

**The Democratic Republic of Timor Leste**

# **Timor Leste Agricultural Census 2019**

## **Instructions Manual for Field Staff**

**(Form-1, Form-2 & Form-3)**

**This instructional manual contains step by step guide for completing your work successfully as enumerator. All the functionaries in the census hierarchy are required to read and understand this manual and adhere to the instructions for successful completion of census.**

**General Directorate of Statistics and  
Ministry of Agriculture and Fisheries**

**Dili, December 2018**

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## **Chapter 1**

### **General Information About Agriculture Census**

#### **1.1. Importance of Agriculture Census**

Agriculture is the main activity in Timor-Leste, providing subsistence to an estimated 80 percent of the population. It also generates an average of 90 percent of the country's exports, mainly due to coffee. Most farmers practice subsistence farming, planting and harvesting what they need for a simple life-style, collecting wild foods and traditional medicines, and the animals are very much left free to grow and reproduce. There are almost no large-scale farms except for missions. Most Timor-Leste farmers have limited access to the technologies and practices needed for sustainable and efficient agricultural production. Subsistence and commercial producers face significant constraints, including limited access to quality inputs, low yields, and limited access to markets.

Agriculture continues to be the second largest single sector in the Timor-Leste economy, after the mining and quarrying sector. In recent years its contribution to the country's Gross Domestic Product (GDP) has ranged between 6.4 percent in 2011 to 10.9 percent in 2014 and was 9.1 percent in 2015.

Statistically sound data and information is fundamental in accounting the full potential of the country. Perceived with the continuous development in this sector, there was a felt thrust for comprehensive data to understand the structure of agriculture and its practices as well as of aquaculture, fisheries and the use of forest trees within the farming system to enhance planning process and productivity. With this in mind, the ministry of Agriculture and Fisheries (MAF), together with the Ministry of Finance plan to conduct first Timor-Leste Agricultural Census (TLAC) in 2019. The results and analysis from the 2015 NPHC agriculture questions will provide the basis for designing the first TLAC.

#### **1.2. Objectives of the TLAC 2019**

The Timor-Leste Government has decided to conduct the agriculture census to provide minimum benchmark data on structure of agricultural holdings and their main characteristics, to support strategic plans and programmes on agriculture, and development of some SDG indicators in this sector.

#### **1.3 Authority for Undertaking the TLAC 2019**

The TLAC 2019 is conducted by the Ministry of Finance. Authority for the census rest with the General Directorate of Statistics (GDS) who has the legal power to collect such information under the Statistics Law of the country.

#### **1.4 Confidentiality of Information Collected**

The resolution provides for total confidentiality of the information collected in the census. The information can only be used for the purpose of compiling statistic and no individual information can be disclosed to anyone outside the census organization.

#### **1.5 Forms Used in the Census**

The census covers all households and agricultural holdings in the Timor-Leste. Three forms have been developed for the purpose of census. Form 1 will be used for listing of households as well as institutional farms such as corporation (company), religious institution/non-profit institution (e.g. church, trust), cooperative/community (group activity), and government institution engaged in farming. Form 2 (Household/Institutional Questionnaire) is designed to collect detailed data on agricultural farm households and activities taken up in farm holdings. This form will be used for collecting data from both the household and non-household sectors except for Section B. Information will not be collected on demographic and economic aspects of household membership for non-household farms. This apart, data on the different physical attributes of the suco (village) such as topography, type of soil and natural disaster as well as available of socio-economic infrastructures such as school, hospital, transportation, agricultural machineries, economic activities, etc. will be collected in Form-3.

### **1.6 Scope of the TLAC 2019**

Items to be covered in the Form 2 include the following:

- a) Engagement of sub-sectors of agriculture.
- b) Household membership demographic, economic information.
- c) Land use, area, tenural status and location of each parcel.
- d) Area under perennial crops, annual crops including forest trees/plants.
- e) Number of trees in holdings.
- f) Food crops cultivation.
- g) Agricultural practices and services received.
- h) Livestock including number of heads, livestock disposal and veterinary services.
- i) Fishery including species harvested, quantity, value, purpose, etc.
- j) Aquaculture including type of aquaculture, species harvested and habitat type of aquaculture.
- k) Agricultural labour and machinery.

### **1.7 Geographical Coverage**

Entire country including its rural and urban areas will be covered in the census.

### **1.8 Unit of Observation**

Unit of Observation is the agricultural farm holdings which will be captured through agricultural farm households. Normally most or all households will have only one farm holdings and thus the farm holdings and agricultural farm households will be the same in most cases. Thus the farm households will be enumerated in the household sector and all the listed institutional farms will be selected in the non-household sector.

### **1.9 Reference Period**

The reference period for all data will usually be the last 12 months prior to the date of census, except for particulars of land status, land tenure, number of livestock and demographic

particulars of household members. The reference period is mentioned against individual data items.

### 1.10 Enumeration Period

Entire data will be collected in a period of one month starting from 1<sup>st</sup> March to 30<sup>th</sup> March 2019.

### 1.11 Frame

List of enumeration areas (EAs) and information contained in the Population and Housing Census 2015 will be used as frame in the household sector. An EA (Enumeration Area) is an area defined for the census, delimited by natural or artificial boundaries (river, seaside, road...). In this area, nearly 90 households on an average are located. All the EA are classified according to an EA ID of 9 digits:

Municipality code		Post-Administrative code		Village code		EA code		Sector code

All households in the selected EAs will be listed in Form 1 to collect some relevant information for identification of farm households. Such information will be used for identification of farm households/ institutions for detailed data collection in Form 2 in the EAs. Moreover, another list of corporations (company), religious/non-profit institutions, cooperatives/community and government institutions will be prepared within the EAs and all those engaged in farming activity during the last 12 months will be completely enumerated.

### 1.12 Field Operations

The Census is usually the biggest administrative exercise in the country as detailed information in respect of each parcel of land of the agricultural households has to be collected in census. Large number of persons is required in the areas of data collection and data processing. About 2,350 enumerators, 1,175 GPS takers, and 1,175 supervisors will be recruited in February 2019, with minimum qualifications, to cover the household interviewing operations. These 3,525 enumerators/GPS takers will be supervised by 1,175 team supervisors, making 1,175 teams consists of 2 enumerators and 1 PDA/GPS taker per team supervisor. All municipalities are divided into post-administrative area, and then Sucos and EAs, as in the last 2015 population census, and all households within EAs will be interviewed. On an average, it is estimated for each team to cover the enumeration of two/three EAs, and the estimate time to carry out these enumerating operations is four weeks including journey time.

There will be three levels of training for the TLAC 2019: the first for the trainers/ central supervisors, who are staffs of the DGS and MAF - followed by the training of team supervisors and coordinators at the municipality level in the second stage, and to be held in last two weeks of January 2019. The trainers/ central supervisors will train the team supervisors and coordinators. The training of field supervisors and enumerators will be done at the post-administrative level in February 2019 and will be given by the team supervisors and coordinators. All trainers/ central supervisors will be trained in English and Tetun Language by the members of the DGS and MAF.

The TLAC 2019 enumerators will be recruited in the first week of February 2019. Recruited enumerators will collect the information and will be supervised by their designated census supervisors.

<b>Municipality Name</b>	<b>Municipality code</b>	<b>Number of Sub-Municipality</b>	<b>Number of Suco</b>	<b>Number of EAs</b>	<b>Number of Pvt. Households</b>
Aileu	01	4	33	113	7,598
Ainaro	02	4	21	130	10,601
Baucau	03	6	59	267	22,976
Bobonaro	04	6	50	239	17,635
Covalima	05	7	30	153	12,564
Dili	06	6	36	315	42,485
Ermera	07	5	52	273	20,671
Lautém	08	5	34	156	12,050
Liquiçá	09	3	23	111	11,885
Manatuto	10	6	31	99	7,467
Manufahi	11	4	29	119	9,023
Oecusse	12	4	18	190	14,345
Viqueque	13	5	36	185	15,297
<b>Timor-Leste</b>		<b>65</b>	<b>452</b>	<b>2,350</b>	<b>204,597</b>

Each enumerator will be responsible for completing the work in his/her assigned EA(s) and he/she must make every effort to do the work at his/her best ability.

Data collection will be done in CAPI and application software has been developed in CSPro. Moreover, area of holding will be measured parcel by parcel using GPS device. Training for data collection in CAPI and use of GPS will be combined with training programme and follow the discussion on instructions manual and procedures of data collection.

*Data Processing:* The entire data processing will be done by the DGS using the CSPro software and STATA. The soft data collected in CAPI will flow directly from field to the DGS after completion of each EA. In the process, a report will be generated to monitor the coverage of data collection in respect of each Suco/Sub-Municipality/Municipality. During this time, data validation software and software for data analysis will be developed and tested on the available data sets in DGS.

## **Chapter 2**

### **Duties and Responsibilities**

#### **2.1 The Job of an Enumerator**

An identification card (ID) will be provided, which you need to wear during the enumeration period. This card entitles you as an official enumerator of the Agriculture Census 2018/19.

Your main duties are as follows:

- a) Participate in enumerators training.
- b) Wear your ID card everytime you go out to interview households/institutions.
- c) Carry the device (CAPI/GPS) when you go for field work, and see that your device is in working condition.
- d) Visit all households/ institutions in your assigned area.
- e) Fill up the Form-1: Listing of Households and Institutions.
- f) Accomplish the task for all households and institutions. Whether this form is to be filled up completely or partly will depend upon the situation.
- g) Make sure that all new households that are not accounted in the Household/ map given to you are also covered. No household/ institutions in your assigned EA should be left out.

#### **2.2 Census Supervisor**

Enumerators will be assigned under one supervisor who will give your assigned area and supply you with the CAPI device as well as few paper forms you need. Note that data will be collected in CAPI. However, data may be collected in paper questionnaire in case CAPI is not working for some reason. He/She will review your work every now and then and if necessary, he/she will explain to you how you should improve your work. It is the supervisor's duty to see that you complete your assignment as quickly and accurately as possible.

Whenever, you have some problems or questions that you cannot solve from the instructions in this book, write them down and consult your supervisor for help. In contingent situation, if you are to collect data in paper questionnaire, let your supervisor immediately know the requirement of forms or other materials, so that your work will not be delayed or interrupted.

Any problems that you will encounter during the census such as refusals, absent households, must be reported to your supervisor as early as possible. You will also find it useful to keep a record of any problems you will encounter.

#### **2.3 Hours of Work**

No specific hours have been prescribed. However the most important thing is you must complete your work on or before the deadline. You should plan your hours of work

accordingly. In most cases, you will have to adjust your working hours to the time when you are most likely to find the knowledgeable respondent at home. The most likely convenient time may be early in the morning or in the evening from Monday to Saturday. Do not make interviews on Sundays except at the request of the respondents.

#### **2.4 Confidentiality of Census Information**

As stated in the Government Resolution, all information collected in the census is confidential and should not be revealed to anyone except to the Supervisors and Census Officials. This means that you may not give any census information even to the members of your family. You will take an oath of office requiring you to keep the information confidential.

#### **2.5 How to Conduct an Interview**

It is important that you develop effective interviewing habit and that you know what to do in each household/ institutions and how to do it quickly and efficiently.

Here are some points:

- a) Try and make good impression on the respondent right from the start. Be friendly and polite but do not waste time in small talk. Wear neat clothes suitable for the areas where you are enumerating.
- b) Begin the interview with a pleasant greeting or use any courteous introduction.
- c) Spend a minute or so in general conversation or make a complimentary remark about some interesting feature of the place, in which the respondent can take pride. Then you can begin to undertake the questions in the Household Questionnaire.
- d) Ask the questions as worded on the census forms. Be careful not to change their meaning. Refer to the copy of the census questionnaires so that you can ask the questions in English/Tetum.
- e) Use probing questions that will help you get the accurate answers of the respondents.
- f) Try to interview privately. Avoid group interviewing. Talk to the head of the household/institutions or any responsible member of the household/ institutions who can accurately answer the questions. If not, find out when some responsible member of the household/ institutions will be at home/ institution and take note of this.
- g) Listen carefully to the respondent's answers. You may get answers to several questions at once. Do not reveal your opinion on census questions. Do not show surprise, approval or disapproval of the replies either by the way you look or by the tone of your voice.
- h) If a respondent does not understand a question, it is sometime helpful to repeat it. Show him blank copies of the Household Questionnaire Form to help him understand.
- i) Do not lose any form whether completed or not.
- j) If a respondent seems reluctant or hesitant in answering, mention the importance and value of census information. Explain that it is strictly confidential and cannot be used for purposes of taxation or investigation or regulation.
- k) Do not discuss politics or other controversial subjects.
- l) Make an appointment to interview or to complete an interview at the respondent's request

- m) Always thank the respondent when the interview is completed. Let him/her know that you appreciate his/her contribution to the success of the census.

