REPUBLIC OF MALI

ONE PEOPLE, ONE GOAL, ONE BELIEF

MINISTRY OF RURAL DEVELOPMENT

PLANIFICATION AND STATISTICS UNIT

BASIC INFORMATION DOCUMENT

ENQUÊTE AGRICOLE DE CONJONCTURE INTÉGRÉE AUX

CONDITIONS DE VIE DES MÉNAGES[1]

(EAC-I 2017)

January 2019

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[1] Agricultural Conjecture Survey Integrated with Living Conditions

ACRONYMS

CPS/SDR   Planning and Statistics Unit, Ministry of Rural Development

EAC   Enquête Agricole de Conjoncture

EAC-I   Enquête Agricole de Conjoncture Intégré aux conditions de vie des ménages

LSMS   Living Standards Measurement Study

LSMS – ISA   Living Standards Measurement Study – Integrated Surveys on Agriculture

Contents

1. Introduction

This document provides detailed information on the Enquête Agricole de Conjoncture Intégrée aux conditions de vie des ménages (EAC-I 2017). The EAC-I 2017 is the second edition of Mali LSMS-ISA[2] survey in Mali. The survey is implemented by the Statistics Unit of the Ministry of Agriculture in collaboration with the LSMS team of the World Bank. The financial support for the EAC-I 2017 is provided by the Government of Mali and the World Bank Mali LSMS-ISA project which is financed by the United States Aid Agency through its Feed the Future program.

The first edition of the survey (EAC-I 2014) was conducted in 2014 and the microdata are available to be downloaded from the World Bank microdata library : http://microdata.worldbank.org/index.php/catalog/2583. For the second edition, the objective of the survey remained overall the same. The survey aimed to collect data on households, their characteristics and their living conditions with a particular focus on agricultural activities.

However, since the first edition of the Mali LSMS-ISA, the context in the statistical information system in Mali has evolved with the introduction of a multitopic survey following the model of the LSMS-ISA survey implemented by the National Institute of Statistics (INSTAT) with support from the World Bank[3]. There was therefore a need to rethink the survey design to avoid duplication. As such the second edition of the Mali LSMS-ISA survey has focused on several aspects: improvement of data collection methods (introduction of Computer Assisted Personal Interview), better integration of the sample of the yearly Enquête Agricole de Conjoncture (EAC), agricultural yield measurement, and the measurement of agricultural income (a long-sought goal from the Ministry of Agriculture in Mali).

The rest of the document is organized as follow: the basic survey characteristics are described in the next section. It is followed by an introduction of the survey instruments. A section detailing the sample design adopted for this survey follows. Section 6 describes field work activities. A brief description of the sample is provided in section 7. The document ends with a section on basic instructions on how to use the various data sets.

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[2] For more information on the LSMS-ISA project, please visit: www.worldbank.org/lsms-isa.

[3] INSTAT is involved in a regional household survey program supported by the World Bank including technical support from the LSMS team. The data for this survey will also be released as part of the Mali LSMS-ISA program.

2. Survey Characteristics

The EAC-I 2017 is the second edition of an LSMS-ISA survey in Mali. The survey follows the model of the first edition: it is a national representative multi-topic household survey with a focus on agriculture.

The EAC-I 2017 visited the same EAs visited in 2014 in the first edition. However, for logistical reasons, an effort could not be made to track households between the two editions. So, the EAC-I should be considered as another cross-sectional survey. Efforts to link households potentially visited in the two editions will be undertaken in the near future.

Like the first edition, the survey was carried out in two visits. The same households visited in the first visit are revisited in the second. The visits were planned to match the timing of the post-planting and post-harvest periods of the 2017/2018 rainy agricultural season.

The CPS/SDR in partnership with the LSMS-ISA team, used the first edition questionnaires as a basis for the second edition. Some of the modules were redesigned given the focus on agriculture income and in order to accommodate the integration of the entire EAC sample in the release of this edition. About 4000 households were administered the full version of the questionnaires (version Lourd), the remaining 4,300 households were administered a light version of the questionnaires (version Léger). The split of the two samples is explained in the sample section.

3. Survey Instruments

In the previous edition, the survey instruments consisted in three types of questionnaires.

- EAC-I Questionnaire Ménage Lourd (Household questionnaire)
- EAC-I Questionnaire Exploitations Agricoles Lourd (Agriculture questionnaire), which was administered to the household if one or more members of the household participated in agricultural or livestock activities.
- EAC-I Questionnaire Communautaire (Community questionnaire), which was administered at the enumeration area level and collected information on the socio-economic indicators of the enumeration areas where the sample households reside

In this edition, the interviews were conducted via CAPI for the most part, so the paper version served mainly as reference documents. The household and agriculture questionnaires are merged to make one into one document. We still have one document for each visit. In the questionnaires that are distributed, questions that are part of the Questionnaire "Lourd" are highlighted in grey. In addition, a crop-cut questionnaire was also administered and will be disseminated later as it requires further processing.

The community questionnaire was not carried out and, instead, a set of geovariables are released at the enumeration area level. The description of these variables is given below in section 8.3. Below is an overview of the modules.

3.1. First visit

During the first visit, the data collected covered 11 sections (with section 4 containing 3 subsections, section 5 containing 2 subsections as well as section 9, and with the 11th section containing 7 sub-sections) in addition to the cover page which contains information of a general nature, and section 0 which includes detailed information on the household identification and the results of the interview. The sections highlighted in red are in the version "Lourd" only.

