_M_v01_A_OCS

Overview

ABSTRACT
The annual agricultural survey in its current form covers all regions of the country and all 45 departments of Senegal. The agricultural survey is an annual statistical operation, the general objective of which is to estimate the level of the main agricultural productions of family-type farms. It also provides information on the physical characteristics of cultivated plots (geolocation, area) and major investments made at their level (agricultural inputs, cultivation operations, soil management and restoration). It also addresses, once every 3 years, themes relating to the structure of agricultural households (level of agricultural equipment, agricultural income, agricultural risks and adaptation strategies, etc.).

The main indicators relate to yield levels, sown areas, production and means of production.

The survey uaually takes place in two collection rounds:

• a first round at the start of the season (just after sowing) consisting of providing structural data on agricultural households and more cyclical data on the sown plots and their areas, the types of crops, inputs and cropping practices of the agricultural campaign;

• a second passage (after the harvests) consisting in collecting, by declaration, information on vegetable agricultural production, as well as on other agricultural activities (breeding, agroforestry), fishing and aquaculture.

However, due to the COVID 19 pandemic and the health containment measures introduced by the government of Senegal in the first quarter of 2020, the collection operations of the second phase (after the harvests) was canceled. Thus, the dataset for AAS 2019-2020 is limited in content compared to previous editions. This relates only to the data collected during the first visit.

KIND OF DATA
Sample survey data [ssd]

UNITS OF ANALYSIS
Households

Scope

NOTES
The description of scope includes:

- Production, area and yield of different crops

- Means of production (inputs and agricultural equipment).

Coverage

GEOGRAPHIC COVERAGE
National coverage

UNIVERSE

The survey covers all households and agricultural plots in the 45 districts of Senegal.

Producers and Sponsors

PRIMARY INVESTIGATOR(S)

Name	Affiliation
Directorate of Analysis, Forecasting and Agricultural Statistics	Ministry of Agriculture and Rural Development

OTHER PRODUCER(S)

Name	Affiliation	Role
Horticulture Department	Ministry of Agriculture and Rural Development	Support in the development of the questionnaire, in the training of interviewers and in supervision
National Agency for Statistics and Demography	Ministry of Economy, Finance and Planning	Support in the development of the questionnaire, in the training of interviewers and in supervision
Study and planning unit of the Ministry of Livestock and Animal Productions	Ministry of Livestock and Animal Production	Support in the development of the questionnaire, in the training of interviewers and in supervision

FUNDING

Name	Abbreviation	Role
United States Agency for International Development	USAID	Main donor of the AGRISurvey program in Senegal
Food and Agriculture Organization of the United Nations	FAO	Technical and Financial Assistance
Government of Senegal	GoS	Funding of staff and collection material

Metadata Production

METADATA PRODUCED BY

Name	Abbreviation	Affiliation	Role
Office of Chief Statistician	OCS	Food and Agriculture Organization	Adoption of metadata for FAM
Directorate of Agricultural Analysis, Forecasting and Statistics	DAPSA	Ministry of Agriculture and Rural Development	Study documentation

DDI DOCUMENT VERSION
SEN_2019-2020_AAS_v01_EN_M_v01_A_OCS_v01

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DDI_SEN_2019-2020_AAS_v01_EN_M_v01_A_OCS_FAO

Sampling

Sampling Procedure

The sample from the previous campaign was renewed for the 2019/2020 campaign. As a reminder, the EAA was built on a two-stage survey, with census districts (DR) as primary units (PU) and agricultural households as secondary units (US), as defined in the 2013 RGPHAE. results of the last RGPHAE count 755,532 agricultural households practicing agriculture in the broad sense. On this basis, 455,916 farm households practice rain-fed agriculture. The latter constitute the frame file for the agricultural survey. The farm household file was used as the sampling frame for the first stage CD draws. The secondary sampling frame is made up, at the level of each primary unit (UP) or DR drawn, of the exhaustive list of agricultural households who live there and represent the secondary units (US).

In line with the broadening of the scope of the survey recommended by the AGRIS approach, the sampling plan integrated from this 2019/2020 campaign, a first degree stratification, induced by that of the second degree, for better reflect different agricultural activities and improve the efficiency of estimates. The choice of a first degree stratification induced by quadratic stratification, although less efficient than an independent first degree stratification, was guided by the constraint of non-existence of relevant variables of interest in the sampling frame of the RGPHAE to discriminate against DRs.

The stratification took into account the relative importance of the main agricultural activities (in terms of household size) identified during the RGPHAE, namely rain-fed agriculture, animal husbandry and horticulture. Four strata were thus constituted as follows:
- the "rain-fed stratum only" which groups together all the households practicing only crops under rain;
- the "Breeding only" stratum for households that practice breeding only;
- the "Horticulture and other crops" stratum which groups together households which mainly practice horticulture and incidentally other crops (forestry, fruit growing, etc.);
- the "Pluvial-Livestock" stratum made up of households which practice both rain-fed agriculture and livestock.

The size of the sample of agricultural households to be surveyed was calculated by department (field of study) by setting a relative error of 10% on the variable of interest (see technical note in documentation).