## **2.6 Refusals**

Most people cooperate fully in census undertaking. Refusals are rarely. You may find a respondent who is a little bit reluctant to give information mainly because he/she does not understand why it is necessary. In such case, explain to him/her the importance of census objectives.

Explain politely that every one is required by law to give census information and emphasize that all information is confidential. Explain the importance of census information.

Your attitude in a refusal situation is an important factor in creating good work towards the census. You should try to remain calm and courteous. Do not argue and do not lose your temper. You should also inform the refusal to your supervisor who will take further action in this matter.

## **Chapter 3**

### **Enumeration Area Maps**

#### **3.1 Enumeration Area Map**

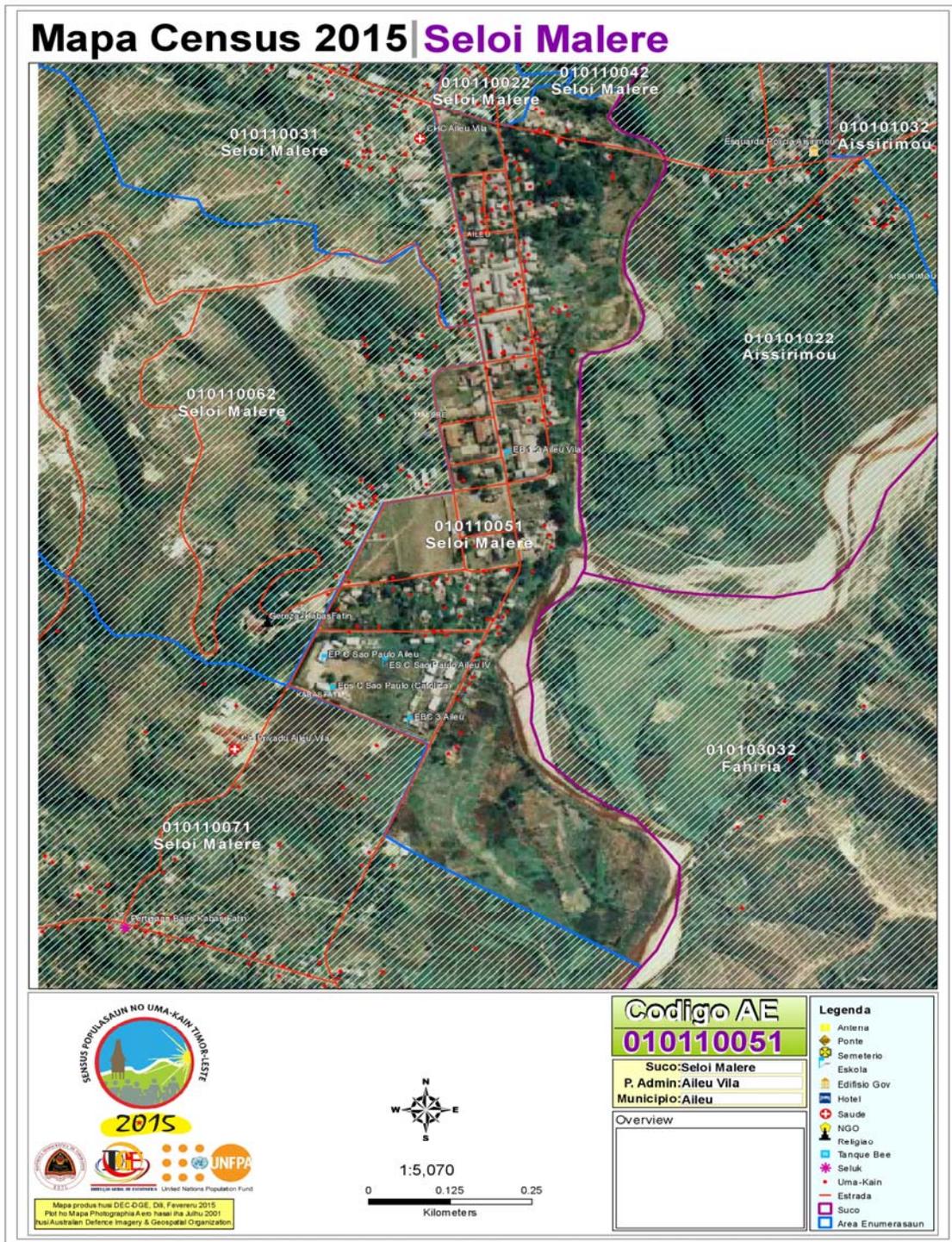
Your enumeration area map is the best detailed map available from the DGS, it is important to learn, read and use your map accurately. You will be issued a map of your assigned enumeration area, and know your boundaries. The sidelines show the EA boundaries. These may be recognized by the roads or by any suco (village) landmarks.

If you cannot identify your boundaries, inform your supervisor. Do not proceed to enumeration of households until you are sure of your exact boundaries. You cannot be paid for working in a wrong EA. Also, if you miss household(s)/ institution(s) in your EA, you will be required to return and enumerate them before your supervisor can accept your work as complete.

#### **3.2 Route for Visiting Households**

The EA map given to you outlines the route to be followed. You should strictly adhere to this route. Never visit households/ institutions in haphazard manner. They should be visited in a logical sequence for example going along the roads in a clockwise direction. You may have to work out a special route to visit households/ institutions with difficult access. Do not forget to go to those points of your EA where there are no households/ institutions according to the map. Verify whether this is the case.

Illustration 1. Example of a EA Map



# Mapa Census 2015 | Fahiria





**2015**



**Codigo AE**

010103022

Suco: Fahiria  
 P. Admin: Aileu Vila  
 Municipio: Aileu

**Legenda**

- Uma-Kan
- Estrada
- Area Enumerasaun
- Suco
- Antena
- + Ponte
- ⊙ Semeterio
- ⌄ Eskola
- ⌄ Edifisio Gov
- ⌄ Hotel
- ⊙ Saude
- ⌄ NGO
- ⌄ Religiao
- ⌄ Tanque Bee
- \* Seluk

Overview



1:10,580



Kilometers

Mapa produs hus ISEC-DAE, DA, Fevereiro 2015  
 Photos: Mapa Fotografika Aerial base hu Julho 2011  
 hu: Australian Defence Imagery & Geospatial Organization

**Chapter 4**  
**Instructions for Filling up**  
**Form 1: Listing of Households and Institutions**

**4.1 General Instructions**

For enumerators there are 2 (two) forms that will be used in the census including the Form 1: Listing of Households and Institutions, Form 2: Particulars of Agriculture Household and Holding.

Information in Form 1 and Form 2 is to be collected preferably from the head of the household or holder. A household head is the person who is mainly responsible for the care of the household members in terms of physical, social and financial needs. The household head may not be necessarily the oldest member of the household but it should be the one recognized by the members as such.

A respondent is any adult member (18 years old and over) of the household who should be knowledgeable of the agricultural holding activities. DO NOT interview/ask neighbours or other households for the information of the household to be interviewed. No member below 18 years old should respond in this questionnaire.

All information in Form 1 & 2 will be collected in CAPI. Complete the interview of Form 1 first and then of Form 2. If you make a mistake, scroll back and enter the correct answer. Make sure numbers and fractions are clearly recorded. Areas in haters should be specified in haters and/or fractions of haters as devised in CAPI.

Note that area will be measured in GPS and recorded in Form 2 only. Before the procedure of data collection is described item by item, read the concepts and definitions used in TLAC 2019 that is given in Appendix-B for reference.

**4.2 Form 1: Listing of Households and Institutions**

Form 1 is meant for listing of all the houses and households residing in the sample enumeration area (EA) as well as recording the particulars of corporations, religious institution/non-profit institution (eg. church, trust), cooperatives/ communities and government institutions located within the EA. Some information like household size (for households only), land possessed (Hacters), whether any crop/plant grown, number of large/small head animals reared, number of poultry, whether engaged in fishery activities/aquaculture activities will also be collected in this questionnaire. The frame for households in the EA will be prepared and details of agricultural activities carried out by the households during last 12 months will be recorded in household questionnaire.

**4.3 Structure of the Form 1**

The Form 1 contains the following sections:

- Section A: Descriptive identification of EA
- Section B: List of households

- Section C: List of institutional farms  
Section D: Remarks by enumerator / supervisor

**4.4 Starting point for listing:** Having determined the area unit (EA) to be enumerated, the enumerator will proceed to list the houses and households in this area unit. The listing may be done in the same order as that of the 2015 Population Census order of house listing. If the census order of house listing is not available, the listing may be started from the north-west corner of the EA and proceeding south-wards in serpentine order.

The procedures to be followed for filling up the various sections of the Form I are described in the following paragraphs.

#### **4.5 Section A: Descriptive identification of EA and codes**

This section is meant for recording descriptive identification particulars as well as codes of the EA. Municipality, Sub-Municipality, Suco, EA name are to be copied properly from the frame in the appropriate places. If the EA does have any name, then write the EA code as given in the frame.

#### **4.6 Section B. Listing of Households**

Various columns of Section B are described below:

##### **4.6.1 Col 1: House Number**

All houses including vacant ones shall be listed by giving a house number. Field Supervisor will **fix the Census Sticker** in the front door of each house in the EA. The census sticker carries a unique 6-digit number, which indicates the House Number. He/she should also fix the Census Sticker on the locked and commercial houses. The supervisor should ascertain and ensure how many households are living in that house and record it against “Number of Households” provided below the house number in the sticker.

While collecting the data, if the enumerators find a house without such numbers, whether vacant or solely used for non-residential purposes, he/she should immediately contact the supervisor and points out to him/her. A separate running serial number will be given to the house using a new census sticker. After listing all the households associated with a house, the next house shall be listed. For family living under a tree or bridge etc. (i.e. without any house), a census sticker should be put against the household in some place easily visible and as desired by them.

**House:** A house is structure surrounded by walls and roof, irrespective of type materials used for construction. Several households may live in a house, or a household may live in dwelling unit consisting of several structures. The several structures used by a single household for living purpose may form a single housing unit. For example, the living room and bed rooms may be located in one structure and kitchen may be located in a separate structure and bathing place may be in another structure. These three structures together will form a housing unit and

will be listed once. Similarly, an religious institute, say church, may consist of several structures. Some structure may be used for purely worship/prayer purpose and some may be used for staff quarters. All such structures are to be identified separately by purposes of use: some against church for religious purpose, and others against staff quarters for residential purpose. Similarly, a household living in three structures for residential purpose and other two structures are used for animal shed/farm building and one for retail shop. In this case, first three structures will be recorded against household for residential purpose, next two structures against animal shed/farm building for farm purpose, and one for retail shop for non-agricultural business.

There may be another situation where a single structure may be used for different purposes. For example, in a multi-storied building, super-market may be located in the ground floor, a bank in the first floor, and remaining floors for residential purposes. All are to be separately listed against this structure and building. However, if a household living in a single structure/building and uses a part of it for his/her retail shop or animal shed, it should be treated as a single structure and recorded against residential building.

#### **4.6.2 Col 2: Household serial number**

Supervisor will then **fix the Census Sticker** in the front door of each house in the EA. The census sticker carries a unique 6-digit number, which indicates the House Number. He/she should also fix the Census Sticker on the **vacant and locked houses**.

Supervisor is to ascertain and ensure how many households are living in that house and record it against "Number of Households" provided below the house number in the sticker. He/she should also follow the same procedure for each institution under the coverage of census in the EA during his/her move for the entire EA.

Beside 6-digit house number, a 3-digit household number will be given to the households starting from '001' without any omission or duplication.

**For institutions**, he/she should start the serial number **from '99Z'** without any omission and duplication, where 'Z' can take values 1, 2, 3, ..., 9.

While doing so, he/she must ensure that no household or institution is missing. If there are more than one household/institution in a house, say 9, then both the enumerators should ensure that they have listed all the 9 households and collected data in Form-2 from all agricultural households as well and similarly for the institutions also.

#### **4.6.3 Col 3: Name of head of household**

For a household having serial number in column 2, the name of the head shall be recorded here.

#### **4.6.4 Col 4: Household size**

The size of each household (usual members) as defined earlier will be recorded in this column. Two small box spaces are provided against this column at the end of each page to record the current page total for this column and the cumulative total for the pages.