- **Cover**: The cover lists household location and identification data. It is completed by field staff.
- **Section 0**: **Control Information**: It contains detailed information to identify household and the data collection team. It also provides information on the first visit interview process.
- **Section 1: Household demographic characteristics:** It contains the roster of individuals living in the household, socio demographic characteristics of the household members: their gender, residency status, link with the head of household, age, relationship with household head, their marital status as well as questions related to migratory status.
- **Section 2: Education:** It concerns individuals having at least 4 years old. This section determines the literacy status and education level in the household.
- **Section 3: Health:** The section gives information about the main disease episode occurred during the last 30 days preceding the survey.
- **Section 4: Employment:**
  - o **Part A:** it collects information on the participation to job market.
  - o **Part B:** it collects information about the main employment

- o **Part C:** it collects information about the second employment
- **Section 5: Non-agricultural firm**:
  - o **Part A**: This section informs whether the household owns a non-agricultural firm.
  - o **Part B:** It collects detailed information about the non -agricultural firms woned by the household.
- **Section 6: Dwelling:** The section concerns households' dwelling characteristics (type of material used for roof, the floor, walls, electricity access, water, toilets, etc.)
- **Section 7: household income:** It collects data on ownership of durable goods.
- **Section 8: Non-employment revenues:** Some households' revenues are not generated by remunerated activities. For each type of non-employment revenue, the section identifies the individuals receiving it as well as the amount perceived.
- **Section 9: Transfers:**
  - o **Part A**: it collects information on the transfers received by household members.
  - o **Part B**: it collects information on transfers sent by household members.
- **Section 10: Food security:** One half of the households is administered FAO'S Food Insecurity Experience scale (FIES) survey module. The module contains information on the ability of the household's resources to ensure food security for the members. Important food security aspects are addressed in this section including the question of the quantity and quality of food that the household can afford. The question of the frequency of meals in the household is also mentioned in the section.
- **Section 11: Agriculture:**
  - o **Part A1: Stocks listing:** This section lists the building blocks used for stocking crops by the household.
  - o **Part A2: Stock/crop listing:** This part concerns crops stocked in the building blocks used as stocks from previous year production (current stock).
  - o **Part B: Land characteristics: it** concerns the characteristics of the agricultural exploitation and informs on access to land. The collection unit is the land and data collected are about land characteristics.
  - o **Part C: Crops:** This section concerns crops cultivated during the current campaign. The collection unit is the crop on the land.
  - o **Part D: Inputs and institutions:** Data collected on (i) relations between agricultural households and agricultural outreach programs; (ii) programs advantages; (iii) types of programs (seeds, fertilizers); and (iv) challenges faced.
  - o **Part E: Labor:** It collects information on labor used for sowing and planting: familial labor, employees, and support groups.
  - o **Part F: Fruit trees:** The section collects data on perennial cultures, namely the types of trees, the number of months when trees were harvested, and the use of tree production.

3.2. Second visit

For the second visit, the information collected concern 9 sections of the survey, in addition to the cover page which contains information of a general nature, and section 0 which includes detailed information

on the household identification and the results of the interview. Sections 6, 7 and 9 have respectively 2, 7 and 9 subsections. The sections highlighted in red are in the version "Lourd" only.

- **Cover**: The cover lists household location and identification data. It is completed by field staff.
- **Section 0**: **Control Information**: It contains detailed information to identify household and the results of the second visit field interview.
- **Section 1: Household demographic characteristics:** This section updates some of the information collected in section 1 visit 1.
- **Section 2: Saving and credit**: The section gathers data on access to formal financial institutions, savings made, loans or credit received, payments made for household members aged 18 and more.
- **Section 3: Food security:** The second half of the households that were not administered the FIES module is now administered the module
- **Section 4: Security nets:** This section informs on the access to social security programs such as food distribution or free healthcare to children for example. Questions include aspects concerning the nature of the support received as well as the financial value of this support.
- **Section 5: Chocks and resilience:** The section informs on negative shocks sustained by the household, their economic impacts on the household's revenues, and the household's response to the shocks. Various types of shocks are analyzed in this section; ranging from natural disasters such as drought and flooding to social and economic shocks such as the bankrupt of a family business or job losses.
- **Section 6: Fisheries:**
  - ○ **part A:** This section includes questions on the household's participation in fishing, the quantities and types of fish caught, as well as the use of the product of fishing activities, etc.
  - ○ **Part B:** The second part of the questions on fishing activities concerns the types, age, value and access to fishing equipment.
- **Section 7: Agriculture:**
  - ○ **Part 7A: Inputs subsidizing:** The section contains questions about the access and participation in agricultural input subvention programs.
  - ○ **Part 7B: Cost of inputs:** Info about the cost of the inputs used during the last agricultural season are collected. The section also covers important points concerning the suppliers of inputs to households as well as the other sources of inputs such those received by the household as gifts.
  - ○ **Part 7C: Update of cultures during second passage:** Updates the information collected on the crops on the plots during the first passage.
  - ○ **Part 7D: Use of inputs:** Quantity of fertilizers, pesticides, etc. used and time of application on each plot.
  - ○ **Part 7E: Labor:** It collects information on labor used for weeding and harvesting: familial labor, employees, and support groups.
  - ○ **Part 7F: Crop Production:** This section of the questionnaire informs on the production from household's agricultural activities. Details are given on harvest processes, quantities harvested and losses resulting from crops drying, threshing and transportation.
  - ○ **Part 7G: Use of crop production:** This section addresses questions regarding the use of the agricultural production. Details are given about the quantities used for consumption,

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or conserved for sowing, or used to repay agricultural inputs suppliers, or to feed animals, and about quantities stocked for future use or sold. This section also captures the production losses encountered during stocking processes or transportation to market places for example.