At the national level, this resulted in a theoretical sample size of 7,300 agricultural households, distributed among 1,460 physical DRs, at the rate of 5 households per DR. At the end of the enumeration operation carried out in the physical sample DRs, adjustments were made to take into account the actual updated size of the DRs, which led to a final size of 7755, or 1527 DR.

The advantage of this method is that it is not necessary to have an exhaustive list of secondary units for the whole of the national territory, but only those residing in the primary sample units, which makes it possible to reduce the travel and consequently the costs of the investigation.

The sample draws are organized independently from one field of study (department) to another. Primary units (or DRs) are drawn with unequal probabilities and with replacement (PIAR draw). The probability of leaving a CD at each drawing is chosen proportional to its size expressed in terms of the number of agricultural households.

At the second stage, the secondary units (or agricultural households) are drawn with equal probabilities and without replacement (PESR draw). A constant number of secondary units is selected from each DR in the first stage sample. This constant number of secondary units is chosen equal to 5.

Weighting

The weighting variable is weight_men.

Questionnaires

Overview

The questionnaire collected information on census of household members and plots

Data Collection

Data Collection Dates

Start	End	Cycle
2019-08-20	2020-01-01	N/A

Data Collection Mode

Computer Assisted Personal Interview [capi]

Data Collection Notes

At the level of the regional rural development directorates (DRDR), the regional supervisors (responsible for statistics) are responsible for:
- supervising the selection of interviewers and the upgrading sessions;
- receive and distribute survey material (training materials, tablets / smartphones, supplemental questionnaires, fuel supply, etc.);
- facilitate the centralization of equipment (smartphones, chargers, etc.) at regional level at the end of operations;
- supervise the consolidation of the data collected (verification, consistency, etc.);
- inform regional and national authorities on the implementation of operations.

At the departmental level, the 45 heads of the Departmental Rural Development Services (SDDR) play the role of departmental supervisors. Their missions are:
- to assist the regional supervisor in his tasks;
- supervise the preparation and implementation of the survey plan;
- proceed with the allocations of DRs and households;
- facilitate the control and correction of data;
- to save the data (files) in a computer;
- participate in the consolidation of data at the regional level;
- to ensure the good management of the material.

The 45 departmental controllers are responsible for:
- assisting the departmental supervisor in his tasks;
- implement the survey plan;
- to control collection operations in the field;
- make corrective proposals on collection operations (observation points, collection system, etc.).

The 163 investigators are responsible for:
- informing the local authorities of the operation;
- identify the household to be surveyed with the support of the authority;
- administer the various questionnaires;
- submit the questionnaires to the inspector's visa;
- to approach the controller for the control, the correction and the saving of the data (saving in the computer of the controller / supervisor on each occasion to compensate for the loss of data).

Questionnaires

The questionnaire collected information on census of household members and plots

Data Processing

Data Editing

The data cleaning process took place in several stages:
- The preliminary processing consists of programming a set of consistency checks in the SUSO application to prevent investigators from entering certain outliers or erroneous values.
- A second level of control is provided by supervisors based at the level of the departmental rural development services (SDDR) and at the level of the DAPSA. It consists of reopening each interview to check the completeness and consistency of the responses. Supervisors approve or reject interviews based on daily questionnaire checks. Some supervisors preferred to review completed interviews directly in the tablets to revise them before synchronization, while recording the notes in the supervisor's account or rejecting the questionnaires accordingly.
- The last stage of data cleaning is carried out by the central DAPSA team using statistical processing software (STATA and SPSS) and the Excel spreadsheet. It consists in exporting all the data from the platform in order to have an overview of the data. During this step, a distinction is made between two main types of controls: controls on the form of observations and logical or link controls between observations.

Other Processing

The microdata contains information on households and individuals and therefore were anonymized before dissemination for analysis.

Data Appraisal

Other forms of Data Appraisal

To ensure data quality and real-time availability, the AAS 2019-2020 was implemented using the World Bank's Survey Solutions (SuSo) CAPI (Computer Assisted Personal Interview ") software. In order to carry out all the interviews, a local server was installed to manage the interviews and the missions, as well as the creation of user accounts for the supervisors (45) and the interviewers (163). At the level of the collection system, each investigator has been trained in the use of the collection application of the survey solution. Following this training, the investigators received a tablet (Samsung, Tecno), the Garmin 64 tool to measure the areas of the plots and an internet connection to receive the tasks and synchronize the interviews on the server. The department-level control system, made up of heads of departmental rural development services (SDDR), was also trained in the use and management of the headquarters. To this end, each department head has been assigned an internet connection to validate or refuse the interviews.

The SuSo data entry application for the AAS 2019-2020 has been designed to optimize the data collection process in the field. Interviews were collected in "sampling" mode (tasks generated from headquarters). The logical and consistency checks integrated into the application made it possible to minimize errors in the information collected by the interviewers from the respondent. Headquarters assigned the work to the interviewers based on the coverage of households to be surveyed. Once the assignments were made, the interviewers synchronized to receive their assignments and proceeded to administer the interviews. Each interview was completed and sent to the supervisor's area in his department for verification. The verification has two states: approve the interview or reject the interview. Once the interviews have been validated by the supervisors, a database is created and can be exported in different formats (stata, spss, tab). For the AAS 2019-2020 database, data has been exported to STATA for further consistency checks, data cleaning and analysis.