#### **4.6.5 Col 5: Land possessed (Hacters)**

The total land possessed (**land owned + land leased in – land leased out + land otherwise possessed**) by the households as on the date of enumeration will be assessed and recorded in this column in hacters in three places of decimal. It is possibility that households living in the foot-paths/streets/under the pipe or bridges or tree do not have any land elsewhere. Moreover, there may be households who resides in a small house/cottage of, say less than 5x5 sq. meters, without any separate agricultural land elsewhere. Such households are to be considered as landless and for them, land possessed will be recorded as ‘0’ (zero) for the purpose of census. For locked household also, a ‘0’ may be recorded in this column.

#### **4.6.6 Col 6: Whether any crop/plant grown**

Whether any crop /plant was grown in any parcel, wholly or partly, by the household during the last 12 months or not is to be recorded in codes: 1- Yes and 2- No. For locked household, a ‘-’ may be recorded in this column.

#### **4.6.7 Col 7: Number of large head animals reared**

Number of large head animals (buffalo, cattle, horse, etc) reared by the household as on the date of enumeration. For locked household, a ‘-’ may be recorded in this column.

#### **4.6.8 Col 8: Number of small head animals reared**

In this column, number of small head animals (goat, pig, sheep, etc) reared by the household as on the date of enumeration is to be recorded. For locked household, a ‘-’ may be recorded in this column.

#### **4.6.9 Col 9: Number of poultry birds kept**

Number of poultry birds (chickens, ducks, etc) kept by the household as on the date of enumeration will be recorded here. For locked household, a ‘-’ may be recorded in this column.

#### **4.6.10 Col 10: Engaged in fishery activities**

Whether the household was engaged in fishery activities during the last 12 months before the date of enumeration is to be ascertained and then, record 1 if they were engaged at least for some days, else record 2.

#### **4.6.11 Col 11: If yes in Col. 10, Degree of engagement**

If the reply to the above question is affirmative, then the degree of involvement in fishing activity is to be assessed here considering the situation that prevailed during the reference period of last 12 months prior to the date of enumeration. There could be four situations for a household as described below and code appropriate to the situation will be recorded:

1 -Few days,

2 -Few weeks,

3- Few months,

4- More or less regularly.

#### **4.6.12 Col 12: Engaged in aquaculture activities**

Like fishery, it is to be ascertained whether the household was engaged in aquaculture activities during the last 12 months before the date of enumeration. Record 1 if they were engaged at least for some days, else record 2.

#### **4.6.13 Col 13: If yes in Col. 12, Degree of engagement**

If the reply to the above question is affirmative, then the degree of involvement in aquaculture activity is to be assessed here considering the situation that prevailed during last 12 months. During the reference period, there could be four situations for a household as described below and code appropriate to the situation will be recorded:

1 -Few days,

2 -Few weeks,

3- Few months,

4- More or less regularly.

#### **4.6.14 Col 14: Is this an agricultural household?**

Cols (14) & (15) are to be filled in only for PAPI data collection. If any of the condition of agricultural holding given below is satisfied, record code 1 in Col (14), else record 2.

Conditions are:

(i) entry in Col (5)  $\geq$  0.02 ha and entry in Col (6) = 1;

(ii) entry in Col (7)  $\geq$  2;

(iii) entry in Col (8)  $\geq$  3;

(iv) entry in Col (9)  $\geq$  10.

**4.6.15 If 'Yes' in Col (15), serial number of agricultural household:** Give running serial number in Col (15) starting from '001' to those households/institutions with Code 1 in Col

(14) without omission or duplication. The last serial number will indicate the total number of agricultural households/institutions in the EA. Then circle agricultural households with serial no. 1, 6, 11, 16, 21, ..., which are selected for GPS area measurement by the GPS taker.

#### **4.7 Section C: List of institutions (Corporation, Cooperative, Government, Religious and Non-profit Institutions)**

Item by item instructions are same as that of Section B and all the columns are to be filled in here except Col. 2. While listing of all houses and households in Section B, if you come across institutions such as Corporation, Cooperative, Government, Religious and Non-profit Institutions, record all particulars of them in Cols. 3-13 of Section C in the same manner as that of Section B.

#### **4.8 Section D: Particulars of Field Operations**

Particulars of field operations will be recorded here that includes name of enumerators/supervisors, Date of finishing interview and GPS coordinate of EA (Latitude & Longitude).

#### **4.9 Section E: Remarks/ Specific Observations by Enumerators/Supervisors**

While collecting the data in the EA, the enumerator or supervisors may come across some abnormal or inordinat situation such as abnormal increase of population/housholds, as compared to last census, due to immigration into the EA, or decrease due to industrialisation, or part of EA is washed away by the adjacent river that raised doubt about data quality, they should write here the reason for such incidents.

## Chapter 5

### Instructions for Filling up Form 2: Particulars of Agriculture Household, Holding and Holding Activities

#### 5.1 Form 2 - Particular of Agriculture Household and Holding

The form will be used in collecting detail information from all the farm households/institutions. The form contains 14 (fourteen) sections.

##### 5.1.1 Section A.1 Identification of Holding Location

Enter the identification particulars correctly.

Holding ID First the name of Municipality, Sub-municipality, Suco and EA is to be recorder. The corresponding codes are to be correctly copied from the census frame provided for the purpose. Then the household serial number or the institution serial number, as the case may be, is to be copied from listing form: Column 2 of Section B or Section C of Form. The GPS Coordinate for the household is to be recorded against Item 1.7, using the GPS device.

5.1.2 **Section A.2 Type of Holding:** Record the code in the box provided.

##### Household Holding

- Code 1 **Individual** is a holding that belong to a household. Some of the household members stay away forming a separate household for the purpose of study or employment or other reasons, but they have a family relationship and some of them may take part in the management of farm operations with the parent households. Such holdings are generally termed as family holdings and are not to be listed separately, but are to be considered as individual holding also.
- Code 2 **Joint operation** is a holding that belong to more than one household but they do not have family relationship and both the households take part in the management of farm operations.

##### Institutional Holding or non-household Holding

- Code 3 **Corporation (Eg. Company)** is also known as Business farm and is generally owned and operated by companies. These are the big entities in the agriculture sector that operate big land for the purpose of production of agricultural goods mainly for sale;
- Code 4 **Cooperative/society/community** is a holding that is operated and managed by a group of people forming cooperative or society a and all benefits derived are shared among the co-owners. Community is similarly placed as their

activity is also carried out by a group of people from the community and all benefits derived are shared among the co-owners.

Code 5 **Government** farms are owned and operated by the government mainly for the purpose of research activities.

Code 6 **Religious institution/Non Profit Institution (eg. Church, trust):** There are religious institutions such as church, mosque, etc or trusts who own large amount of land who operate and manage agricultural farms for production of crops and raising livestock, etc. Such farms are to be considered here.

The last four types of holdings are termed as non-household farms for the purpose of census.

**5.1.3 Section A2.1 If Code 1 or 2 (household holding) in Item A.2, sex of holder:** Sex of the holder is to be recorded here. Agricultural Holder who makes the major decision regarding resource use; exercises management control over the agricultural holding operation; has technical and economic responsibility for the holding; and undertake all responsibilities directly or delegate day-to-day responsibilities to a hired manager.

**5.1.4 Section A.3 Holding Headquarter & Respondent Information (In case of Household):** House Number & Address, Name of Head of Household, ID Number of Head of Household, Name of Respondent and Mobile Number of Respondent are to be recorded in the space provided for each of them. The ID Number of Head of Household will be the member serial number of the Head recorded in Section B and will be copied here.

**5.1.6** 5.1.5 Similarly, all such particulars are to be recorded against each item for the institution in Section A.4. **Section A.5 Questionnaire ID:**

## **5.2 Section B. HOUSEHOLD MEMBERSHIP, DEMOGRAPHIC AND ECONOMIC INFORMATION**

**This section will not be filled in for institutional farms.**

This section ask about the household composition to be accomplished for all household member; asks for the relation to head of household, sex, age and education. For household member aged 10 years and above, ask the economic characteristic during the past week.

### **5.2.1 Section B.2: Col (1) Number**

This column is for control purposes to determine the number of household members. Enter the members from the household head in the first line number, followed by the spouse in the second line number, then the eldest unmarried child in the third line number and so on as per the sequence of codes given in the questionnaire.

### **Col (2) Name of Household Members**

Enter the names of all household members from the household head to the youngest member.

**Col (3) Sex**

Enter the sex code of the household member listed in column 1. Enter 1 for male member and 2 for female member.

**Col (4) Age**

Ask for the age as of last birthday of each household member listed, fill in the age in years and integer part will be recorded. If somebody is 24 years and 8 months then fill in 24 years.

**Col (5) Relation to head of household**

Enter the code for relation to the head of household for all household members

- 1-Head/Self;
- 2-Spouse;
- 3-Biological-born son or daughter;
- 4-Adopted-son or daughter;
- 5-Brother/sister;
- 6-Grandchild;
- 7-Parents of head;
- 8- Parents of spouse;
- 9-Child of spouse (step child);
- 10-Daughter in law or Son in law;
- 11-Nephew or Niece;
- 12-Other relations;
- 13-No relation.

**Col (6) Marital status**

Marital status of each household member is to be recorded here. The codes are:

- Code 1- Married or lives together;
- Code 2- Divorced or Separated;
- Code 3- Widow;
- Code 4- Single or Never Married.

## **Col (7) Education**

Enter the code of education completed by the household member listed in column 1:

- Code 1- Pre-school/kindergarten;
- Code 2- Primary;
- Code 3- Pre-Secondary;
- Code 4- Secondary;
- Code 5- Diploma;
- Code 6- University;
- Code 7- No Schooling;
- Code 9- Do not know

## **Col (8)– (10) For household members 10 years old and over**

The following three columns should be asked for household members 10 years old and over.

### **Col (8) Status of Main Economic Activity**

This column refers to the main or usual activity being done or engaged in by each household member 10 years old and over most of the time during the past week. A household member may be:

- Code 1. *Employer* is a person who operates his/her own farm or business or is engaged independently in a profession or trade and employs one or more paid workers.
- Code 2. *Employee* is a person who works for a government/ private firm or company such as hotels, restaurants, departmental store, etc.
- Code 3. *Self-Employed/Own-Account Worker* is a person who generates his/her income directly from customers, clients or other organizations including activities in agriculture sector for subsistence or sale, as opposed to being an employee of a business (or person).
- Code 4. *Unpaid Family Worker/Contributing Family Worker* is a person who works in the household farm or business without pay of any kind and in return shares his/her livelihood from the household as a member.
- Code 5. *Unemployed/Looking for Work* is available for work or seeking for job.
- Code 6. *Homemaker/Housewife*
- Code 7. *Student (Full Time)* is a learner, or someone who attends an educational institution.
- Code 8. *Retired*
- Code 9. *Disabled*
- Code 10. Others are none of the above classification.

## **Col (9) Industry**

This column classifies the activity categories that can be utilized for the collection and reporting of statistics according to such activities, and the International Standard Industrial Classification of All Economic Activities (ISIC Rev.4)) will be used. Three digit codes are to be recorded appropriate to the situation as in the questionnaire.