- **Section 8: Livestock:**
  - **Part A: Livestock ownership**: Livestock composition, management and ownership, meat production, milk production, food, water health of livestock.
  - **Part B1: Stock variation (medium and big animals):** This section collects info about the variation of the stock of medium and big animals using a pre-survey 12 months reference period; taking into account the stock of animals 12 months before the survey as well as the animals lost (diseases, animals stolen, etc.), animals acquired and also those sold or given.
  - **Part 8B2: Stock variation (small animals):** This section collects info about the variation of the stock of small animals using a pre-survey 3 months reference period; taking into account the stock of animals 3 months before the survey as well as the animals lost (diseases, animals stolen, etc.), animals acquired and also those sold or given.
  - **Part 8C: Livestock-input**: This section addresses the question of livestock watering providing details on this input's cost as well as the responsible of the livestock watering process. The section offers the same cost and responsibility features/details for the preventive and curative treatments administered to the animals; and also gives those cost and responsibility details on the labor used for the household's livestock activities, as well as for the fodder, agricultural residuals and other inputs used to feed the livestock.
  - **Part 8D1: Meat and leather production (ruminants):** It collects info on participation in the activity; cost related to meat and leather production (medium and big animals); Quantities produced and revenues from production sold.
  - **Part 8D2: Meat production (poultry and rabbit):** It collects info on participation in activity; cost related to meat production (small animals); Quantities produced and revenues from production sold.
  - **Part 8E: Milk production and derived products:** Participation in activity; cost related to the production of the milk, butter and cheese production; Quantities produced and revenues from production sold.
  - **Part 8F: Eggs production:** It collects info on participation in the activity; cost related to eggs production; Quantities produced and revenues from production sold.
  - **Part 8G: Animal traction and manure:** It collects info on the use of animals to offer traction services to other households (ploughing, transportation, etc.); revenues from those services; manure trading and revenues from this activity.
  - **Part 9: Equipment:** Access to agricultural equipment and tools.

4. Sample

The EAC-I 2017 replicates the same sampling design as the first edition, visiting the same EAs. The sample is nationally representative and cover all regions and areas (urban and rural) except Kidal[4]. The domains were defined as the entire country, district of Bamako, other urban areas, and rural areas; and in the rural areas: agricultural zones, agro-pastoral zones and pastoral zones. Taking this into account, 51 explicit sample strata were selected.

The EAC-I 2017 revisited the same EAs visited in 2014, so the first stage implicitly follows the same strategy as in 2014: 1070 enumeration areas (EAs) were selected with Probability Proportional to Size (PPS) using the 2009 Census of Population as the base for the sample, and the number of households as a measure of size.

In the second stage:

- 9 households were selected with equal probability in each of the urban EAs
- 9 households were selected with equal probability in each of the rural EAs, then in rural areas:
    o Households # 3, 6, and 9 are administered the version Lourd
    o Households # 1, 2, 4, 5, 7, 8 are administered the version Léger

The total estimated size of the sample for the survey was 9630. Because of security reasons in the country not all the enumeration areas were visited: 8711 households were interviewed in the first visit; whereas 8658 household were reached during the second visit. The final sample was refined on the base of quality data assessment. The final sample size comprises 8390 households.

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[4] At the time of the sample selection, the new regions (Menaka and Taoudénit) were not officially announced. Thus, the sample does not take into consideration these new divisions.

5. Training

The training was done in three phases:

- Training of the regional supervisors
- Two trainings (one before each visit field work) for the enumerators and their team leaders held in each of the region capitals.

5.1. Training of the regional supervisors

This ten-days training was held in CPS/SDR headquarters in Bamako. The participants were the regional supervisors (three per region) of the survey. In the classical EAC organizational structure, these government staff members from regional agricultural offices coordinate survey field work in the region. They are responsible of the selection and the training of the enumerators under the guidance of CPS/SDR. They are also responsible of the overall quality control of questionnaires filled in their region and they coordinate the centralization of questionnaires as well as their transfer to headquarters for data entry. This training was given by both the CPS/SDR and the LSMS team.

The training consisted of (i) classroom sessions on the questionnaires presentation and revision and (ii) exercises on individual sections of the questionnaires.

5.2. Enumerators' trainings

Two enumerator trainings were conducted (one before each visit). The enumerators and team leaders (controllers) were trained by the regional supervisors under the guidance of CPS/SDR field staff with support from the LSMS resident advisors technical missions. Training was held in each regional capital (Kayes, Sikasso, Koulikoro, Ségou, Mopti, Tombouctou, Gao and Bamako). The training consisted of (i) classroom instructions on the questionnaires, concepts and definitions and practice exercises, (ii) interview techniques, and team work organization. In addition, participants did mock interviews and, in some cases, real interviews in the field with households that were not scheduled to be part of the actual survey sample. Most of the training instructions are detailed in the interviewer's and supervisor's manuals which are also available. The training was conducted using both papers versions and, on the notebook, that each enumerator was provided for the survey.

The first visit training was held for two weeks. At the end of this training session, enumerators were administered a test on the material covered during the training. Additional tests were also performed by checking the accuracy of questionnaires that were filled out. The second visit enumerator training consisted of a review of the second visit questionnaires and a review of common mistakes made during the first visit and lasted one week.

6. Field work

The EAC-I 2017 was implemented by the CPS/SDR with the technical assistance of the LSMS-ISA Team of the World Bank.

6.1. Organization of the field work

The EAC-I was organized as follow:

- Interviews were conducted by teams of enumerators. Each team was made up of 3 enumerators under the supervision of a controller. A controller was assigned in average 2 teams of enumerators. The listing operations were conducted in teams. Then the enumerators were assigned EAs in which they had to remain until the harvest of crop-cut. In effect, the enumerators are semi-resident. On average each enumerator was in charge of 3 EAs. In total 345 enumerators and 66 controllers.

- The interviews were conducted via CAPI. Each enumerator was given a notebook computer on which the questionnaires was encoded. The data entry program had built-in within modules and across modules coherences checks to avoid mistakes and inconsistencies. Depending on the type of errors detected, the enumerators could not proceed until he corrected the answer. In other cases, a warning was display and the enumerator had to confirm that the value entered was indeed what was reported even after verification.

- Upon completion of interviews, the enumerators sent the data sets to the controller who reviewed the questionnaires for completion and errors. In case of mistakes or inconsistencies, the controllers returned the questionnaires to the enumerators who had to return to the household as necessary until the work was completed and free of mistakes. Upon review, the controller sent the questionnaires directly to CPS/SDR headquarter server.

- Throughout the duration of fieldwork regional supervisors conducted field supervisions of the enumerators and controllers.

- In addition to the checks implemented in the data entry program, additional checks were conducted once the data was received. For the first visit, a listing of possible inconsistencies was sent to the enumerators who had to correct some of the information elicited during the first visit when returning to the household in the post-harvest visit.

