RESEARCH PROGRAM ON
Climate Change, Agriculture and Food Security

Implementation Manual: CCAFS Climate-Smart Monitoring Framework

Tackling uptake of CSA options and perceived outcomes at household and farm level

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Alliance

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Abstract

As part of the Learning Platform (LP2) Participatory evaluation of Climate-Smart Agricultural (CSA) practices and technologies across the AR4D Climate-Smart Villages (CSVs) network, CCAFS Flagship 2 designed a new Integrated Climate-Smart Monitoring Framework to supports a global, systemic and standardized effort to build context-specific evidence on uptake of CSA options and the associated (perceived) outcomes at household and farm level.

The CSA Multilevel Framework provides standard metrics made of a set of Core (uptake and outcome) Indicators as well as Extended indicators (covering the enabling environment) designed to address the following research questions:

1) Who within each CSV community adopts which CSA technologies and practices (typology of adopting farmers) and which are their motivations or constraining factors? To which extent farmers access and use climate information services?

2) Which are the gender-disaggregated perceived effects of CSA options on farmers' livelihood (agricultural production, income, food security, food diversity and adaptive capacity) and on key gender dimensions (participation in decision making, participation in CSA implementation and dis-adoption, control and access over resources and labor)

3) Which are the CSA performance, synergies and trade-offs found at farm level? (farm model analysis).

This manual aims to support future implementation of the CSA Monitoring framework in the field. It reflects all the learnings that came from its piloting and rollout phase (2018-2020) across 10 countries worldwide.

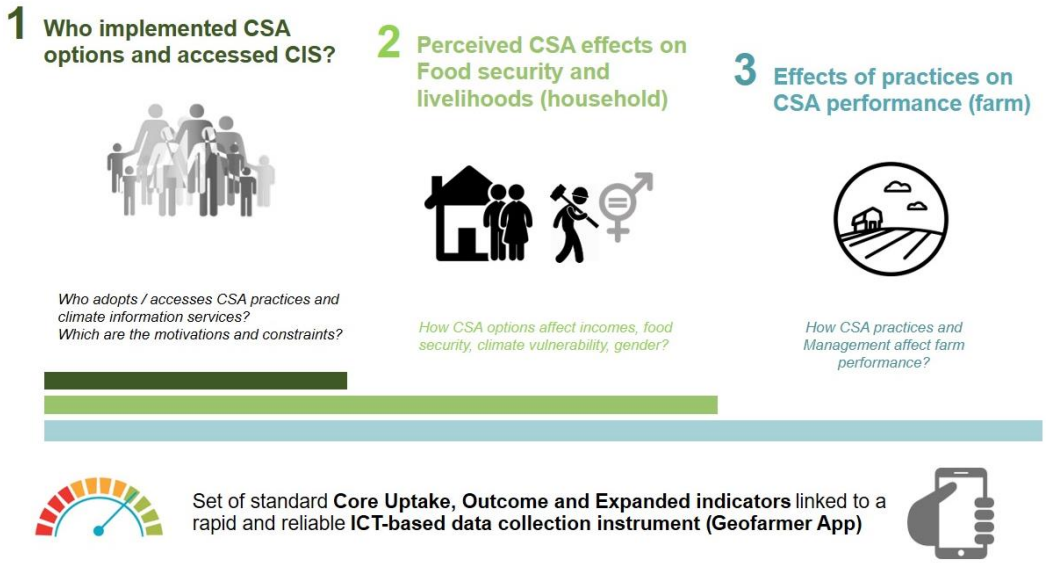
Keywords: *Climate-smart agriculture; metrics; indicators; monitoring; outcomes; adoption*

Content

Introduction

In its second Phase, and as part of the LP2. Participatory evaluation of Climate-Smart Agricultural (CSA) practices and technologies across the AR4D Climate-Smart Villages (CSVs) network, CCAFS Flagship 2 developed the Integrated CSA Monitoring Framework. This framework supports a global, systemic and standardized effort to build context-specific evidence on:

- Adoption trends, drivers associated with the implementation of CSA practices and technologies; and Access and use of climate information services (CIS)
- Gender-disaggregated perceived effects of the implementation of CSA practices on household level Income, productivity, food security, adaptive capacity and gender dimensions
- Effects of CSA practices and technologies on farm level performance (in terms of the three CSA pillars)



Overall, it aims to better understand to which extent farmers 'implementation of CSA options might lead to positive socio-economic and biophysical changes.

<u>The key research questions addressed include</u>:

- Who within each CSV community adopts which CSA technologies and practices (typology of adopting farmers) and which are their motivations or constraining factors? To which extent farmers access and use climate information services?

- Which are the gender-disaggregated perceived effects of CSA options on farmers' livelihood (agricultural production, income, food security, food diversity and adaptive capacity) and on key gender dimensions (participation in decision making, participation in CSA implementation and dis-adoption, control and access over resources and labor), and

- Which are the CSA performance, synergies and trade-offs found at farm level? (whole farm model analysis).

CSA Multilevel Monitoring Framework

The CSA Multilevel Framework provides standard metrics made of a set of ***Core Indicators*** linked to the research questions, and at household, an additional set of ***Extended indicators*** covering aspects related to the enabling environment:

At household level (17 Core indicators):

- **7 Core Uptake indicators** track *CSA Implementation and adoption drivers; CSA dis-adoption and drivers; Access to climate information services and agro-advisories, Capacity to use them and constraining factors.*
- **10 Core Outcome indicators** tackle farmers' perceptions on the effects of CSA practices on their Livelihoods, Food Security and Adaptive Capacity and on Gender dimensions. Those include namely: *CSA effect on yield/production, on Income, on Improved Food Access and Food Diversity, on Vulnerability to weather related shocks and on Changes in farming activities driven by access to seasonal forecast*.

  Four are **Gender related Outcome indicators**: *Decision making on CSA implementation, Participation in CSA implementation, CSA effect on labor time, Decision-making and control on CSA generated income.*

- An additional set of complementary **Extended indicators** allows to determine and track changes in enabling conditions and farmers characteristics such as: Livelihood security, Financial enablers, Food security, Frequency of climate-related events, Coping strategies, Risk Mitigation Actions, Access to financial services and Training, CSA Knowledge and Access to CSA training.

At farm level:

- 7 Core indicators are used to determine the CSA performance of the farms as well as synergies and trade-offs among the three pillars (productivity-adaptation and mitigation).

See annexes 1A and 1B for the detailed list of indicators.

GeoFarmer Smart-App for data collection

To facilitate data collection associated to the assessment of these standard indicators, and based on a principle of simplicity in structure and design, a set of thematic survey-modules were created in GeoFarmer (Eitzinger et al. 2019) and distributed to channels set up for the different Climate-Smart Villages. Local facilitators used then GeoFarmer to carry out interviews with farmers and fill the survey modules, where facilitators interviewed farmers GeoFarmer. Survey Modules include: *Demographic, Farming system, financial services, Climate events, Climate information Services, Food Security and CSA and to assess CSA impacts on farm performance: Farm Calculator, Animal Calculator and Crop calculator"*

Installed on tablets or cellphones, GeoFarmer allows a rapid (almost real time), reliable and systematic data collection, to track both adoption and outcomes related to CSA practices and technologies across the global CCAFS Climate-Smart Villages network.

The multi-language survey-modules for Climate-Smart Monitoring in GeoFarmers have been tailored, calibrated and validated across 14 countries (in Latin America, West and East Africa, South and South East Asia) with very diverse agro ecologies and farming systems, with the support of local teams, partners and farmers themselves.
Beyond its use on the context of the AR4D CSV work other practitioners have used the Framework and associated GeoFarmer App, tailoring it to their specific interest and using all or only some of the modules. Table 1 illustrates the criteria used to include or not a module across the CSVs monitoring exercise and the targeted persons within the households.

Implementation in the AR4D Climate-Smart Village Sites

The CSV monitoring was designed to be implemented across all the CSV sites prioritized by the CCAFS Regional Leader for the current CCAFS Phase (2018-2021).

Sampling framework

The basic sampling unit used for the CSA monitoring in the Climate Smart Villages is the same unit used in the CCAFS Households Baseline (HBS) or the defined biophysical or administrative boundaries of the CSV site, which in most cases includes (the same) 7 communities.

The sampling size for the CSA monitoring has to include:

- A strict minimum of 140 households[1].
- All the 140 households sampled in the CCAFS HBS (where applicable). See Annex 2 for details on the sampling criteria.
- All the households that have been "direct CCAFS beneficiaries" and involved in PAR activities (in some cases those are different from the HBS households!)

For farm-level CSA performance (completion of the Calculator modules):

- Select among the list of CSA adopting Households (HH) of the CSV, 8 to 10 HH that implement each of the Prioritized practices or "packages of CSA practices". For example if you prioritized 4 practices in your CSV then you will need ca. 32-40 farmers completing the Calculator Modules. It is essential that those HH also complete M1A (demographic information); the other M1B to M5 modules can be optional if not relevant to the focus of the work.

Households types and Identifiers (IDs)

The list of households to be target by the annual monitoring include three types which need to be clearly distinguished in the ***enumerators field sheets*** so that they can register this information in GeoFarmer during the data collection:

- HBS- All the CCAFS Baseline Household of the CSV (where relevant)
- BEN- All the households that have been involved in the testing/implementation of CSA practices in the context of CCAFS activities and considered "direct CCAFS beneficiaries".
- ADD- Those are *Other* households that have no link with CCAFS and thus might not be implementing CSA options (unless knowledge dissemination and learnings). This category might also be used when a new household is added (e.g to replace another one that e.g did not exist anymore).

[1] 140 was the sampling frame used in the CCAFS Baselines – See Kristjanson et al. 2011.

Table 1: Monitoring modules, frequency of use and target respondent.