### **ISIC Rev.4 Codes:**

011 Growing of non-perennial crops

012 Growing of perennial crops

013 Plant propagation: It includes: Growing of plants for planting; Growing of plants for ornamental purposes, including turf for transplanting; Growing of live plants for bulbs, tubers and roots, cuttings and slips, mushroom spawn; Operation of tree nurseries, except forest tree nurseries

014 Animal production

015 Mixed farming

016 Support activities to agriculture and post-harvest crop activities

017 Hunting, trapping and related service activities

This class includes: hunting and trapping on a commercial basis; taking of animals (dead or alive) for food, fur, skin, or for use in research, in zoos or as

Pets; production of fur skins, reptile or bird skins from hunting or trapping activities; land-based catching of sea mammals such as walrus and seal

021 Silviculture and other forestry activities

022 Logging (This class includes: production of round wood for forest-based manufacturing industries; production of round wood used in an unprocessed form such as pit-props, fence posts and utility poles; gathering and production of fire wood; production of charcoal in the forest (using traditional methods))

023 Gathering of non-wood forest products

024 Support services to forestry

031 Fishing (This includes: Marine fishing and Freshwater fishing)

032 Aquaculture (This includes: Marine aquaculture & Freshwater aquaculture)

099 Others.

### **Col (10) Occupation**

International Standard Classification of Occupation 2008 (ISCO 2008) will be used for recording the occupation code (in 4-digit) for the work activity perused by the members of household of age 10 years or more as given below:

#### **Market Gardeners and Crop Growers**

- 6111 - Field Crop and Vegetable Growers
- 6112 - Tree and Shrub Crop Growers
- 6113 - Gardeners; Horticultural and Nursery Growers
- 6114 - Mixed Crop Growers

#### **Animal Producers**

- 6121 -Livestock and Dairy Producers
- 6122 -Poultry Producers
- 6123 -Apiarists and Seri-culturists

#### **Mixed Crop and Animal Producers**

- 6130 - Mixed Crop and Animal Producers

#### **Market-oriented Skilled Forestry, Fishery and Hunting Workers**

##### **Forestry and Related Workers**

- 6210 -Forestry and Related Workers

##### **Fishery Workers, Hunters and rappers**

- 6221 - Aquaculture Workers
- 6222 Inland and Coastal Waters Fishery Workers
- 6223 - Deep-sea Fishery Workers
- 6224 - Hunters and Trappers

#### **Subsistence Farmers, Fishers, Hunters and Gatherers**

##### **Subsistence Crop Farmers**

- 6310 -Subsistence Crop Farmers

##### **Subsistence Livestock Farmers**

- 6320 -Subsistence Livestock Farmers
- 633 -Subsistence Mixed Crop and Livestock Farmers
- 6330 -Subsistence Mixed Crop and Livestock Farmers
- 9999 - Other occupations not mentioned above.

### **5.3 SECTION C. INFORMATION ON THE INVOLVEMENT OF HOUSEHOLDS IN AGRICULTURE AND/OR SUBSECTORS ACTIVITIES**

**C.1 During the last 12 months, did you or any member of your household engage in own account crop cultivation, livestock, poultry, forestry, fishery or aquaculture activity (ies)? (Including backyard agriculture)**

This section ask about the engagement of household or institution in agricultural subsectors, such as crop cultivation , livestock and poultry, fisheries, forestry, aquaculture,

or none of these. No threshold needed in this section. Fill in code 1 for Yes and 2 for No in the box provided.

**C.2 Sub-sector(s) in which engaged (*accepts multiple entries*)**

Ask the household whether household/ institution engage in one or more of those sub-sectors during the past twelve months period and fill in code 1 for Yes and 2 for No in the boxes provided against the sub-sector activities listed.

**5.3.1 Section C.3 During the last 12 months, did you or any member of your household own or manage any land for agricultural use?**

It is to be ascertained whether any member of the household own or manage any land for agricultural use and reply s to be recorded in codes as 1 if Yes, and 2 if No.

**5.3.2 Section C.4 how many parcels of land this household or institution own/manage?**

Ask household/ institutions the number of parcel of land they have. Fill in the number of parcel including homestead land and separate agricultural land. Please note that parcels of land are to be identified by its tenure type as given below. (See the definitions given in Appendix-B).

**5.3.3 Section C4.1 Details of parcels at time of visit**

**The data on this sub-section will be collected even if household did not grow any crop/plant/tree AND raise livestock during last 12 months prior to the date of enumeration as reported in C.2 Sub-sector(s) in which engaged.**

This is to be collected for all agricultural households irrespective of the fact that in earlier Sub-section C.3, the household reports not growing of crops and/or raising of livestock during last 12 months prior to the date of enumeration.

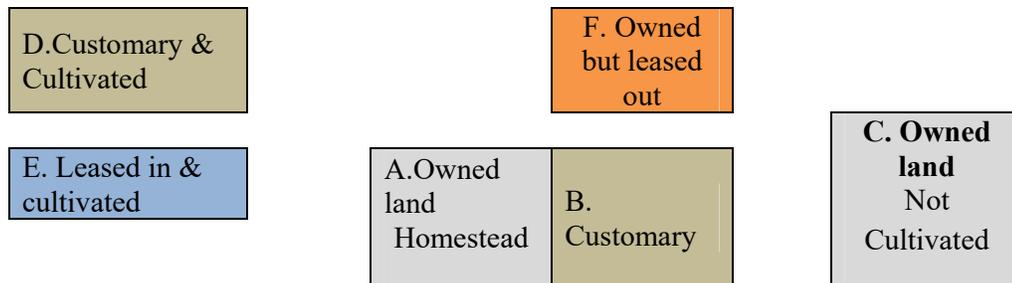
The purpose of this section is to record the area of each parcels making up the holding and its use including homestead as well as separate agricultural parcels at the time of visit. While doing so, enumerate the homestead parcel first and then the other parcels starting from the nearest to the furthest. Note that a homestead land is a parcel or group of parcels of land of same tenure status where the residential building of the holder is located.

**Col (1) Parcel Srl. No.**

Parcel serial number is to be given starting from 1 and it should be continuous without any duplication or omission. Enumerate the homestead parcel (where the residential building is located) first and then proceed from the nearest to the furthest.

It may be noted carefully that a parcel is any piece of land of (i) **one land tenure type**, (ii) **entirely surrounded by other land or water or road or forest or other features not forming part of the holding**; and (iii) may consist of one or more fields or plots adjacent to each other.

**Example: Land under the possession/operation of a farm household with 6 parcels**



1. Number of parcels in homestead= 2 (A & B),
2. Number of parcels in separate agricultural land = 3 (C, D & E),
3. Area of operational holding = Area (A+B+C+D+E),
4. Area of homestead = Area (A+B) and
5. Area of separate agricultural land = Area (C+D+E)

dossa

**Cols (2)-(7) Location of parcels**

Location of the parcel is to be recorded in terms of name and code of Municipality, Sub-Municipality and Suco. It is possible that the parcel may be far away from residence of the household being enumerated. The actual location is to be ascertained from the respondent and us the census list to identify the codes to record the particulars.

**Col (8) GPS Coordinates**

The GPS coordinate is to be recorded here using the GPS device.

**Col (9) What is the Land Tenure of the parcel**

The land tenure of each parcel is to be recorded in terms of cods as given below:

- 1 - Own with certificate from Portuguese;
- 2 - Own with certificate from Indonesia;
- 3 - Own with other numero referensia or certificate;
- 4 - Own without certificate;
- 5 - Communal land;
- 6 - Lease in;
- 7 - Otherwise (Squatter) operated

Communal land is the piece of land used by the households over a long time or over generations without any document of inheritance of that land. Owning of such land is

generally the practice of a community or in places where land settlement work has not been done ever.

Others, is other land tenure that may be different from the above three categories, such as all parcels which used and rented for free by the operator.

#### **Col (10) What is the Approx. Area of the parcel (Unit)**

Area is to be recorded for each parcel as reported by the respondent whether the household has been selected for GPS measurement or not. Record the area of each parcel in Hectars in Col (10). For example for 500 square meters, record 0.0500. For the sample agricultural households for GPS measurement, GPS taker is to update the area figures based on GPS measurement. **Note that area recorded under Cols 12 -19 should tally with the area recorded here.**

#### **Col (11) Relation to Head, (who own/leased in this parcel)**

Ascertain from the respondent who among the household members, owns or have leased in the parcel of land and record the code for 'relationship to head' (Col 5, Section B.2) for his/her. This information will not be collected for farm institutions.

#### **Cols (12) –(18) What is the Land use of this parcel**

The land use categories classified here includes: Temporary meadows and pastures, Temporarily fallow, Permanent crops, Permanent meadows and pastures, Farm building and farmyards, aquaculture and Other area n.e.c. The concepts and definitions are given in Appendix-B to this manual. Use of each parcel is to be ascertained and recorded area as reported by the respondent in the respective columns. Check that sum of areas recorded in Cols (12) to (18) tally with that recorded in Col (10).

#### **Col (19) Measured area of this parcel (unit)**

Area is to be recorded for each parcel as reported by the respondent. If the area of the parcel has actually been measured using GPS by the GPS taker, then the area measured using GPS is to be recorded in hectares (in 3 places of decimal) in this column. Else put a dash (-) in the space.

#### **5.3.4 Section C4.1.1 What is the term of leasing**

The term of leasing is to be recorded here in terms of the following codes:

Code 1- Share of the produce/revenue;

Code 2- Agreed sum of money;

Code 3- Agreed sum of produce;

Code 4- Rent free;

Code 9- Other.

**5.3.5 Section C5 Provide the details of permanent (perennial) and/or temporary (annual) and/or forestry tree in which you or any member of your household were engaged during the last 12 months**

**The data on this sub-section will NOT be collected if the household report that they did not grow any crop/plant/tree AND raise livestock during last 12 months prior to the date of enumeration in C.2 Sub-sector(s) in which engaged.**

The reference period for data collection in this section is last 12 months preceding the date of census. This section is designed to record all the crops currently growing/still growing at the time of visit and/or crops planted and already harvested during the past 12 months by households/institutions.

The information is to be recorded separately for each parcel, preferably in the same sequence as it has been recorded in Section C4.1, cross each crop/tree/plant. The list of all permanent (perennial) crops including horticulture & timber trees; temporary (annual) crops; and other trees are given in Appendix-C. Ascertain for parcel whether any crop/plant/tree is still standing or the crop/plant/tree was grown in the parcel and have been harvested during last 12 months. Particulars of all such crops/plants/trees are to be recorded as indicated in the respective columns.

**Col (1) Parcel Sr.No.**

Record the parcel number, starting from 1, which is closest to the household. There should not be any repetition or omission of serial number. It is better to copy the serial number of parcels from Section C4.1 in the same sequence proceed for interview.

**Cols (2)-(3) Name of Crop/ Trees and code**

First, record the name of crop/ tree for each parcel in column (2). Column (3) will be filled in with the appropriate code for the crop from the code list provided in the Instructions Manual. While collecting the data, it is advisable to record all crops standing in the field on a parcel, and then probe all detail of crops as required in the subsequent columns. Then ascertain for the crops/trees/plants grown in the parcel and have been harvested during last 12 months.

**Col (4) Method of planting**

Recode the type of planting code:

Code 1                      **Compact crops** referred to crops that was planted jointly, packed together, closely, dense; solid and firmly united.

*Illustration 2. Compact crops*



Code 2 **Line crops** referred to crops that was planted in a line, the line must not be a curve line, could be a straight, a circle, etc.

*Illustration 3. Line crops*



Code 3 **Scatter crops** referred to crops that was planted not jointly, not packed together, not firmly united and not in a line.

*Illustration 4. Scatter crops*



### Col (5) Type of planting

Fill in type of planting code

Code 1 **Mono-culture** is a crop that planted without any other crop (root crops or vegetables) in a plot. It may be a stand-alone crop or may be combined with a scattered crops or trees, but it is still considered single crop.

Code 2 **A mixed crop** is a crop that is planted together with any other crop (root crops or vegetables) in a plot. It may be a combined with a scattered crops or trees, but it is still considered mixed crop.

Code 3 **A scatter pattern** is a crop without any major crops grown in a plot.

In case the plot is only fallow land or homestead or used in raising livestock and poultry, do not enter any code.

### Col (6) Area (in Hectars)

Ask the area of currently growing crop(s). Enter the area (in hacters) with fraction up to 3-digit in Col (6). In the case of mixed cropping, either mention apportionate area by cop and record, or mention total area under major crop and none under minor crop with appropriate remark in remark column. Moreover, there may be plot grown with a crop within a parcel whose area is, say less than 5x5 sq. meters, such plots should not be separately identified and measured. Such plot area

should be merged with the adjacent or any other plot grown with some other crop within the parcel and measured.

### **Col (7) Number of plant/trees**

In most cases if the area of the currently growing/still growing crops/trees could not be determined, the number of plants currently growing/still growing is the more accurate information to record. Ask the respondent the number of plants/ trees of currently growing/still growing at time of visit and enter it in this column. Note that this information is to be collected for Permanent (perennial) crops including Horticulture & Timber trees and for Other trees, but not for Temporary (annual) crops.

### **Col (8) Remarks**

This column is meant for recoding remarks about the quality of specific information collected in each row.

### **5.3.6 Section C6 Type of tillage practice**

The data on rest of the sub-sections up to E4.4 will NOT be collected if the household report that they did not grow any crop/plant/tree during last 12 months prior to the date of enumeration in C.2 Sub-sector(s) in which engaged.

### **5.3.7 Section C.6.1 During the last 12 months, what type of tillage practice used on this holding?**

In case the household has used more than one type of tillage process, then the process that has been used for major part of the land area is to be recorded in code as given below:

Code 1- Conventional tillage (involves turning over of the soil over the whole area using tillage tools/equipment);

Code 2- Conservation (low) tillage (involves tillage practices that leaves plant residues at least 30-35% on the soil surface);

Code 3- Zero/No tillage.