6.2. First visit field work

Data collection followed immediately after the training in the regions. The post-planting visits were conducted in most of the region between mid-August and October.

As shown in the table, in many regions not all of the expected households were interviewed during the first visit. Mopti is the region in which the most EAs could not be visited, but Gao and Timbuktu also were very much affected. This is due to the security concerns that prevented the enumerators to reach these EAs. Replacement of EAs could not be attempted as this would have required the list of EAs which was difficult given how fluid the situation was.

6.3. Second visit field work

Data collection for the second field visit started following a one-week training on the 2nd visit questionnaires. This was an occasion for the enumerators to address some of the mistakes detected in their questionnaires during the first visit. For the second visit, enumerators returned to the same households they visited during the first visit.

6.4. Data cleaning

Following the end of field work, additional data cleaning was conducted in headquarters. This consisted in additional intra and inter records as well between visits checks.

7. Basic Counts

The data were collected in two visits. In the second visit enumerators were supposed to check on the presence of all individuals interviewed in the first passage and then indicate if those individuals were still living in the household. New members of households were recorded, but not interviewed. Members of households who had left the households were recorded but no attempt were made to interview them. The total final sample for the first visit comprises information on 94,071 individuals in 8390 households. The total final sample for the second visit comprises information for 94,384 individuals in 8390 households.

Table 1. Final Sample Sizes of Individuals and Households by Region – First visit

Area Region	First visit Individuals (Households)			Second visit Individuals (Households)		
	Urban	Rural	Total	Urban	Rural	Total
Kayes	1680	15028	16708	1682	15060	16742
	(151)	(1207)	(1358)	(151)	(1207)	(1358)
Koulikoro	642	15652	16294	664	15706	16350
	(90)	(1261)	(1351)	(90)	(1261)	(1351)
Sikasso	1174	17890	19064	1179	17907	19086
	(153)	(1123)	(1276)	(153)	(1123)	(1276)
Ségou	1139	14559	15698	1149	14603	15752
	(153)	(1312)	(1465)	(153)	(1312)	(1465)
Mopti	735	10601	11336	739	10612	11351
	(90)	(1005)	(1095)	(90)	(1005)	(1095)
Tombouctou	177	4625	4802	179	4667	4846
	(27)	(608)	(635)	(27)	(608)	(635)
Gao	312	3018	3330	312	3021	3333
	(45)	(405)	(450)	(45)	(405)	(450)
Bamako	6830		6839	6924		6924
	(760)		(760)	(760)		(760)
Total	12689	81373	94071	12828	81576	94384
	(1469)	(6921)	(8390)	(1469)	(6921)	(8390)

8. Datasets

8.1. Description of Datasets

As a reminder, the EAC-I 2017 was implemented in two visits: "1er passage" (August 2017 - October 2017) and "2ème passage" (December 2017 - February 2018). During each visit three questionnaires were administered:

- Two types of questionnaires were administered to households' respondents[5]
  - o Questionnaire "Lourd" containing all the variables and administered to a subsample of households, and a simplified questionnaire
  - o Questionnaire "Leger" (for the remaining households)[6]
- The third type of questionnaire (crop-cut) is filled out by the enumerator.

The datasets are organized by visits, and then by questionnaire. Please note that some sections of the questionnaires are contained in the same file.

8.2. Naming schemes

Data sets begin with the letters "eaci17" followed by letters describing the content or the questionnaire section number (see Annex 1 for a list of the data set names by section). Datasets of the first visit have the suffix "p1" and datasets for the second visit have the suffix "p2".

The data should always be used in conjunction with the questionnaire. Variable names have from 7 to 9 characters and are based on a system where the first part indicates the section in which the information was collected. For example, s7f indicates information from the production section (Section 7) of the second visit agriculture questionnaire. This is followed by the question number, for example q09. If the question has multiple parts, the question number would be represented as "q07a". For example, the question s7fq9a is question 7F - part a (asking for the quantity) in section 7F of the second visit agriculture questionnaire: "A combien évaluez-vous les pertes?"

8.3. Geospatial data

To maintain the confidentiality of our respondents, certain parts of the EAC-I 2014 database have not been made publicly available. The confidential variables pertain to (i) names of the respondents to the household and community questionnaires, (ii) village and constituency names, (iii) descriptions of household dwelling and agricultural plot locations, (iv) phone numbers of household members and their reference contacts, (v) GPS-based household and agricultural plot locations, (vi) names of the children of the head/spouse living elsewhere, (vii) names of the deceased household members, (viii) names of individuals listed in the network roster, and (ix) names of field staff.

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[5] Datasets of the modules "Lourd", comprise only the households selected for the "Lourd" version of the questionnaire.
[6] All questions in the version "Leger" of the questionnaire are comprised in the version "Lourd" of the questionnaire.

To facilitate the integration of other spatial data while preserving the confidentiality of sample household and communities, we have computed the average of household GPS coordinates in each EA, applied a random offset within a specified range to the average EA value (the MeasureDHS methodology, with some modifications) and provided the offset EA latitudes and longitudes as part of the file **EACI_Geovariables.**

More specifically, the coordinate modification strategy relies on random offset of EA center-points (or average of household GPS locations by EA in EAC-I) within a specified range determined by an urban/rural classification. In rural areas, where communities are more dispersed and risk of disclosure may be higher, a range of 0-5 km offset is used for 90% of EAs. A range of 0-10 km is applied in 10% of rural clusters, which effectively increases the known range for all rural points to 10 km while introducing a small amount of additional noise. For urban areas, the commune center is used. Urban area communes correspond to arrondissements, and are much smaller in extent than rural communes, resulting in a lower average offset from true location. The commune center (mean center of populated places) is also used in a small number of rural EAs where the 10 km range does not provide sufficient anonymization.

Offset points are constrained at the arrondissement level, so that they fall within the correct area for spatial joins, or point-in-polygon overlays. The result is a set of coordinates, representative at the EA level, that fall within known limits of accuracy. Users should take into account the offset range when considering different types of spatial analysis or queries with the data. Analysis of the spatial relationships between locations in close proximity would not be reliable. However, spatial queries using medium or low resolution datasets should be minimally affected by the offsets.