Survey Modules	When to use it?	Description	Respondent
(M1A) Demographic (Individual)	*Always*	It includes the registration of the farmer ID, the household address, demographic characteristics and *personal* financial information.	**Two adult persons of opposite sex** involved in agricultural on farm activities: • The Agricultural Head • Second person Note: The "Agricultural head" completes additional questions on the general household characteristics and income
(M1B) Farming System	*Applicable in absence of calculator modules*	Records crops, animal and trees gowned in the farm	Only **Agricultural Head**
(M1C) Household Financial Services	*OPTIONAL (baseline and endline);* *Scale of question based on site specificity*	Includes information on access to financial services. Depending on the cultural CSV context, the Global CSV Monitoring team will choose: either M1D - financial services accessed at individual level (most of the cases) or M1C -financial services accessed at household level (e.g the case of Vietnam)	Only **Agricultural Head**
(M1D) Personal Financial Services (Individual)-			• The Agricultural Head • Second person
(M2) Climate shocks	*Always*	Gathers information on: i) frequency of climate events that affected agricultural production, adaption strategies and farming system changes implemented by the household.	Only the **Agricultural Head**
(M3) Climate Services (Individual) Access to Seasonal Forecast - OPTIONAL, site specific	*Always*	Gathers information on access and use of climate information services: Daily/weekly/short term (Always) and Seasonal forecast, associated training and changes made in response (if relevant to the specific CSV)	• The Agricultural Head • Second person
(M4) Food Security **(Female only)**	*Always*	Information about main food source, occurrence of food insecure periods and HFIAS	**Only the Female**
(M5) Climate-Smart practices (Individual)	*Always*	Information about level of knowledge and implementation of CSA options; effects on farm productivity and income, Food access and diversity, vulnerability to climate shocks, labor, access to resources and participation in decision making	• The Agricultural Head • Second person
Farm calculator modules	*OPTIONAL (it can be used when a quantitative assessment of the climate-smartness*	Gathers information on: 1. Crop management and production (seeds, fertilizers, pesticides application,	• The Agricultural Head But can be accompanied by other family members

	of the farm is needed	amount produced, sold or self-consumed, costs and prices). 2. Animal management and production (feeding practices, animal sod, purchased or self-consumed 3. the caloric needs of the family and the home garden	involved in on-farm activities

Target farmers

The CSA monitoring aims to track the evolution and temporal changes observed in:

- The CSV households or farmers directly involved in CCAFS' PAR activities (expected to be adopting the climate-smart practices) .
  However, when possible, it will also examine the trends of other "non-CCAFS beneficiaries" (non CSA adopters) that might belong to either the group of households visited during the CCAFS Baseline survey or to other non-CSA adopters.

This will allow tracking progress of CSA beneficiaries and the appearance of new CSA adopters potentially fostered by farmer-to-farmer knowledge dissemination or exchange.

IMPORTANT: It is important to point out that this is not An Impact Assessment but rather a Monitoring exercise and as such its goal is not is not to attribute changes observed in the CSV communities to the program. The CSA monitoring has a very specific focus on adoption of CSA practices, technologies, and climate information services and weather farmers perceive that this is helping their households to adapt to, and mitigate, climate change impacts. It does not cover the wide range of CCAFS activities implemented as part of the CSV approach (beyond CSA evaluation and provision of climate information services).

Implementation Plan

A proposed implementation plan for the CSA Monitoring Plan at each CSV site should include details about each activity with respect to timeline, responsibility, location and budget (including other resources needed. An implementation plan should include the following components:

Translation of the Questionnaire

The questionnaire (Annex 3) has to be translated into the local language (where relevant). The enumerators need to use the translated questionnaire. This is important as each enumerator may be translating it differently and may be interpreting questions, rather than just translating them. Training of enumerators must be done using the translated questionnaires and not the version in English.

Other documents that might need to be translated:

- the App Menus in to local language if needed
- the Informed Consent to be uploaded into the App and be distributed to the Enumerators as support training material (Annex 4)

Gather the site-specific information

Step 1: Draw the list of Households in the CSV to be covered.

- Two months prior to the fieldwork, you will need to have:
  - The list of the CCAFS baseline Households (if the Baseline was done in your Site)
  - The list of CCAFS beneficiary households and,
  - The broader list of Village households (may be available from village authorities) to randomly select "Non- CCAFS households "to be covered. Ensure obtaining permission from the village authorities to compile/confirm/update the list of households. Ideally, the village authorities will also inform the community members on the purpose of the Monitoring exercise so as to avoid suspicion or conflict while the list is drawn.

Then check for the condition that applies to your CSV following the indicated steps:

If yours is a CSV Sites with existing CCAFS Baseline	If yours is a CSV sites where the CCAFS Household Baseline was NOT done
1. Include the 140 CCAFS Baseline households (= **HBS**): with 20 households in each of the 7 CSV-communities. *A check is recommended prior to CSV Monitoring to see if these farmers are still there, have moved....etc* Note: The Original household ID and the household type (HBS) will be included in the Form "List of households and farmers names" aside to the standard household ID /address code	1. Include all the farmers of the CSV communities, that have been involved in CCAFS CSA implementation activities ("direct CCAFS beneficiaries"= BEN). Note: This household type (BEN) will be included in the Form "List of households and farmers names" aside to the standard household ID /address code.
2. Include all the farmers that have been involved in CCAFS CSA implementation/evaluation activities ("direct CCAFS beneficiaries" = BEN) during the period to be monitored – should these households not be already included in the group above (HBS).	2. Randomly select a roughly equivalent number of "Non-CCAFS" households in the same communities to be surveyed for comparative purposes[2] (= ADD).
3. Check that your total number of households to be surveyed does not go below 140 and that **it reflects a balanced number (roughly 50:50) of CSA adopters (or "direct beneficiaries") and** Non CCAFS that might belong to the HBS or to ADD households categories.	
4. If the list coming out from 1) and 2) are mainly adopters, additional non-adopting ("ADD") households should be pre-identified and included in the list.	N.A

Step 2: Create the list of Households and IDs to be used by the enumerators

- Please complete the Excel file **"List of Households IDs and Enumerators Sheet Template"** (ANNEX 5) and sent it back to the Central CSA Monitoring team (FP2). This document:
  - Explains the household Types to be identified and covered by the monitoring and the Standard format to be used for the Households ID creation
  - Provides the short name of the CSV to be used in the HH IDs
  - Describes the Modules to be asked
  - Provides the template to gather the List of households and the Template to be completed and shared with the Enumerators with all the HH to be surveyed

The starting point, the list of Households will be registered in the Sheet "*List of Households* (See example below)

[2] This does not aim in any way to perform an impact assessment. The monitoring aims to keep a track on the evolution of CSA adoption in the sample of CCAFS beneficiaries and potential farmer-to-farmer CSA knowledge dissemination.

Village-Name	VILLID	HH type curent year	Main agricultural person - Head AG (First)		Gender
			First Name	Family Name	Male or Female
Tula	1	BEN	Almaz	Alemu	Female
Tula	1	BEN	Degefech	Gebre	Female
Tula	1	BEN	Abayneh	Lentiso	Male
Gatame 1	7	ADD	Zeleke	Abiyo	Male
Gatame 1	7	ADD	Dagefe	Tesfaye	Male
Gatame 1	7	ADD	Fikire	Azaza	Male

Step 3: Gather information needed to tailor the questionnaire to your site conditions

- Two months prior to the fieldwork, the Regional/Local monitoring coordinator should gather the site and year specific information needed to tailor the CSA monitoring App and Questionnaire. Although those are standard instruments, a few items might change from site to site or from year to year.

Please complete the World file the Excel file "**Preliminary Info to tailor Questionnaire"** (ANNEX 6) and those back to the Central CSA Monitoring team. Information requested there includes:

- Names of the Villages/communities included in the CSV site
- Main Ethnic groups present in the CSV
- Sampling period to be covered by the monitoring questions
- Specific "Hunger" or most difficult month or period in the year in terms of access to enough Food
- Most frequent/strongest climate shocks affecting agricultural production that occurred in the CSV during the period to be monitored
- CSA Practices been tested in the CSV and targeted by the monitoring exercise
- Climate information services available (Daily/ Weakly weather forecast (short term) and or Season forecast (long term)
- Main crops in the CSV
- Main animals raised (productive purpose)
- Main Trees grown (productive purpose)
- Main measurement units used in the CSV for agricultural products, production inputs
- Local Currency
- Confirmation if questions on access to financial services should be made at household or individual level (According to the context)
- Phone number format for that country (e.g 57+ 8 numbers)

Step 4: Create the CSA practice glossary

- Two months prior to the fieldwork, please complete the PPT file *Glossary of CSA practices,* which will be used in the enumerators training and in the CSA monitoring documentation process (Annex 7).

Identification of the implementation team

In order to prepare the field work you will need to establish:

- The ToRs for the Monitoring supervisor
- Identify and recruit the team of men and women enumerators
- Design and plan for the enumerators training, identify a suitable training Venue with **excellent** Internet Access

- Prepare the training and field work materials for the enumerators

The recruitment of well-qualified Field supervisor and enumerators to conduct the interviews is crucial to this process!

Guidelines for Field supervisors

Duties of the local Monitoring supervisor (moderator role in GeoFarmer channel) include to:

- Ensure that the logistic arrangements and materials for each visit are sorted out before departure to the field.
- Engage with the relevant authorities to ensure that the Monitoring survey can be carried out in every selected village
- Ensure a good household listing form is prepared in each selected village
- Join as an observer the process of interviewing in the villages. This should be random checks while the enumerators interview the respondents. The aim is to do quality control on the way the questions are asked and the information is recorded.
- Check daily with each enumerator (facilitator role in GeoFarmer channel) the number of HH sampled, gather feedback/provide required support if needed and ensure that the data are properly submitted (through internet connection). Keep track of number of Surveys done daily in each of the villages so that at the end of the Monitoring this numbers can be compared to the data recorded in the central CIAT database.
- Ensure that the target sample size has been successfully reached, collect and check the Enumerators Field Sheets and Share back them back with the CIAT team.
- Present a field report to the Regional CCAFS leader and CIAT Team highlighting any events that were different from the plan, specific comments about the performance of the team of enumerators, justification for replacements, and any observations he/she may consider pertinent for the interpretation of the data from the village. The enumerators Sheets should also be included.