### **5.3.8 Section C.6.2 During the last 12 months, what source of power used for tillage on this holding?**

In case more than one type of power has been used for tillage process as coded below, then the power that has been used for major part of the land area is to be recorded:

Code 1-Animal power;

Code 2-Machine power;

Code 3-Mannual power.

### **5.3.9 Section C. 7 Agriculture Production storage**

#### **Item C7.1 During the last 12 months, did you store substantial quantity of agricultural produce?**

The reply is to be recorded in codes: 1 if reply is Yes, and 2 if No. If the household did not store substantial quantity of agriculture produce, this module will not be filled in and skip to SECTION D.

#### **Cols (1)- (4) Name Of Crops & Trees and Name Of Production**

The name of crop/tree and name of product will be recorded in Cols (1) & (3) and the respective codes in Cols (2) & (4). For codes see Appendix-C.

#### **Col (5) Quantity**

Quantity stored for the agriculture product is to be recorded in standard quantity (in Kilogram's).

#### **Col (6) Duration**

Duration for which the products have been kept in the storage is to be recorded here in terms of code as:

Code 1-Short (less than 3 month);

Code 2-Medium (3-6 months);

Code 3-Long (more than 6 months).

#### **Col (7) Purpose of storage**

The purpose for which the products have been kept in the storage is to be recorded here in terms of code as:

Code 1-Own consumption;

Code 2- Good price; 3-seed;

Code 9-others.

In case the product has been kept for more than one purpose, then the main purpose is to be recorded.

#### **Col (8) Storage facility**

Type of storage facility used for storage of produce is to be recorded in codes as:

- Code 1- Sack;
- Code 2- Drums;
- Code 3- Silo;
- Code 4- Webbing;
- Code 5- Storing on Top of the tree;
- Code 6- Refrigerator or Freezers;
- Code 7- Warehouse;
- Code 9- Others.

#### **5.4 SECTION D. IRRIGATION**

##### **5.4.1 Section D.1 During last 12 months, what was the main source of irrigation water for this holding?**

The following codes are to be used for recording entry here:

- Code 1- Surface water;
- Code 2- Underground water;
- Code 3- Mixed surface and underground water;
- Code 4- Municipal/Government water supply
- Code 9- Others.

Source of irrigation water refers to whether irrigation water used on the holding was obtained from the given sources. A holding may obtain water from more than one source. It refers to the original source of the water. Thus, if a canal network is used to distribute water from a dam to farmers, the source of the water is the dam, not the canal.

##### **5.4.2 Section D.2 During last 12 months, what was the main method of irrigation for this holding?**

The following codes are to be used for recording entry here:

- Code 1- Natural flow irrigation;
- Code 2- Channel irrigation;
- Code 3- Irrigation by pump;
- Code 4- Manually by using hose/bucket etc;
- Code 5- Sprinkler irrigation;
- Code 6- Drip irrigation;
- Code 9- Others.

Surface irrigation refers to a system for partially or completely covering land with water for the purpose of irrigation. There are various types including furrow, border-strip and basin irrigation. Basin irrigation includes submersion irrigation for rice.

Sprinkler irrigation refers to pipe networks through which water moves under pressure before being delivered to the crop via sprinkler nozzles. The system basically simulates rainfall in that water is applied through overhead spraying. Sprinkler irrigation systems are sometimes known as overhead irrigation systems.

Localized irrigation is a system where the water is distributed under low pressure through a piped network, in a pre-determined pattern, and applied as a small discharge to each plant. See Appendix-C for details.

**5.4.3 Section D.3 during last 12 months, what was the main payment term for irrigation water for this holding?**

The following codes are to be used for recording entry here:

Code 1-own water;

**Taken/supplied by other:**

Code 2- free of charge;

Code 3- Paid based on area of land irrigated;

Code 4- Paid based on volume of water taken;

Code 9-Others.

**5.5 SECTION E. AGRICULTURAL PRACTICES**

This section asks information on the use of fertilizers whether organic or inorganic, agricultural pesticides, use of seeds on crops grown in the holding by the households and institutions

**5.5.1 Section E.1 Use of fertilizers**

**5.5.2 Section E1.1. During the last 12 months, did your household use fertilizer in this holding?**

Inquire whether household/ institution used fertilizers on the holding during the past twelve months. Record code 1 if the answer is Yes; otherwise, record code 2. If reply is No, then skip all questions in Section E.1.2 and go to E.2.

**5.5.3 Section E1.2. Crop-wise details of fertilizer used**

**Col (1) -(2) Name of crop/plantation and codes**

Name of crops/plants for which fertilizer has been used will be recorded in Col (1) and its code in Col (2).

**Col (3) Inorganic/Mineral**

Inorganic fertilizers are manufactured mineral substances applied to soil, or irrigation water, to supply plants with the necessary nutrients. Record code 1 if the answer is Yes; otherwise, record code 2.

If reply is Yes, then a pop-up in CAPI will ask to record the name of fertilizer in codes as:

Code 1- Urea,

Code 2- DAP;

Code 3- others.

#### **Col (4) Organic**

Organic fertilizer is fertilizer derived from animal or vegetable matter (for example compost, manure) or human excreta.

Inquire whether household/ institution used organic fertilizer in the holding during the past twelve months and if Yes, record 1; otherwise, record 2. If yes, then a question will pop-up to record type of organic fertilizer and record the type in codes as:

Code 1- residues (organic materials) buried to the ground soil;

Code 2-Compost;

Code 3-Animal manure;

Code 4-Green manure;

Code 9-Others.

The household may have used organic fertilizers on the holding during the reference period. These are materials of organic origin, either natural or processed, that can be used as sources of plant nutrients. The most commonly used are compost, chicken manure or other animal manure, etc.

#### **Col (5) Bio-fertilizer**

Biofertilizers add nutrients through the natural processes of nitrogen fixation, solubilizing phosphorus, and stimulating plant growth through the synthesis of growth-promoting substances. Biofertilizers can be expected to reduce the use of synthetic fertilizers and pesticides.

Inquire whether household/ institution used bio-fertilizer in the holding during the past twelve months and if Yes, record 1; otherwise, record 2. If yes, then a question will pop-up to record type of bio-fertilizer and record the type in codes as:

Code 1-Nitrogen fixing;

Code 2-P solubilizing or mobilizing;

Code 3- Plant growth;

Code 9- Others.

#### **5.5.4 Section E.2 Use of Plant protection practices**

**5.5.5 Section E2.1. During the last 12 months, did you used plant protection practices in this holding?**

Inquire whether household/ institution used any pesticide on the holding during the past twelve months. Record code 1 if the answer is Yes; otherwise, record code 2. If reply is No, then skip all questions in Section E2.2 and go to Section E.3.

#### **5.5.6 Section E2.2 Crop-wise details of plant protection practices used**

##### **Col (1) -(2) Name of crop/plantation and code**

Name of crops/plants for which pesticide has been used will be recorded in Col (1) and its code in Col (2).

##### **Col (3) For insects**

Type of pesticide used to protect crop/plant from insects will be record in codes as:

Code 1-Chemical/Insecticides;

Code 2-Natural methods;

Code 3-None.

##### **Col (4) For diseases**

Type of pesticide used to protect crop/plant from diseases will be record in codes as:

Code 1-Chemicals/fungicides;

Code 2-Natural methods;

Code 3-None.

##### **Col (5) For weeds**

Type of pesticide used to protect crop/plant from weeds will be record in codes as:

Code 1-Chemicals/Herbicides

Code 2-Natural methods;

Code 3-None.

##### **Col (6) For rodents**

Type of pesticide used to protect crop/plant from rodents will be record in codes as:

Code 1-Chemicals/Herbicides

Code 2-Natural methods;

Code 3-None.

#### **5.5.7 Section E.3 Use of seed/planting material and their sources**

### **Section E3.1 Crop-wise details seed/planting material used and their sources**

Inquire whether household/ institution used any pesticide on the holding during the past twelve months. Record code 1 if the answer is Yes; otherwise, record code 2. If reply is No, then skip all questions in Section E3.2 and go to Section E.3.3

### **3.2. Crop-wise details seed/planting material used and their sources**

#### **Cols (1) -(2) Name of crop/plantation and code**

Name of crops/plants for which seed/planting material has been used will be recorded in Col (1) and its code in Col (2).

#### **Col (3) Types of Seed/Planting material**

Type of seed/planting material used will be record in codes as:

Code 1-Certified seed/planting material of modern variety;

Code 2-Uncertified seed/planting material of modern variety;

Code 3- Uncertified seed/planting material of farmer`s variety

Code 9-Others.

#### **Col (4) Source**

Source of seed/planting material procured will be record in codes as:

Code 1-Self-Production;

Code 2- Local Market;

Code 3-Government;

Code 4-NGO;

Code 5-Exchange with others

Code 9-Others.

### **5.5.8 Section E3.3 Other Agricultural practices [Not to be collected for farm institutions]**

#### **Section E3.3.1 Did any member of your household grow plants/trees in your nursery?**

Generally, some households develop nursery to grow plants and trees in large scale mainly for the purpose of sale. It is to be ascertained whether the household grew some plants and trees in their nursery during the last 12 months or not. The reply is to b recorded in codes as below:

Code 1 -Yes for own use,

Code 2 -Yes for own use and sale,

Code 3 -Yes for sale only;

Code 4 -No.

In case the households grew some plants and trees in large scale for their own use only, but not for sale, then it will not be considered as nursery and the reply should be considered as 'No' and code '4' will be recorded against this item.

**Section E3.3.2 Did any member of your household collect fire-wood/chips from forest land?**

If the household collected some firewood and chips from the forest land, irrespective of its purpose of use, during the last 12 months, then record code '1', else record code '2' (No).

**Section E3.3.3 Did any member of your household collect wild animals/birds from forest land?**

Likewise above, if the household collected some wild animals/birds from the forest land, irrespective of its purpose of use, during the last 12 months, then record code '1', else record code '2' (No).

**Section E3.3.4 Did any member of your household engage in re-forestation activity?**

In recent years, Government has laid some policy and programme for re-forestation. During the last 12 months, if any member(s) of a household has planted some trees and plants in public land such as public roads, common land of the village, etc; then it should be considered as participation in re-forestation activity, irrespective of the fact that the member(s) of the household is aware of such programme or not, and code '1' will be recorded for such households. Else, record code '2' (No). The re-forestation activity will include the incidental activities such as protection of such plants in any manner like watering, fencing, etc.

**5.5.9 Section E4 Services for Agriculture**

Agricultural services include receipt of agricultural extension, availment of credit/loan, access to agricultural information and access to market.

**Section E4.1 During the last 12 months, did you avail any loan to support your agricultural activities?**

Inquire whether household/ institution availed any **loan to support their agricultural activities** on the holding during the past twelve months. Record code 1 if the answer is Yes; otherwise, record code 2.

**Section E4.2 Details of agricultural extension services received and their source**

**Col (1) Type of agricultural extension service**

This question pertains to the use of agricultural extension services by the holding during the last 12 months. **Agricultural extension** refers to personal contact with extension personnel or direct participation in extension activities such as a farm demonstration. Agricultural extension refers to the provision of agricultural advice and information to crop such as farm management, selection of crop varieties and use of inputs such as fertilizers, credit, farm mechanization, plant protection, sustainable development, and marketing. These services may also be used by the government to distribute inputs, disseminate market information, and promote the production of particular commodities or crop varieties.

It does not include accessing extension material through printed brochures, radio, television or the Internet. Also, extension services should be limited to formal contacts with extension workers specifically employed for that task; advice received from other informal sources should not be included.

Record the code of all the types of services received by the household/institution in Col (1) and the code for corresponding source will be recorded in Col (2). The codes for type of services in Col (1) are given below:

- Code 1-Trainings;
- Code 2-Inputs;
- Code 3-Comparative study/Study tours/Best practices field visits;
- Code 4-Field demonstrations;
- Code 5-Information/Updates;
- Code 9-Others.

#### **Col (2) Source**

Enter code for corresponding source from which it has been availed. The codes are:

- Code 1-Government;
- Code 2-Private companies;
- Code 3-Membership associations;
- Code 4-NGOs;
- Code 9-Others.

#### **Section E4.3 During the last 12 months, did you receive or access any agricultural information that helped you in agricultural activities?**

Inquire whether household/ institution received or accessed any agricultural information that helped you in agricultural activities on the holding during the past twelve months. Record

code 1 if the answer is Yes; otherwise, record code 2. If reply is No, then skip all questions in Section E4.3 and go to Section F.