To increase the usefulness and research potential of the EAC-I data, a set of geospatial variables has also been provided in the file **EACI_Geovariables**. To create the geospatial variables the modified locations are merged with various spatial databases that were available to the survey team and are standardized across LSMS-ISA program countries. These include measures of distance, climatology, soil and terrain and other environmental factors. Time-series on rainfall and vegetation have also been used to describe the survey agricultural season relative to normal conditions. These variables are intended to provide some understanding of how geophysical characteristics vary at the landscape level. The tables in Annex 2 provide the name, type, reference period, resolution, description, and source of each variable.

8.5. Weights

In order to produce nationally representative statistics with the data weights or expansion factors need to be applied. These survey weights adjust for differences in the probability of selection within the sample. To accurately use the datasets, the data must be weighted to reflect the distribution of the full population in the country. A population weight was calculated for the households in the sample. Two sets of weights are calculated (one for each type of questionnaire) are calculated. The weights are found in the file named EACI17_ECHANTILLON.dta.

9. Annexes

Annex 1: Description of questionnaires and file names

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
	HOUSEHOLD AND INDIVIDUAL DATA						
0. Control Information	Interviews dates and other control Information	ENUMERATOR	eaci17_s00p1	Control information	Interviews dates and other control Information	ENUMERATOR	eaci17_s00p2
1. Socio-demographic characteristics of household members	Sex, Relationship to household head, date of birth, age, marital status, ethnicity, religion, Presence of the individual and his parents in the household.	Household head or most knowledgeable member/Individual members of the households	eaci17_s01p1	1- Socio-demographic characteristics of household members	Presence of the members in the 1st and 2nd visit and age.	Household head or most knowledgeable member/Individual members of the households	eaci17_s02p1
2. Education	Ability to read, write, attendance to formal school, reason for non-attendance, year of last school attendance, type of school, highest education level attained.	Household members aged 4 years and older. Responses provided by household head or most knowledgeable member or the individual him/herself when he/she is capable.	eaci17_s02p1	2- Saving and credits	Possession of a bank account, Type of financial institution used for account, existence of savings in bank accounts, existence of savings at home, request for credit and reason in case of no request, access to credit requested, reason of non-access to credit, number of credits requested, type of credit requested, reason for credit request, type of financial institution approached for credit request, date of access to last credit, amount of last credit accessed, last credit repayment frequency.	Household Head or most knowledgeable member	eaci17_s02p2
3. Health	Health problems in last 30 days, principal type of health problem encountered in this period, impact of health problem on normal activities, length of time health problem impacted normal activities, impact of the health problem on others around,	Individual him/herself if capable or Household Head or most knowledgeable household member.	eaci17_s03p1	3- Food security	Worry over having enough to eat during the last 30 days, Non access to safe, nutritious and various food the last 30 days due to lack of money or other resources, Inability to eat at all or eat three times a day or as willing due to lack of	Household Head or most knowledgeable member	eaci17_s03p2

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First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
	duration of impact caused by household member's health issue on others				money or other resources the last 30 days, frequency of lack of food over the last 30 days.		
4-A-Employment-part 1	Part A. Activity in the last 7 days, method used to meet needs, job search in the last 30 days if not employed.	Household members 6 and older		4- Social safety nets	Receipts of benefits from government, or NGO's social programs (cash transfers, cereals transfers, school feeding, food in exchange of work, nutritional supplements for malnourished children, free healthcare for children less than 5, bed nets, etc.) , Support financial evaluation, frequency of the support over the last 12 months, date of last support over the last 12 months.	Household Head or most knowledgeable member	eaci17_s04p2
4-B-Employment-part 2	Part B. Principal employment during the last 12 months. employer branch of activity, type of employer, months worked in the last 12 months, average number of days worked per month, average number of hours worked per day, category of position, salary, bonus and other benefits, receipt of meals from employment.	Household members 6 and older	eaci17_s04p1				
4-C-Employment-part 3	Part C. Secondary employment during the last 12 months. employer branch of activity, type of employer, months worked in the last 12 months, average number of days worked per month, average number of hours worked per day, category of position, salary, bonus and other benefits, receipt of meals from employment.	Household members 6 and older					
5-A-Non-Farming Enterprises-	Part A. Detailed questions about the types of non-agricultural household enterprises owned (trading in general and of	Household Head or most knowledgeable member	eaci17_s05ap1	5- Shocks	Nature of shocks faced the last three years, consequences of the shock on revenues, income, food	Household Head or most knowledgeable member	eaci17_s05p2

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SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
Existence of non-farming Enterprises	transformed meat, fish or other agricultural products in particular; clothes trading businesses; construction business; monetization of technical/intellectual capacities/services; transportation business; restaurant; other non-farming enterprises)				production, stock of food, purchase of food; strategy used to face the shock.		
5-B-Non-Farming Enterprises-Characteristics of household	Part B. Principal good or service, ID code of principal respondent ID, main good of service produced by the enterprise, branch of activity of the non-farming enterprise, ID code of owner, ID codes of managers, ID codes of firm revenues managers, date enterprise was formed, number of non-household members co-owning the enterprise, share of revenues that goes to the household, type of premises of the enterprise, value of the enterprise premises, principal source of funding used to create the firm, Machinery ownership by the firm, machinery value, ownership and value of rolling stock, ownership and value of office furniture, office furniture and other equipment, firm's raw material or commodities supplier, clients, amount and types of expenses for the last 30 days, amount and types of revenues for the last 30 days, value of stocks, taxes and administrative expenses supported the last 12 months,	Household Head or most knowledgeable member	eaci17_s05bp1				