The field supervisors act as team leaders in the field and will participate in the training event for enumerators before data collection starts. This person assumes the duties of a supervisor and is responsible for the smooth implementation of data collection through managing logistics on the ground, managing the enumerators in the field and troubleshooting where needed. The supervisor needs to speak the local language and make sure that the questionnaire has been correctly translated.

The field supervisor has important role to play in adequately entering the village, introducing the Monitoring purpose and team to the village leaders. This person has to engage actively throughout the data collection process to ensure smooth implementation and high data quality standards.

The supervisor needs to ensure that all the surveyed households are georeferenced (Activation of the GPS option in the enumerators Cellphones). This is particularly important as CCAFS is planning to revisit the same households yearly.

Enumerator management is critical for the successful implementation of the data collection process, as well as for data quality assurance. The supervisor has to engage closely with the enumerators, provide support and supervision in the field as needed and manage any concerns that may arise during the data collection process. The supervisor has to ensure that enumerators stay motivated throughout the process, countering any symptoms of enumerator fatigue appropriately. The supervisor needs to monitor enumerators, carry out surprise visits and actively manage the enumerators to adhere to high standards of interviewing.

Guidelines for enumerators

The enumerators (facilitator role in GeoFarmer channel) need to be experienced and qualified in the following:

- collecting data through quantitative questionnaires and ICT tools
- engaging farmers in open-ended semi-structured questionnaires, including listening, processing and probing for more detailed answers,
- subject matter specialists with good knowledge of CSA practices and climate information services promoted in the CSV, local farming systems, crop and livestock management or livelihoods (including familiarity with local practices, units used by the farmers etc)
- speaking the local language

Thus, the enumerators to be recruited need to have good quantitative and qualitative data collection experience with interactive skills, as well as subject matter specialists. They need to be good speakers of the local language the interview will be conducted in.

Enumerators Training

A few days prior to the data collection a 2 to 3 days training sections should be organized to explain the CSA monitoring rationale, support data collection instrument (GeoFarmer) and support materials to a team of at least 8 (male and female) enumerators.

Training of supervisors and enumerators is crucial to ensure good quality data for the CSA monitoring. While most teams are experienced in survey work, we would like the Monitoring team leaders to take into account the following elements for this training.

- The process of training is the responsibility of the Local Monitoring team leader.
- The training event has the following objectives:

    1. To familiarize the field teams with the objectives of the monitoring survey, with the methodology and ICT instrument used for data collection and the reasons why this level of standardization is required.
    2. Supervisors and enumerators must be able to apply the sampling procedures described in this manual.
    3. Supervisors and enumerators must have an in-depth knowledge and understanding of each question in the survey questionnaire. This is more than being familiar with the questions, it implies knowing what is being asked, why it is being asked (the metrics calculated with the data collected) and how it should be asked.
    4. To explain the roles and responsibilities of each member of the field team, and how a chain of responsibilities has been established to help in ensuring data quality.

- The training event must include the following activities:
    1. Discussion of entry procedures to ensure that the required protocol is followed in the field. This includes entry into the village and the introduction of the survey to the respondents, for the latter in particular the use of the paragraph for **obtaining consent**.
    2. Discussion of the roles and responsibilities of different members of the team.
    3. Reading, discussing and using the questionnaire under classroom conditions. It is recommended that demonstrations by the team leader or competent members of the team on how to conduct the interview are planned as part of the process of familiarization with the questionnaire. Role-plays where enumerators take the place of interviewees and interviewers should be organized, witnessed by members of the field team and discussed to improve the ability of the enumerators to carry out interviews. This exercise should also allow the enumerators to get familiar with the different “tree-branches” that a survey can have dependent on the responses given. It is recommended that they use the Question Tree

document as a guidance to try all the possible paths

4. Preparation of the Households list to be distributed to each enumerator (by the field supervisor).
5. It is also recommended to plan for at least 1 day of field-testing of the questionnaire, where each enumerator can apply the Monitoring questionnaire to other volunteer farmers (not to be covered by the Monitoring). During this field- base practice enumerators and supervisors can put in practice the process of household selection, registration of the farmers, geo-referencing of households and interviewing. This experience must be then discussed at the end of the day to share feedback and drawn lessons.
6. Planning the field implementation (distribution of HH/villages to be covered by each enumerator; printing the support materials etc).

Practical guidelines to roll-out the gender-disaggregated CSA monitoring

The data collection includes the following activities (by the field supervisor):

- Establishment of a sampling plan in agreement with local authorities and farmers
- Establishment of the enumerators teams (a male and a female – to interview the female farmer)
- Preparation and distribution of the list of HHs to be covered by each enumerators (to avoid duplications)
- Printing and distribution of Enumerators FieldSheet. All these sheets will be gathered and compiled in a single file (Excel) at the end of the data collection period to be shared with the CIAT team.
- Implement the GeoFarmer survey in at least 20 households in each village (exact number depending of the total list of each site)
- Enumerators to report back to the field supervisor daily to ensure follow up of the progress made and potential issues.
- Important note: In cases where a HH from the list cannot be reached or does not exist any more, the enumerator should ask the Supervisor to provide him/her with a new HH address (And not creating it himself to avoid duplications with other enumerators teams that could also need to add other HH)

At the end of the sampling period the Supervisor should:

- Gather all the information from the Enumerators sheets and shares it back to the CIAT team to pursue the data cleaning (in the central database).
- Writes and submit to CCAFS the implementation report.

Five key things to keep in mind:

1. Do recall to the enumerators that this survey is based on interviews of **two individuals per household**. They should be adults, actively involved in **agricultural activities of the farm** (re: decision-making and/or implementation). We define them as:
   - ✓ The **Head Ag** (Main person in charge of the on-farm activities) how might or not be the official Head of the household;
   - ✓ A **second person** – of opposite sex also **involved** in on-farm activities.

   NOTE: Enumerators need to be clearly instructed on this. We don't want to interview a head of household if he is not actively involved in the agricultural activities of the household (e.g now he is too old or he actually does not work on Agriculture or works outside). So they should look for the "Main Agricultural" person and not necessarily for the Head!

2. All of the questions refer to people who are regularly resident in the household. We are using the following definition of a household:

   'A household is composed of a group of people living in the same dwelling space who eat meals together and have at least one common plot together or one food/income-generating activity together (e.g. herding, business, fishing) and acknowledge the authority of a man or woman who is the head of household' (Beaman and Dillon, IFPRI, 2010).

3. The persons to be interviewed in each household, they will NOT have to complete all the same survey modules. Some sections (referring to the general household characteristics or the occurrence of climate shocks) are designed to be only done once - to the "Agricultural Head". (See *Target respondent* in Table 1 above)

4. The field Supervisor should open the Excel file *List of Household previously completed and* prepare the files for each enumerator, according to the decided distribution of villages/HH to be covered, to avoid any duplication (two enumeators temas visiting the same HH). Then print and distribute the Enumerators recording Field Sheet.

5. The Modules in the GeoFarmer App and the Enumerators recording Sheet will indicate which modules have to be completed by which of the two persons (depending if they are Head AG, male or Female) .
   *** The section about Food Security will always be ONLY responded by the Female interviewed in each household.*

Additional resources

Video	Introduction to GeoFarmer: https://www.youtube.com/watch?v=0m01T3CNBEk
Online course:	Introduction to GeoFarmer: https://learn.ciat.cgiar.org/
Brief	Eitzinger, A.; Bartling, M.; Feil, C.; Bonilla-Findji, O.; Andrieu, N.; Jarvis, A. (2020) GeoFarmer app: A tool to complement extension services and foster active farmers participation and knowledge exchange. Infonote. Cali (Colombia): International Center for Tropical Agriculture (CIAT); Salzburg (Austria): University of Salzburg Interfaculty Department of Geoinformatics (Z_GIS) 10 p.

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Annexes

Annex 1A. CSA Framework Indicators to tackle adoption and outcomes at household level (C.U: Core-Uptake; C.O: Core-Outcome; E.O: Extended-Outcome indicator; P/FS: Productivity and Food Security; A: Adaptation)

Indicator Category: Core			
Type: Uptake			
Indicator	**Metric**	**CSA pillar**	**CSA dimension**
[CU.1] Implementation of CSA practices	Percentage/Number of farmers and households implementing (specific or any) CSA practice(s).	A	Adaptive Capacity
[CU.1c] CSA area	Area with CSA practices across adopters households.	A	Adaptive Capacity
[CU.2] CSA adoption drivers	Percentage of famers' specific motivations to personally implement CSA practices	A	Adaptive Capacity
[CU.3] Dis-adoption of CSA practices	Percentage/Number Farmers and households that stopped implementing CSA practices.	A	Adaptive Capacity
[CU.4] CSA dis-adoption drivers	Percentage of farmers' specific motivations to personally stop implementing a specific CSA practice.	A	Adaptive Capacity
[CU.5] Access to climate information services and agro-advisories	Percentage/Number of farmers accessing climate information services and agro-advisories	A	Adaptive Capacity
[CU.6] Capacity to use climate information	Percentage of farmers using climate information to take agricultural-related decisions	A	Innovative Capacity
[CU.7] Constraining factors to the use of climate information	Percentage of farmers reporting specific constraints to the use of climate information	A	Innovative Capacity
Type: Outcome			
[CO.1] CSA effect on yield/production	Percentage of farmers reporting perceived effects of CSA practices on agricultural yield/production.	P/FS	Livelihood security
[CO.2] CSA effect on income	Percentage of farmers reporting perceived effects of CSA practices on incomes.	P/FS	Livelihood security
[CO.2a]Use of additional CSA generated income	Percentage of farmers reporting specific uses of additional CSA-generated income.	P/FS	Livelihood security
[CO.3] CSA effect on improved food access	Percentage of farmers perceiving improved food access associated to CSA implementation	P/FS	Food security
[CO.4] CSA effect on improved food diversity	Percentage of farmers perceiving improved food diversity associated to CSA implementation.	P/FS	Food security
[CO.5] CSA effect on decreasing vulnerability to weather related shocks	Percentage of farmers with decreased vulnerability to weather related shocks because of CSA implementation	A	Adaptive Capacity
[CO.6] Changes in farming activities driven by seasonal forecast	Percentage of farmers undertaking changes in farming activities (crop and animal related) in response to seasonal forecast	A	Adaptive Capacity
[CO.7] Decision making on CSA implementation	Percentage of farmers reporting participating to some degree in decision making on CSA implementation.	A	Gender
[CO.7a] Decision making on CSA dis-adoption	Percentage of farmers reporting participating to some degree in decision making on CSA dis-adoption	A	Gender
[CO.8] Participation in CSA implementation	Percentage of farmers reporting a degree of participation in CSA implementation work.	A	Gender
[CO.9] CSA effect on labor time	Percentage of farmers reporting specific effect of CSA implementation on their labor time.	A	Gender
[CO.10] Decision making and control on CSA generated income	Percentage of farmers reporting control over resources generated by CSA practices	A	Gender