**Section E4.4. What was the source of agricultural information on which you relied and used**

Nine sources of agricultural information have been listed in the questionnaire and code 1 is to be recorded against the source, which was relied and used, and code 2 is to be recorded if the source is not availed of.

**5.6 SECTION F. INFORMATION ON THE INVOLVEMENT OF HOUSEHOLDS IN LIVESTOCK**

This section relates to the livestock kept by the household/ institution as on the day of visit or enumeration.

**5.6.1 Section F.1 Provide the details of how many livestock and/or poultry you or any member of your household having (own or manage) on of this day?**

Enter the number of livestock kept by the household as of the time of visit in Col 5. Be careful in asking the number of livestock kept to avoid double counting. Ask more probing questions to determine whether the livestock specially chickens belong to the household. Observe the surroundings of all the houses in your assigned enumeration block to be able to check whether the number of livestock really exists. Name of the species is given in Col (3) and its code in Col (4) of the questionnaire. Probing is to be done to ascertain the number of each type of animal by its type and record in Col (5).

**Col (3) - (4) Species and code**

The following are the code and livestock listed in this column. These are:

<b>Espécie Bovina (Karau Timur)</b>		
Vitelo (a) :	Karau oan née be sei susu (menus husi fulan 8)	111
Novilo (a) :	Karau oan ne'ebe hakotu ona susu-ben ate antes tama ba fase reproducaun (Fulan 8 to'o tinan 2)	112
Vaca :	Karau inan adulto depois primeia parto (Tinan 3 ba leten)	113
Boi :	Karau aman ne'ebe kapa ona (kastrado) (Fulan 18 ba leten)	114
Touro :	Karau aman adulto iha fase reproducaun ( tinan 2 ba leten)	115
<b>Espécie Bovina (Karau Vaka)</b>		

Vitelo (a) :	Karau oan neebe sei susu (menus husi fulan 8)	121
Novilo (a) :	Karau oan ne'ebe hakotu ona susu-ben ate antes tama ba fase reprodusaun (Fulan 8 ate tinan 2)	122
Vaca :	Karau inan adulto depois primeia parto (Tinan 2 ba leten)	123
Boi :	Karau aman ne'ebe kapa ona (kastrado) (Fulan 18 ba leten)	124
Touro :	Karau aman adulto iha fase reprodusaun ( tinan 2 ba leten)	125
<b>Espécie Bovina (Karau Vaka Susuben)</b>		
Vitelo (a) :	Karau oan neebe sei susu (menus husi fulan 8)	131
Novilo (a) :	Karau oan ne'ebe hakotu ona susu-ben ate antes tama ba fase reprodusaun (Fulan 8 ate tinan 2)	132
Vaca :	Karau inan adulto depois primeia parto (Tinan 2 ba leten)	133
Boi :	Karau aman ne'ebe kapa ona (kastrado) (Fulan 18 ba leten)	134
Touro :	Karau aman adulto iha fase reprodusaun ( tinan 2 ba leten)	135
<b>Espécie Equina (Kuda)</b>		
Potro) :	Kuda oan neebe sei susu (menus husi fulan 8)	141
Poldro :	Kuda oan neebe hakotu susuben (fulan 8 ate tinan 2 )	142
Égua) :	Kuda inan iha fase reprodusaun (tinan 2 ba leten )	143
Cavalo :	Kuda aman ne'ebe kapa ona (kastrado) (fulan 18 ba leten )	144
Garanhão :	Kuda aman ne'ebe utiliza hanesan kuda aman reprodutor (tinan 2 ba leten )	145
<b>Espécie Caprina (Bibi Timur)</b>		
Cabrito (a) :	Bibi oan neebe foin moris ate hakotu susuben (menus husi fulan 6)	211
Chibato (a) :	Bibi oan ne'ebe hakotu ona susu-ben ate antes tama	212

	fase reprodusaun ( fulan 6 to'o tinan 1)	
Chibarro :	Bibi aman ne'ebe kapa ona (Fulan 8 ba leten)	213
Cabra :	Bibi inan adulto fase reprodusauniha f(fulan 8 ba leten)	214
Bode :	Bibi aman adulto iha fase reprodusaun (fulan 8 ba leten)	215
<b>Espécie Ovina (Bibi Malae)</b>		
Cordeiro ou anho :	Bibi oan neebe sei susu (menus husi fulan 6)	221
Malato (a) :	Bibi oan ne'ebe hakotu ona susu-ben ate antes tama fase reprodusaun ( fulan 6 to'o tinan 1)	222
Ovelha :	Bibi inan adulto iha fase reprodusauniha (tinan 1 ba leten)	223
Carneiro/Marouco :	Bibi aman adulto iha fase reprodusaun (tinan 1 ba leten)	224
<b>Espécie Suína (Fahi)</b>		
Bácaro:	Fahi oan ne'ebe sei susu ( menus husi fulan 6)	231
Leitão :	Fahi oan ne'ebe hakotu onan susu-ben ate antes tama ba fase reprodusaun (fulan 6 ate tinan 1)	232
Porca :	Fahi inan adulto iha fase reprodusaun (tinan 1 be leten)	233
Varrasco :	Fahi aman adulto iha fase reprodusaun (tinan 1 ba leten)	234
<b>Espécie Galináceos (Manu Lokal)</b>		
Pinto :	Manu oan foin fera até semana 2	311
Frango :	Manu aman ka inan antes tama se freprodusaun (fulan 6 ate tinan 1)	312
Galinha :	Manu inan adulta neebe tama ona fase reprodusaun (tinan 1 ba leten)	313
Galo :	Manu aman ne'ebe tama ona ba fase reprodusaun (tinan 1 ba leten)	314
<b>Espécie Galináceos (Manu Rasa Na'an / Broiler)</b>		
Pinto do dia :	Manu oan foin fera lora 1	321
Pinto :	Manu oan depois lora 1 até semana 2	322
Frango :	Manu aman ka inan ho idade semana 2 até fulan 2	323
Galinha :	Manu inan adulta neebe tama ona fase reprodusaun (fulan 2 ate tinan 2)	324
Galo :	Manu aman adulto iha fase reprodusaun (funan 2 ate tinan 2)	325
<b>Espécie Galináceos (Manu Rasa Tolun / Layer)</b>		
Pinto do dia :	Manu oan foin fera lora 1	331
Pinto :	Manu oan depois lora 1 até semana 2	332
Frango :	Manu aman ka inan ho idade semana 2 até fulan 2	333
Galinha :	Manu inan adulta neebe tama ona fase reprodusaun (fulan 2 ate tinan 2)	334
Galo :	Manu aman adulto iha fase reprodusaun (funan 2 ate tinan 2)	335

	tinan 2)	
<b>Espécie Galináceos (Manu Rade)</b>		
Day Old Duck :	Manu rade oan foin fera loron 1 ate fulan 1	341
	Manu Rade Inan (fulan 1 ba leten)	342
	Manu Rade Aman (fulan 1 ba leten)	343

### 5.6.2 Section F.2 During the last 12 months, details of disposal of Livestock and Poultry

This question is asking for the disposal of the livestock raised during the past twelve months. There may be some households, at the time of enumeration, is no longer keeping any livestock but had raised and disposed any livestock during the past twelve months. There may also be some households that are keeping livestock at the time of visit and at the same time had disposed several livestock during the past twelve months, in any of these case, ask the question on the disposal of the livestock within the past twelve months. Apart from disposal, the household may report some new births and may receive or purchase of livestock and all such information will be recorded here.

If the answer is Yes, record 1 and proceed to ask the following questions on disposal . Otherwise record 2 and go to next Section F.3.

#### Col (1) – (2) Kind of Livestock and Code

Type and code may be followed from the previous section. Livestock can either be disposed live or slaughtered. Hence, ask all the disposed livestock whether live or slaughtered.

#### Col (3) Number of new born

Number of new born during last 12 months is to be recorded here for each type of livestock.

#### Col (4) Number of received or brought

Similarly the number of livestock received free of cost from others or purchased on payment is to be recorded here.

There are several ways of disposing livestock:

1. **Consumed:** This refers to livestock slaughtered specifically for home consumption of the household.
2. **Sold:** Livestock were disposed via sales (exchanged for cash) either dead or live.
3. **Lost/died:** For some reason livestock might be lost or died.
4. **Gift:** These include the giving away of livestock (no money involved) for the purposes of ceremonies (opening of community halls, marriages, bestowing of titles, welcome/farewell parties, etc.) or as gifts to persons or organizations for the purposes

as in ceremonies or otherwise. If a livestock has been for social obligation on a barter basis (i.e. substituted for another type of livestock such as goat), this must be included here. Livestock for social obligation may be live or slaughtered.

Note that a household engaged in commercial livestock raising may have more than one nature of disposal.

**Col (5) Sold alive**

Record the number of live livestock sold alive during the past twelve months.

**Col (6) Slaughtered for consumption or sale as meat**

Enter the number of slaughtered livestock that were for consumption or for sale.

**Col (7) & (8) Lost /died**

Record the number of lost livestock during the past twelve months in Col (7) and died in Col (8). Loss of livestock could be for reasons of flood, stolen, etc.

**Col (9) Given away as gift, donation etc.**

Record the number of livestock **given as gift, donation, social obligation, etc.** during the past twelve months in Col (9).

**5.6.3 Section F.3 Veterinary Services**

**Section F.3.1. During the last 12 months, did this holding used any of the veterinary services?**

This question is asking about veterinary services received by household/ institution. Ask the respondent about veterinary services received during the past twelve months period. If the answer is Yes, record 1 and proceed to ask the questions on types of Veterinary service and source of services received from. Otherwise record 2 and go to next Section G.

**Veterinary Services**

The following veterinary services are considered here: Vaccination, Artificial insemination and Castration.

**Vaccination** is the administration of antigenic material to stimulate an livestock's immune system to develop adaptive immunity to a pathogen. Vaccines can prevent or ameliorate morbidity from infection.

**Artificial insemination** is the deliberate introduction of sperm into a female's uterus or cervix for the purpose of achieving a pregnancy through in vivo fertilization by means other than sexual intercourse.

**Castration** is any action, surgical, chemical, or otherwise, by which a biological male loses use of the testicles.

The veterinary services received for each of livestock in the past twelve months are to be recorded. Record the kind of livestock in Col (1) and code (given in Section F.2) in Col (2) for which a service was received and the corresponding type of veterinary services in Col (3) as well as the source of service received in Col (4). If for a particular kind of livestock more than one service was received, then the name and code for that livestock will be repeated in Cols (1) & (2), and particulars of service received and source in Cols (3) & (4).

## **5.7 SECTION G. INFORMATION ON THE INVOLVEMENT OF HOUSEHOLDS IN FISHERIES & AQUACULTURE**

This section is especially designed to capture the total households/ institutions engaged in fishery activities during the past twelve months. Note that fishing as a hobby or game fishing is not included in this section. This section should be asked for all member of household.

Fisheries include the following activities in the sea, river, lake, pond, etc:

- Capturing fish and other marine products either the lagoon or within the reef or outside or over the reef through the use of different fishing methods and with or without fishing vessel/boat; deep-sea fishing is included here;
- Collecting or gleaning or clearing sea shells, sea cucumber, and other sea products along the shore;
- Raising fish through fish farming or aquaculture.

### **5.7.1 Section G.1 How frequently the member(s) of your household were engaged in fishing activity during last 12 months?**

This question determines the degree of engagement of the household in fishing activity in own account capacity during the last 12 months. If the agricultural household reported to be engaged in fishing activity in some manner, then the code appropriate for the situation as described below will be recorded:

- 1- Few,
- 2- 2- Few weeks,
- 3- 3- Few months,
- 4- More or less regularly,
- 5- No.

Even if the household reports that just recently stopped the fishing activity, such household should still be interview since the information on fishing activity to be collected refer to those in the past 12 months.

If the reply is 'No', that is, the household was not engaged in fishing activity during last 12 months, then remaining questions on fishery will not be collected and go to Section G.4 on aquaculture.

### **5.7.2 Section G.2 During the last 12 months, what was the average monthly catch and/or production and/or collection and values**

A household/ organization may report more than one fishing type. Record the type of product/ species harvested, quantity of catch/production /collection in Kg. and its value (in \$) in this sub-module.

#### **Col (2) - (3) Type product/Species and code**

Type of product /species is to be written in Col (2) and code in Col (3).