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SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
	current state of the firm's operations, identification of household members who work in the enterprise, hours worked for men, women and children.						
6.Housing Characteristics	Type of dwelling; number of rooms; status of occupation; principal material of the exterior walls, the roof and floors; principal source of water supply; distance to drinking water source in dry season; time to fetch drinking water from principal drinking water source in dry season; distance to drinking water in rainy season; time to fetch drinking water from principal drinking water source in rainy season; type of toilets in the dwelling; how excrement is disposed of; toilets sharing with other households; source of lighting; principal combustibles used for cooking.	Household Head or most knowledgeable member	eaci17_s06p1	6-A- Fishing-Participation	Part A- Participation in Fishing activities in the past 12 months; members participating in the fishing activities (up to 3) and time committed to the activities during the past 30 days; non-household members workers employed the past 30 days (days worked and salary paid), type of fish caught, , average quantity of fish caught per week in the past 12 months, use of quantity of fish caught, means of conservation of fish.	Household Head or most knowledgeable member	eaci17_s06ap2
				6-B- Fishing-Equipment used to fish	Types of equipment, number of equipment used per type, prices and current value of equipment, ownership and rental price of the equipment if applicable.	Household Head or most knowledgeable member	eaci17_s06bp2
7.Assets	Possession of asset, number of items, details of the household member owning the asset when it does not belong to the entire household.	Household Head or most knowledgeable member	eaci17_s07p1	7-A- Agricultural Inputs subsidies:	Awareness of government subsidies, selection and receipt of subsidies, reasons in case the household did not accept the subsidies, quantity of subsidized inputs received, utilization of the subsidies and income from the sale of the subsidies if any.	Household Head or most knowledgeable member	eaci17_s07ap2

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
				7-B- Cost of agricultural inputs:	Type if inputs used during the last rainy season, source of inputs supply, receipt of inputs as gift and grant provider, amount of inputs received as gift, quantity and value of inputs purchased.	Household Head or most knowledgeable member	eaci17_s07bp2
				7-C- Updates of the cultures-	Recording changes in cultures on land from passage 1 to passage2. was there any changes in the cultures of the first visit, reasons for new or change of culture, list of replacement cultures or new cultures(Database 11c passage 1 updated)	Household Head or most knowledgeable member	eaci17_s07c1p2 and eaci17_s07c2p2
				7-D- Agricultural inputs utilization-	Information on land utilization for agricultural purposes, types and quantity of inputs used on the land, duration and dates of usage of the input, method of acquisition of the input,	Household Head or most knowledgeable member	eaci17_s07dp2
2				7-E- Labor force-	Utilization of labor force in the form of familial labor, non-familial labor, support groups; repartition of the labor force per gender and age categories (whether the worker is more or less than 15 years old)	Household Head or most knowledgeable member	eaci17_s7ep2
				7-F-Production-	Type of crop, date of harvest beginning, loss of production, percentage of loss, principal reason for loss, loss values, status of harvest (completed or ongoing), proportion of land not yet harvested, date of harvest completion,	Household Head or most knowledgeable member	eaci17_s7fp2

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
					Quantities harvested, dates, process and responsible for crop drying and threshing, crop transportation to household		
				7-G- Utilization of the production	Amount consumed by household, amount given to other households, amount saved for seeds, amount used to repay inputs, amount used to feed animals, amount stocked, duration of the conservation, place of stocking, measures to protect production, degradation of the production, quantity of and income from production sold, household member controlling income from production sale, transportation to market and loss during transportation, utilization of the stocked production (consumption or sale and price of sale if applicable).	Household Head or most knowledgeable member	eaci17_s7gp2
8 - Non-work income	Receipt of retirement pension, widow's pension, disability pension, child support, rental income, interest, dividends, identification of household member who receives, amount received	Household Head or most knowledgeable member	eaci17_s08p1	8A - Number and type of livestock	Number of owned or raising of livestock during last 12 months, principal reasons for owning or raising livestock, has household given livestock to another household, how many sent to other household	Household Head or most knowledgeable member	eaci17_s8ap2
				8b1 – Changes in livestock – Big animals	Number of animals owned or raised the last 12 months; Number of animals received as gifts from Government, NGOs or other households during the last 12 months; number given as gifts to other households during last 12	Household Head or most knowledgeable member	eaci17_s8b1p2

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First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
					months, Number of animals given to other households; Number of animals stolen during last 12 months; Number of animals that died the last 12 month and reason of the death; Number of animals born during the last 12 months; number of animals purchased during the last 12 months; value of purchases; purchase responsible within the household; number of animals sold during the last 12 months; value of purchases; purchase responsible within the household; raw value of the sales; amount paid for sales commissions; amount paid in taxes on sales; ID code of the main HH members who control the sales.		
				8b2- Changes in livestock – Small animals	Number of animals owned or raised the last 3 months; Number of animals received as gifts from Government, NGOs or other households during the last 3 months; number given as gifts to other households during last 3 months, Number of animals given to other households; Number of animals stolen during last 3 months; Number of animals that died the last 3 month and reason of the death; Number of animals born during the last 3 months; number of animals purchased during the last 3 months; value of purchases; purchase responsible within the	Household Head or most knowledgeable member	eaci17_s8b2p2

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
					household; number of animals sold during the last 3 months; value of purchases; purchase responsible within the household; raw value of the sales; amount paid for sales commissions; amount paid in taxes on sales; ID code of the main HH members who control the sales.		
				8c- Livestock-Inputs	Two main responsible for livestock watering; Has the household paid to water livestock and for how many months over the last 12 months? Monthly cost of livestock watering; Two main responsible for livestock feeding, Did the household purchase fodder / crop residues / industrial byproducts / tubers & roots / supplementary food for the last 12 months? Number of months during which the household purchased those products over the last 12 months; Monthly cost of those products; Value of food used for owned or raised livestock; type and cost of labor used the last 12 months; Details on livestock vaccination and deworming processes and costs; use of medical services; who provided the service, amount paid for the service, two main HH members responsible for medical treatments and vaccinations.	Household Head or most knowledgeable member	eaci17_s8cp2