Indicator category: EXTENDED			
Type: Outcome			
Indicator	**Metric**	**CSA pillar**	**CSA dimension**
[E.1] Frequency of climate-related events affecting agricultural incomes	Percentage of households whose agricultural income was affected by a specific climate-related event	P/FS	Schock
[E.2] Households' agricultural income reduction	Percentage of households that faced reduction in agricultural related incomes.	P/FS	Schock
[E.3] Households' climate driven reduction of on-farm production or income	Percentage of households that faced climate-related reduction in on-farm production/income.	P/FS	Schock
[E.4] Household' agricultural income	Percentage of households whose main income came from agricultural activities.	P/FS	Livelihood security
[E.5] Households'main agricultural income source (On vs Off-farm)	Percentage of households whose main agricultural income source came from on-farm versus off-farm activities.	P/FS	Livelihood security
[E.6] Agricultural income dependency	Percentage of farmers with an agricultural related income.	P/FS	Livelihood security
[E.7] Households'main food source	Percentage of households accessing specific main food sources	P/FS	Food security
[E.8] Households'fulfillment of basic food needs	Percentage of households (adopters and non-adopters) reporting some degree of food access insecurity over the monitored period.	P/FS	Food security
[E.9] Households'Food Insecurity Access Scale (HFIAS)	Percentage of households with specific HFIAS scores	P/FS	Food security
[E.10] Househods'Food Insecurity Access Prevalence (HFIAP)	Percentage of households falling under the specific HFIAP score categories (Food secure, ligthly food insecure; moderately food insecure, severely food insecure)	P/FS	Food security
[E.11] Agricultural saving capacity	Percentage of farmers able to make savings from agricultural incomes.	A	Absortive Capacity
[E.12] On-farm Investment capacity	Percentage of farmers investing in on-farm activities	A	Absortive Capacity
[E.12a] On-farm "climate intended" Investment	Percentage of farmers making "climate intended" investments in their farming activities	A	Absortive Capacity
[E.13] Access to agricultural credit	Percentage of farmers accessing loans or credit for agricultural	A	Absortive Capacity
[E.13b] Climate-driven access to agricultural credit	Percentage of farmers accessing agricultural credit to recover from or to be better prepared against a climate related shock.	A	Absortive Capacity
[E.14] Access to agricultural insurance	Percentage of farmers that accessed/used an insurance to cover animal or crop damages	A	Absortive Capacity
[E.14a] Access to "climate intended" agricultural insurance	Percentage of farmers accessing agricultural insurance to recover from a climate related shock affecting production	A	Absortive Capacity
[E.15] Access to financial incentives from buyers/input providers	Percentage of farmers receiving specific financial incentives from buyers or input providers	A	Absortive Capacity
[E.16] Households' coping strategies	Percentage of households implementing different coping strategies in response to climate-related events	A	Absortive Capacity
[E.17] Households'changes in cropping activities	Percentage of househodls that for some reason (climatic or not) made changes in their cropping activities.	A	Adaptive Capacity
[E.17a] Households' Autonomous changes in cropping activities	Percentage of households that made autonomous changes in cropping activities.	A	Adaptive Capacity
[E.17c] Households' Climate-induced changes in cropping activities	Percentage of households that made changes in cropping activities in response to climate-related events.	A	Adaptive Capacity
[E.18] Households' changes in animal-related activities	Percecntage of households that for some reason (climatic or not) made changes in their animal-related activities.	A	Adaptive Capacity
[E.18a] Households'Autonomous changes in animal-related activities	Percentage of households that made any type of autonomous changes in theiranimal-related activities	A	Adaptive Capacity
[E.18c] Households'Climate-induced changes in animal related activities	Prcentage of households that made changes in animal-related activities in response to climate events	A	Adaptive Capacity
[E.19] Innovative changes in farming activities	Percentage of households (affected or not by climate) that made innovative changes in farming activities.	A	Innovative Capacity
[E.19a] Autonomous Innovative changes in farming activities	Percentage of households (not affected by climate events) that made innovative changes in farming activities.	A	Innovative Capacity
[E.19b] Climate induced innovative changes in farming activities	Percentage of households that made innovative changes in farming activites induced by climate impacts	A	Innovative Capacity
[E.20] CSA knowledge	Percentage of farmers reporting different degree of knowledge on CSA practices	A	Innovative Capacity
[E.21] CSA interest by “non-adopters”	Percentage of farmers interested in more information on CSA practces	A	Innovative Capacity
[E.22] Access to CSA training	Percentage of farmers trained on CSA practices.	A	Innovative Capacity
[E.23] Access to seasonal forecast training	Percentage of farmers trained on seasonal forecast	A	Innovative Capacity
[E.24] Access to value chain training	Percentage of farmers accessing value chain training (e.g on agribusiness or financial services)	A	Innovative Capacity

Annex 1B. CSA Framework Indicators to assess farm-level performance, synergies and trade-offs across the three CSA pillars (C.O: Core-Outcome; P/FS: Productivity and Food Security; A: Adaptation; M: Mitigation)

Indicator category: Core		
Type: Outcome		
Indicator	**Metric**	**CSA pillar**
Caloric ratio of the farm	Percentage (Caloric supply / caloric demand x 100)	P/FS
Fodder ratio of the farm	Percentage (Fodder supply / fodder demand x 100)	P/FS
Cost/Benefit ratio	Percentage (Benefit / cost x 100)	P/FS
Biodiversity index	(Gobbi and Casasola 2003)	A
Water balance	Percentage (Water supply/water demand x 100)	A
Nutrient balance	Percentage (Nutrient supply/nutrient demand x 100)	A
Emission / Sequestration of CO_2	(Cool Farm Tool)	M

ANNEX 2. Justification of the CCAFS Baseline sample size

The sample sizes of the CCAFS Household Baseline was:

- 1 block per site
- 7 villages per block
- 20 households per village = 7 x 20 = 140 households per block.

The number of household per block is based on the following ideas:

- We want reasonable estimates of all indicators at the block level.
- Many indicators are of the type 'percent of households who do X'. If we wanted to measure a change in this percentage from about 25% to 50% we require around 60 households (from standard power analysis). As we want to disaggregate by subgroups, assuming a disaggregation splits the population into two similar sized groups, we need to double this to about 120.
- Now add a few to compensate for intra-village correlation.

The number of villages is based on:

- Both village level and household level information is improved by maximizing the number of villages and reducing the number of households per village.
- All logistical costs (travel, overheads of getting permission, generating sampling frames, organizing village meetings etc) increase with number of villages.
- Without detailed cost information we take a guess: 7 villages is sufficient to find out if there is consistency within the block, 20 households per village is sufficient to have a good chance of capturing at least 1 household of any type that occurs in at least 10% of the population.

The overall sample size suggested does not include 'insurance' for extensive non-response or loss of data.

Annex 3. CSA monitoring Core questionnaire (M1A, M1D)