#### **Cols (4) – Col (5) Quantity of catch/production/collection during last 12 months (in Kg.) and Value (in UD\$)**

Record the quantity of fish catch during last 12 months for this household/ institution in Col (4) and value in Col (5) in US\$.

#### **Cols (6) If sold, main market of sale**

If sale of fish is reported in Col (5), then the market where they sale fish in most of time, is to be recorded in codes as:

Code 1-super market,

Code 2-local market in bulk,

Code 3-retail sale otherwise.

### **Section G.3 What type of vessel used by this holding for fishing?**

The type of vessels usually used for fishing are given along with code below:

Code 1-Motorized vessel owned solely by HH;

Code 2- Motorized vessel jointly owned by different HHs;

Code 3- Motorized vessel lent from others;

Code 4-Non-motorized vessel owned solely by HH;

Code 5-Non-motorized vessel jointly owned by different HHs;

Code 6-Non-motorized vessel lent from others;

Code 7-No vessel used.

The type of vessel that was used for most of time for fishing is to be ascertained and corresponding code is to be recorded.

### **5.7.3 Section G.4 What was the main purpose of your household fishing activity?**

If a household sells some of fish-catch and uses the rest for home consumption, the main purpose should be the one that represents the larger value of total catch.

Sale includes selling catch for cash or in exchange for other produce (barter) or for payment of labor or payment of taxes.

Disposal of fish-catch in other ways such as sending to family members, gifts, should not be considered as sale.

Accordingly, ascertain the purposes of fishing by the household and the code for main purpose is to be recorded in code as follows:

- Code 1 Home consumption only,
- Code 2 Mainly home consumption and occasional selling,
- Code 3 Mainly for sale.

#### **5.7.4 Section G.5 What is your main time of fishing?**

Codes for recording the entry for time of fishing here are:

- Code 1 Day
- Code 2 Night
- Code 3 Day and Night

#### **5.7.5 Section G.6 What is your main season of fishing?**

Codes for recording the entry for main season of fishing here are:

- Code 1 Dry season
- Code 2 Wet season
- Code 3 All seasons

#### **5.8 Aquaculture Activity**

This section will be used to capture data on the different aquaculture activities carried out by the household during the last 12 months. **Aquaculture** is the farming of aquatic organisms such as fish, crustaceans, mollusks and plants. Farming of aquaculture refers to some intervention in the rearing process to enhance production, such as regular stocking, feeding and protection from predators. Aquaculture normally involves rearing of organisms from fry, spat or juveniles. Aquaculture may be carried out in ponds, paddy fields, lagoons, estuaries, irrigation canals or the sea, using structures such as cages and tanks. It may be in fresh water or saltwater.

This section collects information on the type of aquaculture activity, actual area, type of water used, type of production facility, and main specie cultured. All of these data items except the actual area will be collected using the last 12 months as the reference period. The actual area will be collected as on the data of data collection.

### **5.8.1 Section G.7 Did you engage in own account in any aquaculture activity during the last 12 months?**

This question determines whether the household is engaged in own account in any aquaculture activity during the last 12 months. If the agricultural household that reported to have agricultural holding and aquaculture activity in which same production means are used will report that his/her household just recently stopped operating the aquaculture activity, you should still interview such household since the aquaculture operation information to be collected refer to those in the past 12 months.

Information is to be recorded in codes as:

- 1- Few days,
- 2- Few weeks,
- 3- Few months,
- 4- More or less regularly,
- 5- No.

If the reply is 'No' to this question, then remaining questions on aquaculture will not be collected and go to Section H.

### **5.8.2 Section G.7.1 Detailed characteristics of the aquaculture activity during the last 12 months**

This question pertains to the detailed characteristics of the aquaculture activity during the last 12 months. These characteristics will be discussed one by one.

#### **Col (1) Aquaculture Serial Number**

First it is be ascertained the number of aquaculture sites the household is operating and then use this column in entering the serial number for each type of aquaculture activity in Col (2) by the respondent. Provide this serial number consecutively starting 1.

#### **Col (2) Type of Aquaculture Activity**

This column will collect the type of activity operated by the sample household in the last 12 months. The following 6 specified aquaculture activities are listed below:

Code 1 – pond culture means the breeding or rearing of aquatic plants or animals in natural or artificial enclosures. Pond culture is usually carried out in stagnant waters with periodic water exchange or water flushing through inlets and outlets.

Code 2 –pen culture is the rearing aquatic animals or plants in lakes, rivers, reservoirs or open sea using pens

Code 3 – cage culture is also the rearing of aquatic animals or plants in the lakes, rivers, reservoirs or open sea using cages or net enclosures.

Note that pen culture used net enclosure from the water level down to the bottom of the bodies of water (such as river, lake, reservoirs or open sea).While the cage culture used net enclosure like an inverted mosquito net usually hanging held in place by floating structures or suspended by stakes in the four corners in open water bodies.

Code 4 - Rice-cum-fish culture is the use of land for the culture of both rice and aquatic organisms. One form of rice-cum-fish culture is the introduction of brood-stock or seed into flooded paddy fields, often modified for aquaculture purposes. Another form of rice-cum-fish culture is where rice and fish are raised on the same land in different seasons.

Note that fishing associated with fish from the wild that enter paddy fields during flooding is not included.

Code 5 – hatchery is rearing or culturing aquatic animals or plants from the fry stage to juvenile stage.

Code 6 – Other aquaculture activity such as cultivation of shellfish or seaweeds; or raising frogs or crocodiles; or culturing pearls; etc.

Enter the appropriate code of the aquaculture activity operated and reported by the respondent in Col (2).

**Col (3) – What is the actual area (in Ha.) used in the aquaculture activity?**

Ask from respondent the actual area of each parcel. Note that there is no set limit in the actual size of the aquaculture activity area. Enter the actual area in Ha. (up to 3 decimal places) used in the aquaculture activity in the space provided in Col (3).

**Col (4) Type of water used**

This question asks whether the aquaculture activity of the household was carried out during the reference year using water in any of the following types.

Code 1 – **marine water or saltwater** refers to coastal and offshore waters where salinity is high and is not subject to significant daily or seasonal variation.

Code 2 –**Brackish water** refers to waters with appreciable salinity but not to a constant high level. It is characterized by fluctuations in salinity due to regular influxes of freshwater and seawater, such as in estuaries, coves,

bays and fjords. Enclosed water bodies in which salinity is greater than freshwater but less than seawater are also regarded as brackish.

Code 3 - **Freshwater** refers to reservoirs, rivers, lakes and canals, with consistently negligible salinity.

Enter the code for the type of water used in the aquaculture activity area in Col (4) based on the response of the respondent.

### **Col (5) Type of Production Facility during the last 12 months**

This question determines the type of production facility used in the aquaculture activity during the last 12 months. Note the following production facility specified in this column.

Code 1 – **ponds** refer to natural or artificial enclosures used usually in pond culture. Hatchery and cage culture can be undertaken also used in pond.

Code 2 – **pen net** enclosure fixed by frameworks made of metal, plastic, bamboo or wood from the water level down to the bottom of the bodies of water such as river, lake, etc.

Code 3 – **cage** are net enclosures held in place by floating structures. These are simple net enclosures suspended by stakes in the four corners in open water bodies.

Code 4 – **paddy fields** are used in the rice-cum-fish culture. Note that only such culture is using paddy fields.

Code 5 – **culvert/tank/drum/aquarium/raceways** is the production facility for hatchery. Note that backyard pond culture can also be used such production facility.

Tanks and raceways are fixed structures used for raising aquatic animals or plants. They are normally built above ground and can be made of bricks, concrete or plastic. Tanks are small round erect angular structures, whereas raceways are long, narrow structures. Drum is a barrel usually used for reserving water. Aquarium is usually made of glass where fry or seeds are being raised or propagated.

Note that if the aquaculture activity is pen culture the production facility is only 'pen'. In pond culture, the production facility is pond. If cage culture, the production facility are cages and hapas. But cage culture can use pond facility where cages and hapas can be built. If rice-cum-fish culture, the production facility is only paddy field. Hatchery can be undertaken in pond or culvert/tank/ drum/aquarium/raceways.

Enter the appropriate code for the type of production facility in Col. (5) according to the answer of the respondent.

### **Col (6) Main species that was cultured during the last 12 months**

This column determines the main specie cultured in the aquaculture activity in the last 12 months. Note that there may be more than 1 species cultured in the reported type of aquaculture activity. Inquire from the respondent which of these species was the main specie (more than 50% of the total species) cultured in the last 12 months.

There are 6 species specified from which the answer of the respondent can be coded.

Code 1 -fish (such as catfish, tilapia, carp, snakehead, grouper, sea-perch, trout, eel, etc.)

Code 2 -shrimp/prawn

Code 3 - crab

Code 4 -frog

Code 5 -crocodile

Code 6 -seaweeds

Code 7 - other species, specify.

Enter the appropriate code for the main specie cultured in Col. (6).

### **5.9 SECTION H. USE OF MACHINERY AND EQUIPMENT**

This section is about the machinery and equipment used during the past twelve months in connection with the operation of the household's/institute's agricultural activity. The equipment should be in operational condition and may be owned or leased.

#### **Col (1) – (2) Type of equipment and equipment code**

#### **Col (3) Used in the past twelve months**

As the respondent mentions the name of equipments, record 1 if used in the past twelve months in column (3), else record 2.

#### **Col (4) Source of machinery/equipments**

Ask the source of equipment and use the following codes:

Code 1 - Owned;

Code 2 - Private hired;

Code 3 - Government provided;

Code 4 - Others.

### **Col (5) Stock owned by this holding at the time of visit**

Record the total number of stock in ownership at time of visit in column (5).

Note that for other equipment not mentioned in the list, specify this equipment but do not enter any code in column (B). for this will coded in the manual processing.

### **5.10 SECTION I. LABOUR (OTHER THAN HH MEMBERS)**

This section seeks to establish the hired labor inputs utilized in the holding for carrying out the agricultural activity. This should include all persons aged 10 years old and over who worked on the holding for pay during the past 12 months prior to the enumeration day.

#### **5.10.1 Section I.1 During the last 12 months, did you hire labour for crop cultivation and/or raising livestock and/or forestry and/or fishing and/or aquaculture activities?**

Record 1 for Yes or 2 for No. The hired labor should include both **occasional** and **permanent** labors engaged in the farm activity. If Yes, proceed to ask the respondent regarding the hired labor input Section K.2. Else move to Section J.

Note that if a farm household hired some labors for 4/5 days only during the last 12 months, it need not be considered and recorded. If they hired labor for a significant time, say, at least for some weeks during the last 12 months, such cases are to be considered for recording.

#### **Col (1) Information covered**

- 1) Number of hired workers,
- 2) Average number of days worked,
- 3) Average hours worked/day.

#### **Cols (2) to (4) Male: Full time, Part time and Occasional**

#### **Cols (5) to (7) Female: Full time, Part time and Occasional**

Ask the respondent regarding the labor input in term of number of laborers, average number of days worked and average hours worked/day. Fill in Cols (2) to (4) for male, and Cols (5) to (7) for female.

In case the farm holding has engaged 2 labours for 1 month and 3 labours for 2 months, then average number of days worked in the farm would be 48 days  $[(2 \times 30 \text{days} + 3 \times 60 \text{days}) / 5]$  for each labour.

Similarly, if 2 labours have worked for 8 hours per day, and 3 labours have worked for 10 hours per day, when they were working, then average number of hours worked per day in the farm would be 9 hours  $[(2 \times 8 \text{hours} + 3 \times 10 \text{hours}) / 5]$ .

Full-time employment is employment in which a person works a minimum number of hours defined as such by his/her employer. A part-time job is a form of employment that carries fewer hours per week than a full-time job.

**5.10.2 Section I.3 During last 12 months, what was the main form of payment to hired labour?**

Enter the code for main form of wage payment to the hired in this column. The form of payment of wage may be:

- Code 1-In cash;
- Code 2-In farm produce;
- Code 3-Exchange of labour;
- Code 4-Other forms of in-kind payment.

**5.11 SECTION J. INCOME/REVENUE OF ALL SECTORS**

**5.11.1 Section J.1 During last 12 months, purpose of production, destination of sales and value of sales by all HH members put together**

**Col (1) Types**

The different sub-sector activities are described here. Probing is to be done in respect of purpose of production, destination of sales and value of sales for each of the listed activities and information is to be recorded in the respective codes.