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
				8d1- Meat, leather and skins production	Slaughter of animals during last 12 months to produce meat, number of animals slaughtered these 12 months; Sales of slaughtered animals and amount generated by those sales; Main sales responsible within household; Value of meat used for household consumption the past 12 months; Ownership of animals slaughtered the past 12 months; Value of meat given to the household owning the slaughtered animals; amount of meat given as gifts to other households; amount of other charges for production of meat; production of skins and leather, amount of skins and leather produced, amount of skins and leather sold, amount received for sales, ID code of the members controlling the sales revenues.	Household Head or most knowledgeable member	eaci17_s8d1p2
				8d2 – Meat-Poultry	Slaughter of poultry during last 3 months to produce meat; number of animals slaughtered these 3 months; Sales of slaughtered animals and amount generated by those 3 past months' sales; Main sales responsible within household; Value of meat used for household consumption the past 3 months; Ownership of poultry slaughtered the past 3 months; Value of meat given to the household owning the slaughtered poultry; value of	Household Head or most knowledgeable member	eaci17_s8d2p2

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
					meat given as gifts to other households the past 3 months; amount of other charges for production of meat.		
				8e- Production of Milk.	Number of animals used to produce milk the last 12 months, quantity of milk processed in liters in average daily, quantity of milk consumed by the household weekly during the milking period; quantity of milk given weekly during the milking period; quantity of and revenue from milk sold weekly during the milking period; Revenue from curd, butter and cheese production; two main household responsible for revenues from milking activities.		eaci17_s8ep2
				8f- Production of eggs	Description of egg-laying processes for household poultry; Number of eggs produced each year over the past 12 months, number of eggs given, sold or consumed. ID Code of household members who control income from sale of eggs.	Household Head or most knowledgeable member	eaci17_s8fp2
				8g- Animal traction and manure	Use of animals to offer services (traction, transport, etc.) to other households during the past 12 months; Revenue from the sale of those services, Main responsible for the supply of those services; Revenue from sale of manure over the 12 past months; Main responsible for the sale of manure.	Household Head or most knowledgeable member	eaci17_s8gp2

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
9- A- Remittances received	Part A. Remittances received by the household. ID code of member who received, relationship to sender, age, gender, literacy of sender; transfer's nature, place of residence of sender, reason of the transfer, frequency and transfer's value per frequency unit.	Household Head or most knowledgeable member	eaci17_s09ap1	9- Equipment	Type of equipment owned, number of equipment per type, price and age of the last equipment acquired per type, equipment's residual value, stock of equipment 12 months before the survey, equipment leasing to other households; did the household borrow or buy the equipment, borrowing price.	Household Head or most knowledgeable member	eaci17_s9p2
9- B- Remittances sent	Part A. Remittances sent by the household. ID code of member who sent, relationship to receiver, age, gender, literacy of receiver; transfer's nature, place of residence of beneficiary, frequency and transfer's value per frequency unit.	Household Head or most knowledgeable member	eaci17_s09bp1				
10- Food security	Worry over having enough to eat during the last 30 days due to lack of resources, Non access to safe, nutritious and various food the last 30 days due to lack of money or other resources, Inability to eat at all or eat three times a day or as willing due to lack of money or other resources the last 30 days, frequency of lack of food over the last 30 days.	Household Head or most knowledgeable member	eaci17_s10p1				
11-A1- List of attics	List of attics, ID code of the attic responsible, is the attic owned by an individual or collectively, attic's location, state of the attic.	Household Head or most knowledgeable member	eaci17_s11a1p1				
11-A2- Crops in attics	List of crops in attics, Current state of the crop's stocked in attic, state of the crop's stocked in attic 1 year ago.		eaci17_s11a2p1				
11-B- Exploitation	List of lands exploited per household, list of crops on exploited lands, land dimensions, ID code of member responsible	Household Head or most knowledgeable member	eaci17_s11bp1				

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
	for crops on the exploited land, land's location, mean of transportation used to go on land, time necessary to go from household to land, year of acquisition of the land, land's seller, type of ownership, counterpart paid to the real owner according to the type of ownership the household has on the land, ownership title the household has, land's purchase value, transaction charges, land's topography, soil type, soil quality, type and cost infrastructures built to fight erosion the past 12 months, status of exploitation, revenues from leasing, type and cost of irrigation and dewatering, water access on the land, cost of ploughing method used.						
11-C- Crops	Type of crops on each parcel, system of cropping, proportion of land used for the type of crop, type, quantity and cost of seeds used, where seeds were acquired, seeding starting date, expectations for and estimation of next harvest, changes in land portion exploited compared to previous year, reasons of the change.	Household Head or most knowledgeable member	eaci17_s11cp1				
11-D- Agricultural inputs and Institutions	Relations with agricultural institutions, type of input supplied by institutions.	Household Head or most knowledgeable member	eaci17_s11dp1				
11-E- Labor	Utilization of labor force in the form of familial labor, non-familial labor, support groups; repartition of the labor force per gender and age categories	Household Head or most knowledgeable member	eaci17_s11ep1				

First Visit				Second visit			
SECTION	CONTENTS	RESPONDENT	FILE NAME	SECTION	CONTENTS	RESPONDENT	FILE NAME
	(whether the worker is more or less than 15 years old)						
11-F-Arboriculture	List of trees or perennial crops on exploited land, repartition of the trees on the land, proportion of land occupied by the trees, number of trees on the land, number of trees planted the past 12 months, number of months the trees where harvested over the past 12 months, quantity harvested, consumed, sold and given to other households during those harvest months, revenues from sales, ID code of member controlling the revenues, types of market/buyers for the perennial crops, transportation expenses.						