Module	Question	Q code	Responses choices
(M1A)	The following questions are about your household	info3	
(M1A)	How many of all household members do participate in on-farm agricultural activities?	NUAG	
(M1A)	What is the total productive area of the household farm?	ARPR	
(M1A)	The total household income was mainly from:	MHIC	Remittances | Both equally | Non-agriculture related activities | Agriculture related activities
(M1A)	The household main income source came mainly from:	INCS	Both equally | Other farms | Own farm
(M1A)	Did you personally got an income from agricultural related activities?	ICAG	
(M1A)	Did your personal income coming from agricultural activities allowed you to make savings?	SVIC	
(M1A)	Did you personally use a loan or credit for agricultural activities?	CREDP	
(M1A)	How many of the members of the household that participate in agricultural activities are young?	NUYO	
(M1A)	Do you personally own all the land you cultivate/use for agriculture activities?	OWNE1	I use the land for agriculture, but I don't own it | Most land is rented, some is owned | Most land is owned, some is rented | I own all the cultivated/used land | All land is rented
(M1A)	The following questions are about you	INFO1	
(M1A)	The following questions are about your personal financial assets	INFO2	
(M1A)	How many people are living in your household (total number)?	NUMB	
(M1A)	Are you a man or a woman?	GEND	Women | Man | Other
(M1A)	What year were you born?	YEAB	
(M1A)	What level of education do you have?	EDUC	None (no education) | Superior (University) | Technical/ Vocational (not university) | Secondary | Primary
(M1A)	Are you part of one of the following ethnic groups?	ETHN	Kembata | Other
(M1A)	Are you the main person who is involved in the on-farm agricultural work?	HEADAG	I am family member involved in agricultural activities | I am a family member but THE MAIN ONE involved in agriculural releated decisions | I am head of household and mainly involved in agricultural related decisions.
(M1A)	In which village is your household located?	LOCA	Gatame 1 | Duna | Tachignaw Genjo | Cholola 2 | Gewada | Suticho | Other | Tula
(M1A)	What is the household Address or project identifier?	ADDR	
(M1A)	Was this a CCAFS baseline study, a CCAFS beneficiary or an additional "control" household?	HBBE	CCAFS beneficiary | CCAFS Baseline | Other (additional)
(M1A)	Add farms (GPS) location	geom	
(M1A)	Do you personnally own a cellphone?	PHON	
(M1A)	Would you be willing to respond further surveys in the future if we make them by cellphone?	CALL	
(M1A)	What is your mobile phone number?	PHNB	
(M1B)	Which types of trees are growned on the farm?	TREE	Bamboo | Korch (Erythrina abyssinica) | Eucalyptus | Other trees
(M1B)	Were crops grown on your farm?	YCRO	
(M1B)	Which crops did you grown on farm?	CROP	Carrot | Beetroot | Cabbage/local cabbage | Enset | Beans | Potato | Barley | Wheat | Other crops
(M1B)	Were animals raised on your farm?	YANI	
(M1B)	Which types of animals are raised on the farm?	ANIM	Donkey | Honey bees | Poultry | Cattles | Sheep | Other animal
(M1B)	Were trees planted on your farm?	YTRE	
(M1D)	Did you use a loan or credit for agricultural activities?	CREDP2	
(M1D)	Was the purpose of the loan/credit intended to:	CRRCP	Help recover damages from previous climate shocks? | Be better prepared against Climate related shocks? | None of them (different purpose)
(M1D)	From whom did you borrow the money?	CRSCP	Private lender (informal) | NGO | From a bank (formal credit) | Family, friends | Cooperative or Microcredit Institution | Community Savings group
(M1D)	Was this a short term or long term loan?	CRTMP	Loan for more than 1 year | Loan for less than 1 year
(M1D)	What did you use the loan or credit for?	CRUSP	To make infrastructure investments | To change the type crop / animal grown / raised | To pay labour time | Other | Purchase management / production inputs
(M1D)	Did you invest money on your farming activities?	IVERP	
(M1D)	Was this investment intended to:	IVRCP	Prevent from climate related damages | Other purpose | Recover from climate related impacts
(M1D)	Was this investment a short term or long term investment?	IVTMP	Investment for more than 1 year | Investment for less than 1 year
(M1D)	Did you receive training on the use of financial products or services (e.g. credit, insurance)?	TRFIP	
(M1D)	Did you receive training on Agri-business development?	TRAGP	
(M1D)	From whom did you receive the financial training?	TRF1P	Don't remember | NGO | Government agricultural extension or Meteorogical office | Commercial / private company | Relative, neighbor or expert within the community | Other
(M1D)	From whom did you receive the training on Agri-business development?	TRA1P	Don't remember | NGO | Government agricultural extension or Meteorogical office | Commercial / private company | Relative, neighbor or expert within the community | Other
(M1D)	Did you receive any of the following benefits:	CRSUCOP	No, I did not receive benefits | Government/NGO agricultural failure subsidy | Loans from your buyers or input providers | Formal delivery contract to sell your products | Price bonus or price subsidy, to stimulate climate friendly production? | Other
(M1D)	Did you receive payouts from the insurance provider?	SEPYP	
(M1D)	What risk was covered by the insurance?	SERKP	Credit-life risk | Animal risk | Fruits and vegetables Risk | Other | Crop risk
(M1D)	From whom did you buy the insurance?	SESCP	input dealer | credit institution | insurance company | Other
(M1D)	Did you buy/had/use any insurance to cover damages in crops or animals?	SEGUP	
(M1D)	Was the purpose of the insurance to recover from a climate related shock affecting your agricultural production:	SERCP	

Annex 3. CSA monitoring Core questionnaire (continuation : M2, M3)

(M2)	Did any climate related events affected the household production or income?	CLIM	
(M2)	Did your household face any situation that led to the reduction of your agricultural-based production or income?	SITU	
(M2)	Would you like to respond to these questions for another Climate Event?	CEVMULTI	
(M2)	Select the one of the MAIN climate event that affected the agricultural production/income?	CEVX	(6) Drought | (5) Frost | (4) Low temperatures | (3) Storms/strong winds | (2) Irregular rains | (1) Heavy rains
(M2)	Because of the impact of [this specific event], did you (in the household) have to:	CMULT	Shift from on-farm to off-farm work? | Go elsewhere to get work for some time? | Look for new sources of income? | Sell assets to get money? | Withdraw children from school? | Rationing or skipping meals in your household? | Other | Reduce your expenses at home?
(M2)	In response to this climate impact, did you or anyone in your household have to use your savings or borrow money?	CMO	No, none of them | Yes, both of them | Yes, used savings | Yes, borrowed money
(M2)	Note that you have to repeat this section for EACH climate events that affected the household income	info1	
(M2)	If the changes involved introducing new crops/trees:	CCC3	No, we did not introduce new crops | Yes, but we have had them before | Yes, they were totally new, we never had them before
(M2)	As a result of the negative weather impacts did you in the household undertake changes in your cropping activities?	CCC0	Did not do any change | Changes done but not because of climate | Yes, changes done because of climate
(M2)	Which type of changes you made [regarding crops and trees]:	CCC12	Abandoned a crop | Introduction of more crops (diversification) | Changes in crops (substitution) | Changes in crop varieties (substitution) | Changing management practice of current cropping activities | Other | Changes in farm infrastructure or EQUIPEMENT
(M2)	Because of the negative weather impacts, did you (in the household) undertake changes in your animal related activities?	CCA0	Did not do any change | Changes done but not because of climate | Yes, changes done because of climate
(M2)	Which type of changes you made [regarding animal activities]:	CCA12	Abandoned an animal type | Introducing more animal types (diversification) | Change in animals (substitution) | Change in breed types (substitution) | Improving physical infrastructure | Selling, Relocation or migrating herd/stock | Changing pasture/ feed management | Changing herd/stock size | Other
(M2)	If the changes involved raising new animal types:	CCA3	No, we did not introduce new animal types | Yes, but we have had them before | Yes, they were new, we never had them before
(M2)	Did you (in the household) undertake changes in your cropping activities?	SCC0	
(M2)	Which type of changes you made [regarding crops and trees]:	SCC12	Abandoning a crop | Introduction of more crops (diversification) | Changes in crops (substitution) | Changes in crop varieties (substitution) | Changes in management practice of current cropping activities | Other | Changes in farm infrastructure or EQUIPEMENT
(M2)	The changes made involved introducing new crops/trees that you NEVER had before in the household?	SCC3	No, we did not introduce new crops | Yes, but we have had them before | Yes, they were totally new, we never had them before
(M2)	Did you (in the household) undertake changes in your animal activities?	SCA0	
(M2)	Which type of changes you made [regarding animal activities]:	SCA12	Abandoning an animal type | Introducing more animal types (diversification) | Change in animals (substitution) | Change in breed types (substitution) | Improving physical infrastructure | Selling, Relocating or migrating herd/stock | Changing pasture or feed management | Other | Changing herd/stock size
(M2)	If the changes involved raising new animal types:	SCA3	No, we did not introduce new animal types | Yes, we have had them before | Yes, they were totally new, we never had them before
(M3)	Did you personally have access to daily/weakly weather forecast?	CSD02	No | Yes, agroadvisory information was included | Yes, only weather forecast
(M3)	Through which channel did you receive the Weather forecast:	CSD1	Radio TV or Loudspeaker | Printed media or community bulletin | Cellphone or internet | Other | Personal contact or social group
(M3)	Which was the main type of management advisory you personally received?	CSD3	Animal management (livestock or fish) | Pest & Disease management | Crop management (Varieties, fertilizer use) | Other | Irrigation or Water management
(M3)	Were you ABLE to use the daily/weekly weather forecast to take a specific agricultural related decision?	CSD7	
(M3)	Why were you NOT ABLE to use it?	CSD8	I did not have the resource to implement changes | I did not know what decisions to make | I did not trust the information / was not accurate enough | I did not understand the information
(M3)	Did you personally have access to Seasonal forecast (expected rains for the next months)?	CSS02	No | Yes, agroadvisory information was included | Yes, only seasonal weather forecast
(M3)	Through which channel did you receive the Seasonal weather forecast:	CSS1	Radio TV or Loudspeaker | Printed media or community bulletin | Cellphone or internet | Personal contact or social group | Other
(M3)	Which was the main type of management advisory you personally received?	CSS3	Animal management (livestock or fish) | Pest & Disease management | Crop management (Varieties, fertilizer use) | Other | Irrigation or water management
(M3)	Were you ABLE to use the Seasonal forecast to take a specific agricultural related decision?	CSS7	
(M3)	Why were you NOT ABLE to use the Seasonal forecast?	CSS8	I did not have the resource to implement changes | I did not know what decisions to make | I did not trust the information / was not accurate enough | I did not understand the information
(M3)	In response to the seasonal forecast (rains for the nexts months)... did you undertake changes in your cropping activities?	CSC1	
(M3)	The main change you did in your cropping activities involved:	CSC23	Abandoning a crop | Introduction of more crops (diversification) | Changes in crops (substitution) | Changes in crop varieties (substitution) | Changing management practice of current cropping activities | Other | Changes in the farm physical infrastructure
(M3)	In response to the seasonal forecast (rains for the nexts months)... did you undertake changes in your animal activities?	CSC4	
(M3)	The main change you did in your animal activities involved:	CSC56	Improving physical infrastructure | Selling, Relocatiing or Migrating herd/ stock | Abandoning an animal type | Changing pasture/ feed management | Introduction of more animal types (diversification) | Changes in animals (substitution) | Changes in breed types (substitution) | Other | Changes in herd/ stock size
(M3)	Did you receive training on Seasonal forecast?	CSS4	
(M3)	From whom did you receive the training?	CSS5	I don't remember | Government agricultural extension or Meteorogical office | Commercial / private company | Other | Relative, neighbor or expert within the community

Annex 3. CSA monitoring Core questionnaire (continuation : M4, M5)

(M4)	During [the monitored period], the food eaten within your household came mainly from:	FSEG	External food support | Other family or community members | Was purchased (market) | On-farm (self) production
(M4)	During this period, have there been any months where access to enough food was difficult?	FSME	
(M4)	What were the most difficult months in terms of access to enough food?	FSPR	October to November | February to March | Other period
(M4)	If more than one, which period was THE MOST severe?	FSPR1	October to November | February to March | Other
(M4)	(1) Did you worry that your household would not have enough food?	HFIS1	
(M4)	(1) How often did this happen?	HFOC1	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(2) [Did it happen that] you (or any household member) ....were NOT ABLE to eat THE KIND OF FOOD you generally prefer to eat?	HFIS2	
(M4)	(2) How often .... ?	HFOC2	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(3) [...] have to eat a LIMITED VARIETY of foods due to a lack of resources?	HFIS3	
(M4)	(3) How often ... ?	HFOC3	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(4) [...] have to eat some FOOD THAT YOU really did NOT WANT to eat?	HFIS4	
(M4)	(4) How often ... ?	HFOC4	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(5) [...] have to eat a SMALLER MEAL than you felt you needed?	HFIS5	
(M4)	(5) How often .... ?	HFOC5	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(6) [...] have to eat FEWER MEALS per day?	HFIS6	
(M4)	(6) How often .... ?	HFOC6	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(7) Was there ever NO FOOD TO EAT of any kind in your household?	HFIS7	
(M4)	(7) How often.... ?	HFOC7	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(8) [...] go to SLEEP at night HUNGRY ?	HFIS8	
(M4)	(8) How often ... ?	HFOC8	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M4)	(9) [...] go a whole DAY AND NIGHT WITHOUT EATING anything?	HFIS9	
(M4)	(9) How often ... ?	HFOC9	Don't know or don't want to answer | Often (more than ten times) | Sometimes (three to ten) | Rarely (once or twice)
(M5)	In your opinion, did the CSA option allowed your household to be less affected by climate shocks?	PXW14	
(M5)	Please repeat this survey section for ALL the climate-smart practices proposed	PRAXX	
(M5)	Would you like to continue responding to the next CSA practice?	PRAXMULTI	
(M5)	In your opinion, did the implemention of [the CSA option] generate additional income for the household?	PXW8	
(M5)	In your household, what did you use this additional income for:	PXW9	We saved it | I cannot say | Buying non-agricultural assets or services | Buying food | Buying agricultural inputs / assets or services
(M5)	Did you personally decide or participate in the decision on how to use the money earned from the CSA option?	PXW10	
(M5)	In your opinion, did the implemention of [the CSA option] increased food availability?	PXW12	
(M5)	In your opinion, did [the CSA option] allow to have a higher variety of products for your household consumption?	PXW13	
(M5)	What was the main reason why you stopped implementing this CSA option?	PXA4	It was very expensive to implement | It required a lot of work | It did not help to adapt to climate/weather related events | It did not generate economic benefits | Other
(M5)	Did you personally decide or participate in the decision to stop implementing the CSA option?	PXA5	
(M5)	What was the main motivation for you to implement [the CSA option] on your farm/household?	PXW1	To adapt to future climate shocks | In response to a climate event | Because of new market opportunities | Because of learning or training | Other
(M5)	How much of your farm was covered by the CSA option?	AXSA	
(M5)	To which extent were you involved in the DECISION and the WORK associated the implementation of [the CSA option] on your farm/household?	PXWD	It was a joint decision and implementation of all family members working on the farm | Someone else decided but I did most of the work | Someone else decided, but I helped to implement the CSA option | I decided to implement the CSA option, but the work was mostly done by others | I decided to implement the CSA option and did most work alone
(M5)	From whom did you personally learn to implement the CSA option?	PXW3	Extension services or trainings | Self-learning | From a family member or neighbor | Other
(M5)	How the implementation of this CSA option affected the time you personally devote to agricultural activities?	PXW2	I spent the same amount of time | It made me spend more time | It made me spend less time
(M5)	What was the effect of [the CSA option] on your farm/household PRODUCTION?	PXW5	Production decreased | No effect on production | I can't say because it was new | Production increased
(M5)	Please select the MAIN CSA option first.	PRAX	Site specific list
(M5)	What was your level of knowledge [about the selected CSA practice] ?	PRALE	Never heard about it | STOPPED implementing | IMPLEMENTED it or helped implementing | KNOW but have NEVER done it | HEARD about it
(M5)	Would you like to receive information on about this CSA option?	PXIN2	
(M5)	Would you like to receive more information on about this CSA option?	PXIN	
(M5)	How did you personally learn to implement the CSA option?	PXA3	Training by technical assistance by other institution (No CCAFS) | Self-learning | From a family member or neighbor | Other

Annex 3. CSA monitoring Core questionnaire (CSA Calculator- Farm module)

Variable name	Description
Number of children of 0-5years old	Number of children for 0-5years of the household, the last 12 months
Number of children of 5-10 years old	Number of children of 5-10 years old of the houshold, the last 12 months
Number of children of 10-15 years old	Number of children of 10-15 years old ofthe household, the last 12 months
Number of young of 15-18 years old	Number of young of 15-18 years old of the household, the last 12 months
Number of adults 18-35 years old	Number of adults 18-35 years old of the household the last 12 months
Number of adults between 35 and 65 years old	Number of adults between 35 and 65 years old of the household the last 12 months
Number of adults > 65 years old	Number of adults > 65 years old of the household the last 12 months
Total area of the farm	This is the total area managed by the family the last 12 months including cultivated and grazing areas. The family can be owner or not of the land
Number of fruit/crop/animal production activities in the farm	Total number of fruit/crop/animal production activities in the farm the last 12 months to estimate the diversification of the farm
Total cultivated area	This is the total cultivated area the last 12 months managed by the family. The family can be owner or not of the land.
Total grazing area of the farm	This is the total grazing area of the farm used individually for the different livestock systems the last 12 months. The family can be owner or not of the land
Total fenced grazing area of the farm	This is the total fenced grazing area of the farm used individually for the different livestock systems the last 12 months. This area can be the same than the previous one if all the grazing area of the farm are fenced. The family can be owner or not of the land
Community grazing area	Use of a community grazing area the last 12 months
Total homegarden area of the farm	This is the total homegarden area that was managed by the family the last 12 months. The family can be owner or not of the land
Implementation of tree planting practice	Implémentation of tree planting (baobab, jujubier, tamarindus, goyava) the last 12 months
Implementation of Farmer Managed Natural Regeneration	Implémentation of farmer Managed Natural Regeneration the last 12 months
Implementation of Drought tolerant Improved Varieties	Implementation of drought tolerant Improved Varieties of millet, maize or groundnut the last 12 months
Implementation of reduced tillage	Implémentation of reduced tillage the last 12 months
Implementation of manure + microdose of inorganic Fertilizer	Implémentation of manure + microdose of Inorganic Fertilizer of NPK and urea the last 12 months
Implementation of organic fertilizer (Manure, compost)	Implémentation of organic fertilizer (Manure, compost) the last 12 months
Implementation of microdose of inorganic fertilizer of NPK-Urea	Implémentation of microdose of inorganic fertilizer of NPK-Urea the last 12 months
Use of a irrigation system in crops or homegardens	Use of a irrigation system in crops or homegardens the last 12 months
Name of the first crop grown in the homegarden	Name of the first crop grown in the homegarden the last 12 months
Amount self-consumed of the main crop in the homegarden	Amount self-consumed of the main crop in the homegarden the last 12 months. You can decide to fill an average amount per day, month or year
Name of the second crop grown in the homegarden	Name of the second crop grown in the homegarden
Amount self-consumed of the second main crop in the homegarden	Amount self-consumed of the second main crop in the homegarden the last 12 months. You can decide to fill an average amount per day, month or year
Name of the third crop grown in the homegarden	Name of the third crop grown in the homegarden
Amount self-consumed of the third main crop in the homegarden	Amount self-consumed of the third main crop in the homegarden the last 12 months. You can decide to fill an average amount per day, month or year
Amount of organic fertilizer used in the homegardens	Amount of organic fertilizer used in the homegardens
Average sales from homegardens	Average amount of sales coming from the homegardens the last 12 months. You can decide to fill an average amount per day, month or year
Land use change	Describe here if a land use change occured last year
Percentage of area converted	Percentage of area converted

Annex 3. CSA monitoring Core questionnaire (CSA Calculator- Crop module)