Annex 2: Description of the geovariables provided in the dataset **EACI_Geovariables**

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
	DNR & World Bank	Distance to Main Road	dist_road	Continuous	2007	N/A	Distance to nearest major road (class 'Routes Nationales')	
	T. Brinkhoff: CityPopulation	Distance to Towns	dist_popcenter	Continuous	2009	N/A	Distance to nearest town of >20,000 based on 2009 Census	http://www.citypopulation.de
	UNOCHA/ WFP	Distance to Border Posts	dist_border	Continuous	N/A	N/A	Distance to nearest border control post	
	INSTAT	Distance to Regional Capital	dist_admctr	Continuous	N/A	N/A	Distance to the capital of the region of residence	
Climatology	UC Berkeley	WorldClim Bioclimatic Variables	af_bio_1	Continuous	1960-1990	0.008333 dd	Average annual temperature calculated from monthly climatology, multiplied by 10 (°C)	http://www.worldclim.org/bioclim
	UC Berkeley	WorldClim Bioclimatic Variables	af_bio_8	Continuous	1960-1990	0.008333 dd	Average temperature of the wettest quarter, from monthly climatology, multiplied by 10. (°C)	http://www.worldclim.org/bioclim
	UC Berkeley	WorldClim Bioclimatic Variables	af_bio_12	Continuous	1960-1990	0.008333 dd	Total annual precipitation, from monthly climatology (mm)	http://www.worldclim.org/bioclim
	UC Berkeley	WorldClim Bioclimatic Variables	af_bio_13	Continuous	1960-1990	0.008333 dd	Precipitation of wettest month, from monthly climatology (mm)	http://www.worldclim.org/bioclim
	UC Berkeley	WorldClim Bioclimatic Variables	af_bio_16	Continuous	1960-1990	0.008333 dd	Precipitation of wettest quarter, from monthly climatology (mm)	http://www.worldclim.org/bioclim
Landscape Typology	IIASA-IFPRI	Cropland Map v8	hybrid_V8	Continuous	2009	0.008333 dd	Percentage cropland ranging from 0 to 100	http://ionia1.esrin.esa.int/
	IFPRI	IFPRI standardized AEZ based on elevation, climatology	ssa_aez09	Categorical		0.00833 dd	Agro-ecological zones created using WorldClim climate data and 0.0833dd resolution LGP data from IIASA.	http://harvestchoice.org/production/biophysical/agroecology
	WorldPop	Mali 2009 Population Density v 2b	popdensity	Categorical		0.00833 dd	Population per square kilometer, aggregated from source.	https://www.worldpop.org/

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
Soil & Terrain	NASA	SRTM	srtm1k	Continuous		0.00833 dd	Elevation (m), aggregated to 1km block	ftp://xftp.jrc.it/pub/srtmV4/arcasci/
	AfSIS	Topographic Wetness Index	twi	Continuous		0.000833 dd	Downloaded from AfSIS website. Derived from modified 90m SRTM. Local upslope contributing area and slope are combined to determine the potential wetness index: WI = ln (A s / tan(b)) where A s is flow accumulation or effective drainage area and b is slope gradient.	http://www.ciesin.columbia.edu/afsis/bafsis_fullmap.htm#
	FAO	Harmonized World Soil Database	sq1	Categorical		0.083333 dd	Nutrient availability	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
	FAO	Harmonized World Soil Database	sq2	Categorical		0.083333 dd	Nutrient retention capacity	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
	FAO	Harmonized World Soil Database	sq3	Categorical		0.083333 dd	Rooting conditions	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
	FAO	Harmonized World Soil Database	sq4	Categorical		0.083333 dd	Oxygen availability to roots	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
	FAO	Harmonized World Soil Database	sq5	Categorical		0.083333 dd	Excess salts	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
	FAO	Harmonized World Soil Database	sq6	Categorical		0.083333 dd	Toxicity	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
	FAO	Harmonized World Soil Database	sq7	Categorical		0.083333 dd	Workability (constraining field management)	http://www.iiasa.ac.at/Research/LUC/External-World-soil-database/HTML/
Crop Season Parameters	NOAA CPC	ARC 2	anntot_avg	Continuous	1983-2012	0.1 dd	Long-term average annual total rainfall (mm)	ftp://ftp.cpc.ncep.noaa.gov/fews/fewsdata/africa/arc2
	NOAA CPC	ARC 2	wetQ_avg	Continuous	1983-2012	0.1 dd	Long-term average total rainfall in wettest quarter (mm) within 12-month period	ftp://ftp.cpc.ncep.noaa.gov/fews/fewsdata/africa/arc2
	NOAA CPC	ARC 2	wetQ_avgstart	Continuous	1983-2012	0.1 dd	Average start of wettest quarter in dekads 1-36, where first dekad of Jan =1	ftp://ftp.cpc.ncep.noaa.gov/fews/fewsdata/africa/arc2

Theme	Source	Dataset Title	Variable Name	Variable Type	Reference Period	Resolution	Description	Web
	NOAA CPC	ARC 2	h2017_tot	Continuous	2017	0.1 dd	12-month total rainfall (mm), starting January 2017	ftp://ftp.cpc.ncep.noaa.gov/fews/fewsdata/africa/arc2
	NOAA CPC	ARC 2	h2017_wetQ	Continuous	2017	0.1 dd	Total rainfall in wettest quarter (mm) within 12-month periods starting January 2017	ftp://ftp.cpc.ncep.noaa.gov/fews/fewsdata/africa/arc2
	NOAA CPC	ARC 2	h2017_wetQstart	Continuous	2017	0.1 dd	Start of wettest quarter in dekads 1-36, where first dekad of January 2017 =1	ftp://ftp.cpc.ncep.noaa.gov/fews/fewsdata/africa/arc2
	NOAA CDR	NDVI version 4	ndvi_avg	Continuous	1983-2012	0.05 dd	Long-term average NDVI value in primary growing season (highest quarter)	Google Earth Engine, accessed Jan 2019
	NOAA CDR	NDVI version 4	ndvi_max	Continuous	1983-2012	0.05 dd	Long-term maximum dekadal NDVI value in primary growing season (highest quarter)	Google Earth Engine, accessed Jan 2019
	NOAA CDR	NDVI version 4	h2017_avg	Continuous	2017	0.05 dd	Average NDVI value in primary growing season (highest quarter) in 2017	Google Earth Engine, accessed Jan 2019
	NOAA CDR	NDVI version 4	h2017_max	Continuous	2017	0.05 dd	Maximum dekadal NDVI value in primary growing season (highest quarter) in 2017	Google Earth Engine, accessed Jan 2019