Variable name	Description
Total surface	This is the total area of all the fields where the crop was grown the last 12 months
Soil colour	This is the colour of the soil(s) where the crop was grown. Four types of colours are considered:brown, red, yellow, grey
Soil moisture	This is the moisture of soils where the crop is grown. Two types are considered: 'moist' for soils without any significant water constraint, of sumides pour des sols sans contrainte hydrique (included irrigated soils). Put 'dry' if for significant periods of the growing season water is limited (evaporation exceeds the rainfall)
Soil drainage	This is the drainage of the soils where the crop is grown. Typically, clay soils with limited drainage should be classed 'poor'. Otherwise, put 'good'. This mainly affects N2O emissions from soil.
Texture of soil	This is the texture of the soils where the crop is grown. Three types of texture are considered. 'Coarse' includes sand, loamy sand, sandy loam, loam, silt loam, silt. 'Medium' includes sandy clay loam, clay loam, and silty clay loam. 'Fine' includes sandy clay, silty clay, and clay.
Associated crop	Crop associated to the main crop the last 12 months
Proportion of the associated crop	Proportion of field concerned by the association the last 12 months
Total production of the main crop	Total production of the whole fields where the main crop was grown the last 12 months
Total production of the associated crop	Total production of the associated crop the last 12 months
Main mineral fertilizer used on the crop	Name of the main mineral fertilizer used on the crop the last 12 months
Application method of the main fertilizer	Various application methods of the fertilizer are proposed
Application rate of the main mineral	Application rate of the second mineral fertilizer on the crop the last 12 months
Purchase price of the main mineral fertilizer applied	Purchase price of the main mineral fertilizer applied on the crop, possibility later to add the price of a seconf mineral fertilizer
Second mineral fertilizer used	Name of the second mineral fertilizer used on the crop the last 12 months
Method of application of the second	Various application methods of the fertilizer are proposed
Application rate of the second mineral	Application rate of the second mineral fertilizer on the crop
Purchase price of the second mineral	Purchase price of the second fertilizer applied to the crop
Organic fertilizer used	Different types of organic fertilizers are proposed
Application method of the organic	Various application methods of the fertilizer are proposed
Amount of organic fertilizer applied	Amount of organic fertilizer applied on the crop the last 12 months
Purchase price of organic fertilizer	Purchase price of organic fertilizer on the crop
Number of applications of the main	Number of applications of the main pesticide on the crop the last 12 months
Management of crop residues	Different management of crop residues are considered
Proportion of crop residues managed under this mode	The previous variable describes different types of management of crop residues, here should be estimated the proportion of the crop residues that is managed under this mode.
Main associated tree	Name of the main tree on the fields of the crop
Density of the main tree	Density of the main tree in the fileds of the crop
Change in compost additions	Compost addition change on the crop the last 12 months
Tillage change	Here we indicate if a change in tillage method occured last year on the fields of the crop the last 12 months. Different tillage change are proposed
Change in manure incorporation method	Change in manure incorporation method on the fields of the crop the last 12 months
Change in incorporation mode of crop	Change in the incorporation mode of crop residues on the fields of the crop the last 12 months
Cost of clearing	Cost of clearing of the fields of the crop before or at the beginning of the last growing season (external workers, rent of equipment)
Tillage cost	Tillage cost of fields of the crop the last 12 months (external workers, rent of equipment)
Purchase price of seeds	Purchase price of the seeds of the main crop the last 12 months
Seed purchase amount	Seed purchase amount for the main crop the last 12 months
Associated crop seed purchase amount	Amount purchased for the crop that is associated to the main crop
Associated crop seed purchase price	Associated crop seed purchase price
Sowing cost of millet fields	Sowing cost of fields of the crop the last 12 months (external workers, rent of equipment)
Application cost of pesticides	Total cost of application of pesticides (herbicides+insecticides) on the fields of the crop the last 12 months (purchase of pesticides, external workers, rent of equipment)
Cost of manual/mechanical weeding	Cost of mechanical or manual weeding of fields of the crop (external workers, rent of equipment)
Harvesting cost	Cost associated to the harvest of the fields of the crop the last 12 months (external workers)
Amount sold	Amount of the production for the main crop sold the last 12 months, without post-harvest processing
Sale price (non-processed)	This is the sale price of the non-processed product
Amount sold of processed product	Amount sold of finished product the last 12 months, in case of post-harvest processing by the farmer
Sale price of processed product	If the product is processed by the farmer, here indicate its sale price.
Amount sold of the associated crop	Amount sold of the crop associated to the crop the last 12 months
Sale price of the associated crop	Sale price of the crop associated to the main crop
Supply of calories to the family	This is the supply of calories considering the fraction of fresh product for the self-consumption of the familly.
Fodder production	This is the production in kg of fodder for this crop. It takes into account to the proportion of the crop residues left for animal grazing

Annex 3. CSA monitoring Core questionnaire (CSA Calculator- Crop module)- continuation

Variable name	Description
Benefit	The benefit generated by the crop the last 12 months
Labor/mechanization total costs	Total labor and mechanization costs generated by the crop
Total cost of fertilizers	
Gross margin	This is the benefits minus cost
Supply of nitrogen by synthetic fertilizers	The calculation of the total supply of nitrogen by the synthetic fertilizers
Supply of nitrogen by organic fertilizers	Calculation of the supply of nitrogen by organic fertilizers
Supply of nitrogen by crop residues	Calculation of supply of nitrogen by crop residues
Direct N2O Emissions from Managed	
N2O from atmospheric deposition of N volatilised	annual amount of N2O emissions produced from atmospheric deposition of N volatilised from managed soils
Annual CO2 emissions from Urea	Annual CO2 emissions from Urea Fertilization of the crop the last 12 months
Nitrogen content value-Parameter	This is the N content of 1 kg of crop residues
Caloric value-Parameter	This is the caloric value for one kg of seed for this crop
Harvest index-Parameter	This is the ratio between seeds and the total biomass produced by the crop and that includes leaves, straw.
Emission factor for N2O emissions from N inputs-Parameter	EF1 for N additions from synthetic fertilisers, organic amendments and crop residues, and N mineralised from mineral soil as a result of loss of soil carbon [kg N2O–N (kg N)-1]
Emission factor from atmospheric deposition of N-Parameter	Emission factor for N2O emissions from atmospheric deposition of N on soils and water surfaces [kg N–N2O (kg NH3–N + NOx–N volatilised)-1]

Annex 3. CSA monitoring Core questionnaire (CSA Calculator- Animal module)

Variable name	Description
Number of animals in juvenile phase	Number of animals in this phase the last 12 months.
Number of self-consumed juvenile animals	Number of self-consumed animals in this phase the last 12 months.
Number of purchased juvenile animals	Number of purchased animals in this phase the last 12 months.
Number of sold juvenile animals	Number of cattle in juvenile phase sold the last 12 months.
Purchase price of an animal in juvenile phase	Average purchase price of an animal in this phase the last 12 months.
Sale price of an animal in juvenile phase	Average price of an animal of this phase the last 12 months.
Type of grazing of juvenile animal	Type of grazing of animals of this phase the last 12 months.
Quality of legume and grasses grazed by juvenile animals	Quality of legume and grasses grazed by an animal of this phase. Three levels of quality are considered.
Type of mix feed for juvenile animals	Type of mix feed for animals of this phase.
Percentage of the juvenile animal diet covered with feed mix	Percentage of the diet of an animal of this phase covered with feed mix, instead of grazing.
Expenses linked to the management of an animal in juvenile phase	The average value of the expenses the last 12 months (feed, veterinary care).
Main management system applied to manure of juvenile animals	Main management system applied to manure produced by animals of this phase.
Percentage of juvenile animal manure managed this way	Percentage of the produced manure that was managed under the system described in the previous variable.
Lenght of the cycle of the crop where the manure was applied	Lenght of the cycle of the main crop where the manure was applied.
Number of animals in productive phase	Number of animals in this phase the last 12 months.
Number of self-consumed productive animals	Number of self-consumed animals in this phase the last 12 months.
Number of purchased productive cattle	Number of purchased animals in this phase the last 12 months.
Number of sold productive animals	Number of animals in juvenile phase sold the last 12 months.
Purchase price of an animal in productive phase	Average purchase price of an animal in this phase the last 12 months.
Sale price of an animal in productive phase	Average price of an animal of this phase the last 12 months.
Type of grazing of productive animals	Type of grazing of animals of this phase the last 12 months.
Quality of legume and grasses grazed by productive animals	Quality of legume and grasses grazed by animals of this phase. Three levels of quality are considered.
Type of mix feed for productive animals	Type of mix feed for animals of this phase.
Percentage of the productive animal diet covered with feed mix	Percentage of the diet of an animal of this phase covered with feed mix, instead of grazing.
Expenses linked to the management of a productive animal	The average value of the expenses the last 12 months (feed,veterinary care).
Main management system of manure of productive animals	Main management system applied to manure produced by an animal of this phase.
Percentage of productive animal manure managed this way	Percentage of the produced manure that was managed under the system described in the previous variable.
Lenght of the cycle of the crop where the manure was applied	Lenght of the cycle of the main crop where the manure was applied.
Number of animals in non-productive phase	Number of animals in this phase the last 12 months.
Number of self-consumed non-productive animals	Number of self-consumed animals in this phase the last 12 months.
Number of purchased non-productive animals	Number of purchased animals in this phase the last 12 months.
Number of sold non-productive animals	Number of animals in juvenile phase that were sold the last 12 months.
Purchase price of an animal in non-productive phase	Average purchase price of an animal in this phase the last 12 months.
Sale price of an animal in non-productive phase	Average price of an animal of this phase the last 12 months.
Type of grazing of non-productive animals	Type of grazing of animals of this phase the last 12 months.
Quality of legume and grasses grazed by non-productive animals	Quality of legume and grasses grazed by animals of this phase. Three levels of quality are considered.
Type of mix feed for non-productive animals	Type of mix feed for animals of this phase.
Part of non-productive animal diet covered with feed mix	Percentage of the diet of an animal of this phase covered with feed mix, instead of grazing.
Expenses management of an animal in non-productive phase	The average value of the expenses the last 12 months (feed, veterinary care) for an animal of this phase.
Main management system of manure of non-productive animals	Main management system applied to manure produced by animals of this phase.
Percentage of non-productive animal manure managed this way	Percentage of the produced manure that was managed under the system described in the previous variable.
Lenght of the cycle of the crop where the manure was applied	Lenght of the cycle of the main crop where the manure was applied.
Fodder demand	Fodder demand the last 12 months for the animals (juvenile+productive+non-productive)
Supply of calories to the family	Supply of calories by animals the last 12 months (juvenile+productive+non-productive)
Benefit	Total benefit for this livestock production activity (juvenile+productive+non-productive)
Total cost	Total cost for this livestock production activity (juvenile+productive+non-productive)
Gross margin	Gross margin of the livestock activity
Total CH4 Emissions	Total CH4 Emissions (Gg CH4 year-1)

Annex 3. CSA monitoring Core questionnaire (CSA Calculator- Animal module)- continuation

Variable name	Description
Total direct N2O emissions	Total direct N2O emissions in kg N2O yr-1
Total indirect N2O emissions	Total direct N2O emissions in kg N2O yr-1
CH4 emissions from Manure Management	CH4 emissions from Manure Management for the animals (juvenile+productive+non-productive) the last 12 months (Gg CH4 yr-1)
CH4 Emissions from Enteric Fermentation	Methane Emissions from Enteric Fermentation for the animals (juvenile, productive, non-productive) the last 12 months (Gg CH4 yr-1)
Annual average nitrogen excretion rates	Annual average nitrogen excretion rates in kg N animal-1 yr-1
N2O emissions from manure management Juvenile	N2O emissions from manure management in kg N2O yr-1
N2O emissions from manure management Productive	N2O direct emissions from manure management in kg N2O yr-1
N2O emissions from manure management Non Productive	N2O direct emissions from manure management in kg N2O yr-1
Indirect N2O emissions Volatilisation N from manure management	Indirect N2O emissions due to volatilisation of N from manure management
NO2 emissions by urine and dung grazing Juvenile	NO2 Direct emissions by urine and dung by grazing animals
NO2 emissions by urine and dung grazing Non Productives	NO2 Direct emissions by urine and dung by grazing animals
NO2 emissions by urine and dung grazing Non Productives	NO2 Direct emissions by urine and dung by grazing animals
N2O indirect emissions from manure management Juvenile	N2O indirect emissions (volatilisation) from manure management in kg N2O yr-1
N2O indirect emissions from manure management Productive	N2O indirect emissions (volatilisation) from manure management in kg N2O yr-1
N2O indirect emissions from manure management Non Productive	N2O indirect emissions (volatilisation) from manure management in kg N2O yr-1
CH4 Emission factor for Manure Management-Parameter	CH4 emission factor for Manure Management-Parameter (kg head-1 yr-1)
Enteric fermentation emission factor-Parameter	Entérique fermentation factor (kg CH4
Tropical livestock unit fodder demand-Parameter	Fodder demand in kg of biomass per tropical livestock unit
Nitrogen excretion rate-Parameter	Nitrogen excretion rate (KG N (1000 KG animal mass)
N2O direct emission factor for manure Juvenile-Parameter	Emission factor for direct N2O emissions from manure management system, kg N2O-N/kg N
N2O direct emission factor for manureProductive-Parameter	Emission factor for direct N2O emissions from manure management system, kg N2O-N/kg N
N2O direct emission factor for manureNonProductive-Parameter	Emission factor for direct N2O emissions from manure management system, kg N2O-N/kg N
NO2 emission factor atmospheric deposition of nitrogen-Parameter	emission factor for N2O emissions from atmospheric deposition of nitrogen on soils and water surfaces in kg N2O-N (kg NH3-N + NOx-N volatilised)-1
Caloric value of meat-Parameter	This is the caloric value for 1 kg of meat

Annex 4. Inform consent example

To be included in the enumerators introductory discussion with the farmer

Good morning/afternoon.

My name is _Enumerator; and I'm part of the CCAFS team working in Doyogena on Climate Change, Agriculture and Food security.

Informed Consent:

With the knowledge of "Partner 1", "Partner 2"and CCAFS, we are conducting an agricultural survey with selected farmers in the village. This is to help us understand how you are affected by the changing climate, and how you are responding through appropriate agricultural practices.

Your participation in this survey ***involves minimal risk of harm,*** *it's absolutely* ***voluntary*** *and it* ***does not involve any type of commitment or monetary compensation*** *from CCAFS/X/X.*

The interview will last around 40 min to 1 hour.
The information that you will provide will be used exclusively for agricultural research purposes. The collected data will be analyzed in ***a confidential way*** *(your identity will not be shared) by scientist from X,X, and the CGIAR. The local government authorities and you have the right to request for a report resulting from this exercise.*

Do you give your consent to be part of this interview/study?

(if answer is) Yes____, then we start the interview. Otherwise we acknowledge the time spend by the farmer and say good bye.

(If answer is yes) We ask: "Would you agree that we take some photographs? They will be used only for documenting and illustrating this research (not for any commercial purpose)?
Yes _____ No ____

Annex 5. Excel file "List of Households IDs and enumerators sheet Template"

Sheet "HH codes"

CSV Site NAME (COUNTRY) YEAR

1. HOUSEHOLD TYPES

• The list of HH provided to be monitored include three types (IDs):

- CCAFS HBS households -if done in the site (**"HBS"**)
- CCAFS beneficiaries **("BEN")** / CSA Adopters and
- Non-CCAFS beneficiaries / Additionals, non CSA adopters **("ADD")**

NOTE: If for the specific [CSV] the CCAS HBS baseline was NOT conducted, only use the two other HH types/I

2. USE STANDARD HOUSEHOLDS IDs TO UPDATE THE HH LIST

The identification of HHs (revisits) in subsequent years of CSA Monitoring will be facilitated by the use of the standard HH address. Those are reflected in Enumerators field Sheets that you can make out of the "List of Households Sheet" (in this file).

This standard HH ID is as follows:

* **CSVshortname (XXX)-Village# (XX)-#hh (XXX)**

DOY-01-001 etc

DOY-01-002 etc

Note: Based on this ligic please complete the next Sheet "List of Households and IDs"

	Villages names	# of BEN households	# of ADD households	# of HBS households (if relevant)
#01				
#02				
#03				
#04				
#05				
#06				
#07				
		0	0	0

Total listed HH	0

Sheet "CSVs short names"

Region	Country	CSV AR4D sites	CSV AR4D site short name codes
EA	**Kenya**	Nyando	NYA
	Uganda	Hoima	HMA
	Ethiopia	Doyogena	DOY
		Basona-Worena	BAS
	Tanzania	Lushoto	LUS
WA	**Burkina Faso**	Yatenga	YAT
	Ghana	Lawra-Jirapa	LAW
	Mali **	Cinzana	CIN
	Niger	Fakara	FAK
	Senegal	Kaffrine	KAF
SA	**Bangladesh**	Barisal	BAR
		Khulna	KHU
	India	Haryana	HAR
		Bihar	BIH
		Punjab	PUN
	Nepal	Mahotari	MAH
		Nawalparasi	NAW
		Bardiya	BYA
SEA	**Vietnam**	Ma	MA
		My Loi	MYL
	Laos PDR	Pailom	PAI
	Philippines	Guinayangan	GUI
LAM	**Colombia**	Cauca	CAU
	Honduras	Santa Rita	STR
	Guatemala	Olopa	OLO

Sheet "List of HH and IDs"

- Document to be printed for the enumerators to be able to locate (while in the field) the HH to be covered

Village-Name	Village ID	Household ID	Household Type	HH head (Only purpose is to identify the HH in the field)		Gender
		CSV-XX-XXX	(BEN, HBS or ADD)	First Name	Family Name	Male or Female
Tula	01	DOY-01-001	BEN	Almaz	Alemu	Female
Tula	01	DOY-01-002	BEN	Degefech	Gebre	Female

Sheet "Enumerators Sheet"

- Document to be printed and distributed to the enumerators with the specific HH to be covered by each of them.

Village-Name	VILLID	Household NONBENress - ID	Household Type	Main agricultural person - Head AG (First)		Gender	M1.A	M1.B	M1.D	M2	M3	M4 (if female)	M5	Survey time	Comments - Remarks (completed; incompleted because ... etc)
			BEN; HBS; ADD	First Name	Family Name	Male or Femal									
Tula	1	DOY-01-001	BEN	Almaz	Alemu	Female	X	X	X	X	X	X	X		
Tula	1	DOY-01-002	BEN	Degefech	Gebre	Female	X	X	X	X	X	X	X		

Second Person of opposite sex		Gender	M1.A	M1.D	M3	M4 (if female)	M5	Survey time	Comments - Remarks (completed; incompleted because ... etc)
First Name	Last Name	Male or femal							
			X	X	X		X		
			X	X	X		X		

Annex 6. Excel file "Preliminary info to tailor questionnaire"

CSV name and country

Implementation Year:

1.. List Main Ethnic groups present in the CSV

2. Sampling period to be covered by the monitoring

E.g During the last 12 months

3. Specific "Hunger" or most difficult month or period in the year in terms of access to enough Food (for the Food

e.g February-March
October-November

4. Short list of the most frequent extreme climate events (affecting agricultural production) relevant in the site and

Heavy rains
Irregular rains
Storms/strong winds
Low temperatures
Frost
Drought

5. CSA Practices been tested in the CSV and targetted by the Monitoring

E.g:

1. *Agroforestry*
2. *Controlled grazing*
3. *Crop rotation (Nitrogen fixing & non-N fixing)*
4. *Residue incorporation (wheat or barley)*
5. *Green manure*
6. *Improved breeds (small ruminants)*
7. *Cut and carry for animal feed.*

6. Climate information services available in the CSV in the period to be monitored (confirm)

Weather forecast (dayly/weekly)
Seasonal Forecast

7. Main Crops (incl. grown in homegardens)- List first the most important in ter

E.g:
A. Wheat
B. Barley
C. Potato
D. Beans
E. Enset
F. Cabbage/local cabbage
G. Beetroot
H. Carrot

8. List Main Animals raised (productive purpose) in the CSV

E.g:
A. Sheep
B. Cattles
C. Poultry

9. List main Trees growned (productive purpose) in the CSV

E.g:
A. Eucalyptus
B. Korch (Erythrina abyssinica)
C. Bamboo

10. Main units used in the CSV for:

Farm area:
Amount of crop consumed per day
Units for crop sold
Units for animal/livestock sold
Unit of organic fertilizers applied
Units for fertilizers applied
Units for pesticide applied

11. Local Currency

12. Access to Financial Services (Context specificity confirmation)

Please do confirm (with an X) if in your CSV site access to credits/loans, insurances, subsidies, land property its something that happens at individual level or at household level. E.g when they get a credit apporaved its on the name of a person (this occurs is most of the places) or under the whole family (e.g Vietnam).

Personal (individually)	
Household	

13. CSV Villages name

	Geo coordinates	
Village Code - Village name	**Long**	**Latitude**
01		
02		
03		
04		
05		
06		

14. Phone number format in the country:

E.g. *221 (+ other 7 numbers)*

The Geofarmer App has an optional module with the below three questions:

** Do you personnally own a cellphone?*
** What is your mobile phone number?*
** Would you be willing to respond further surveys in the future if we make them by cellphone?*

Please confirm if this information is something you want to capture/ might be useful for your future activities or if there is no need to include it in the questionnaire.

Yes, Include	
Do not include	

Annex 7. Template for the glossary of CSA practices

RESEARCH PROGRAM ON Climate Change, Agriculture and Food Security

GLOSSARY

Improved breeds (sheep)

Photo credit: Gebermedihin A.

Description (and CSA pillars covered)
Community Based Breeding program is a technology of choice for genetic improvement of small ruminants: measurable genetic gains in performance traits and impact on livelihoods; ensure food security under a changing climate, providing households with both nutrition and disposable income. Their small body size, flexible feeding habits and short generation intervals make them suited to climate-risk management. Their low investment costs are affordable to subsistence farmers and are often owned and tended by women and youth.

Criteria to differentiate from traditional/conventional practices
Traditionally, farmers use local breeds with less body weight and less ability to produce offspring. As a result, the productivity level is below its genetic potential. In addition, different production constraints and lack of appropriate breeding strategies developed for the breed in the production system contribute to less genetic potential.