**Col (2) Purpose of production**

Purpose of production is to be ascertained for each sub-sector activity and recorded in codes as given:

- Code 1-Only for sale;
- Code 2- Mainly for sale with some own consumption;
- Code 3-Mainly for own consumption with some sale;
- Code 4-Only for own consumption.

**Col (3) Destination of sales**

The following codes are to be used for recording entry here:

- Code 1-Intermediate person/Middle man;
- Code 2-Local market;
- Code 3-Super market;
- Code 4-Government outlet;

Code 5-Export;

Code 9-Other.

The usual practice of sale may be given priority for recording here.

**Col (4) Value of sales in \$**

Value of sale of produce from the sub-sector is to be recorded in UD\$ here.

**5.12 SECTION K. INFORMATION ON THE INVOLVEMENT OF HOUSEHOLDS IN OTHER SECTOR FOR INCOME**

**5.12.1 Sector K. During last 12 months, did you or any member of your household engage in any of the below listed activities for income?**

The reply is to be obtained in respect of their engagement in Handicraft/ Handloom activities first, and recorded. Then obtain it for Micro/Small/Medium business and record using the listed codes as below:

**Handicraft/Handloom activities** (Products made by hand, mostly using simple tools):

Code 1-Homan (eg. bote, ai-sar, biti, nst);

Code 2-Semi-finished/Finished products (eg. Making thread, clothing Code materials, curtains, carpet etc.);

Code 3-Making artistic products (eg. paper products, carving, paintings etc.)

Code 4-Other handicraft/handloom activity, specify.....

**Micro/Small/Medium business (Not in agriculture):**

Code 5-Manufacturing of brick, garments etc.

Code 6-Trading such as selling grocery, recharge coupon;

Code 7-Services like micro lending;

Code 8-Food business like processing, preserving, cooking and selling etc.;

Code 9-Not engaged (in Handicraft/ Handloom activities and Micro/Small/ Medium business).

**5.13 SECTION L. CLOSING INTERVIEW**

After the completion of interview, write the day, month and year of interview for the household in the space provided for it.

## Chapter 6

### Instructions for Filling up

#### Form 3: Particulars of Suco and Facilities Available

6.1 Form-3 is one of the 3 questionnaires to be accomplished in the TLAC 2019. However, this is designed to be a self-administered questionnaire. This is to be answered by the village (Suco) leader/head himself or herself. This is to be distributed in all villages in every Post Administrative Areas and every Municipality. This will provide data on the different physical attributes of the village such as topography, type of soil and natural disaster as well as available of socio-economic infrastructures such as school, hospital, transportation, agricultural machineries, economic activities, etc.

6.1.1 As a team supervisor, you should distribute this questionnaire to leader/head of each village under your jurisdiction. Before you leave the place of the village leader, ask him whether he or she can read the questionnaire and write the responses in the spaces or boxes for all questions. If the village leader knows how to read and write, let him/her familiarize and glance first all the questions in Form-3. Then ask him/her if there are questions that he/she cannot understand. Explain to him/her what to do with those questions that seem to be difficult for him/her to respond.

6.1.2 If the village leader cannot read and write, ask him/her to delegate one of the village officials who can answer the questions in Form-3. Explain all important information/procedures in answering Form-3 to the person who will be given the responsibility in answering such questionnaire.

6.1.3 Tell the village leader or the person answering Form-3 that you will be back the following day to collect the filled-in Form-3. Once the filled-in Form-3 is received, the team supervisor will load the information in CAPI in the field itself and if there is any inconsistency, he/she should immediately contact the leader/head or the person deputed by him/her to clarify and correct the information.

#### 6.2 Important Procedures to be Emphasized

The following procedures should be emphasized to the village leader or to the person who will answer Form-3.

1. Name, sex and age of the village leader should be entered in the spaces/boxes provided.
2. Name, sex and age of the respondent (whether the village leader or another person is answering) should be entered in the spaces/boxes provided.
3. All data items in most of the questions with Yes or No choices should be answered by recording the corresponding code or circling the answer in each corresponding box. For example,

<b>2. Type of Soil</b>	<b>Sandy</b>	A
	<b>Loam</b>	B
	Clay	C
	<b>Black cotton soil</b>	D
	<b>Sandy loam</b>	E
	<b>Others (Specify ..... )</b>	Z

4. Response to the question with different coded choices but needed one coded answer should be entered in the box provided. Moreover, response to the question that needed exact answer should be entered in the box provided. For example,

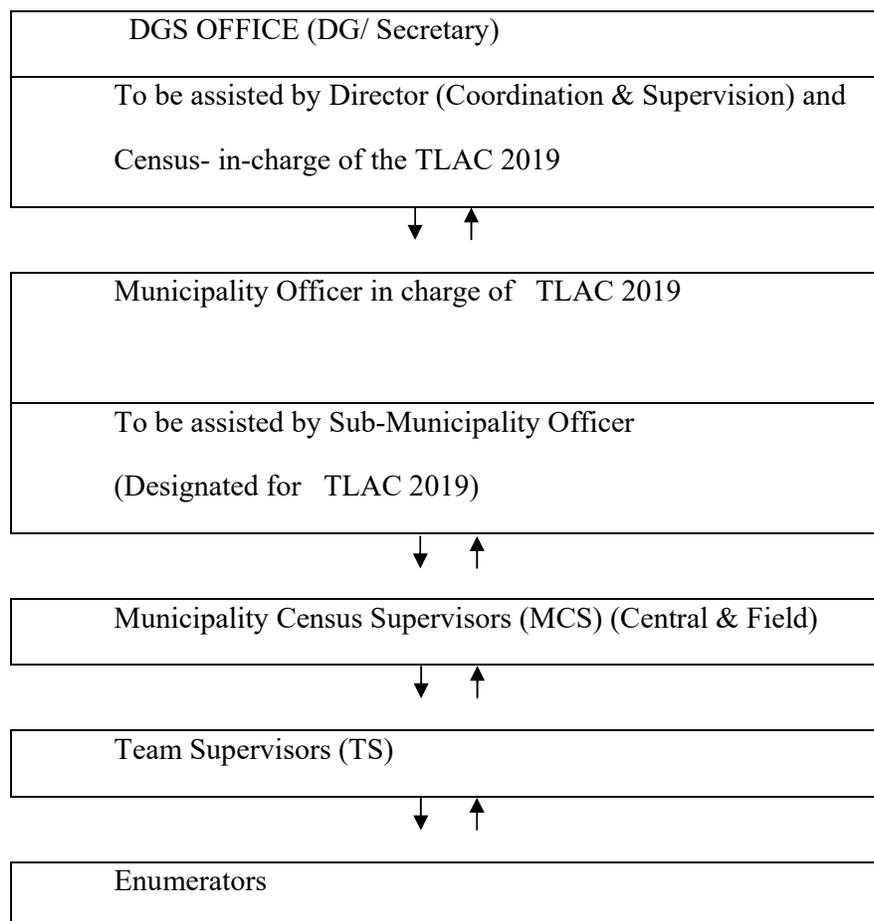
<b>13.2 Detail of Farmer Organization/Self Help Group/Associations/Cooperatives</b>				
Name of Organization	Legal Status (Code)	Number of Members	Area of Financial Support	Sources of financial support (Code)
(1)	(2)	(3)	(4)	(5)
Registered Farmer association	2	27	2	2
Self help group	4	21	1	4

6.2.1 As you supervise the work of each enumerator each day, pass by the village leader's place to determine whether the village questionnaire has been filled-in. If filled-in, check all questions whether these have been answered and the responses have been recorded properly. If the questionnaire has been answered correctly, thank the village leader for his/her responses and cooperation for the census of agriculture. However, if the questionnaire has not been filled in or if filled in but wrongly recorded the responses, assist him/her in filling in Form-3.

## Chapter 7

### Field Instructions Guidelines for Quality Control during the Field Supervision

#### Flow Chart for the Hierarchy of Supervision and Channels of Communication



#### 7.1 Guidelines for Quality Control during the Field Supervision

The following should be the different activities and quality control procedures that should be used by the Municipality Census Supervisors (MCSs) and Team Supervisors (TSs) to properly monitor the progress of listing and enumeration of TLAC 2019 and detect early the problems of data collection so that appropriate measure could be taken.

1. Weekly Meetings between MCS and TS and Submission of Weekly Progress Report

The MCS is required to meet the TSs every Friday during fieldwork. In addition to this, he/she may call for a special meeting if deemed necessary. During the

regular meeting, weekly progress report or the report on the actual number of EAs listed and enumerated during the week preceding the meeting, the problems encountered during the field work, performance of the enumerators (ENs), etc. are to be discussed so that solutions are appropriately provided.

Based on the weekly progress report of the TSs, the MCS is to prepare and submit the weekly progress report on the 2019 data collection in his/her province.

## 2. Meetings between TS and EN

The TS is to meet the ENs before the enumeration period, probably after the training of the TSs and ENs to discuss strategies to facilitate enumeration of their assigned areas. The TS is also expected to meet at least 2 of the ENs per day to ensure that they are doing their work accurately. The TS is also required to set up a weekly meeting with the ENs under his/her supervision to check the progress of their enumeration, to have them submitted their weekly status report, to discuss with them the results of the observation/spot-checks/re-interviews conducted, to point out errors committed by the ENs, to give them suggestions on how to improve the conduct enumeration and to provide solutions to the problems encountered during the listing and enumeration of the past week preceding the meeting.

## 3. Communicating Effectively with the EN

The TS is to maintain an efficient means of communication with the ENs to monitor their progress of the enumeration daily. The communication involves listening to their problems and finding fast and effective solutions to their problems. The TS is to resolve the most common problems of the ENs by using the Enumerator's Manual and Supervisor's Manual. If the solution could not be found in these reference materials and the TS could not solve such problem, he/she is to contact the MCS for possible solution.

## 4. Observing the Conduct of Enumeration

It is expected that the MCS and TS should spend most of their supervision time in the field observing the conduct of listing and enumeration. This duty is to assure that the procedures for canvassing, listing, interviewing and recording of responses are being followed. However, in observing, the MCS and TS should not interfere while the EN is conducting the interview so that the EN is not disturbed and the flow of the interview is done smoothly. The MCS and TS should write down their observations and comments while the interview is in progress.

During the first day of the listing and enumeration, the TS were to spend half day with each EN to observe the way the EN conducted an interview. This would check early if the EN was doing the data collection properly. It is better to correct

instantly the errors committed by the EN. The TS should immediately inform the EN of the errors and should suggest improvement for the next interview. The TS should spend more time with ENs who might commit more interview errors and those who could not meet the expected output.

#### 5. Correcting Errors as Early as Possible

Early detection of errors leads to early correction of such errors. Errors are best corrected on the spot so that repeat occurrence of the same errors could be avoided. The census supervisors (MCS and TS) should be aware of some common problems of enumeration so that they can anticipate the kind of errors to be expected and be ready to deal with these errors. These common problems include:

- a) Inaccurate coverage of households located near the EA boundaries,
- b) Omission of household residing in isolated parts of the EA, and
- c) Failure to follow the skipping patterns, etc.

#### 6. Conducting Spot-checks and Re-interviews of Some Enumerated Households

One way of checking if the EN is really doing the listing and enumeration of households in their assigned EAs systematically to ensure completeness of coverage to conduct spot-checks and re-interview. In spot-checking, the census supervisors (MCS and TS) should check without limiting to the following:

- a. Buildings/Houses are listed in the order they are plotted on the map, that is, along the route of enumeration;
- b. No households are missed by the EN;
- c. In cases of call-backs, the households are already revisited by the EN or TS; and,
- d. All questionnaires are completely and accurately filled out.

For the re-interview of listed and enumerated households, some (not all) of the important questions in the Household Questionnaire (**Form 2**) may be asked from the same households.

#### 7. Ocular Inspection of the TLAC 2019 Sticker – Notice of Listing and Enumeration

The MCS and TS are responsible for the complete listing and enumeration of all households within each selected EA under their jurisdiction. The Notice of Listing and Enumeration (sticker) to be posted in the conspicuous place of the building/house where the household lived, should be visually inspected. If no sticker had been posted in the building/house although the household had been interviewed already, the MCS/TS should inform the EN immediately.

## 8. Replacing the ENs who Cannot Meet the Required Output

An EN should be replaced only if he/she cannot meet the required output or for other valid reasons. Before doing so, the TS concerned should exercise good judgement to determine whether the EN can really meet the required output. Whenever the TS deem it necessary to replace the EN, the TS should not hesitate to recommend for possible replacement of the EN to the MCS, who in turn should endorse the recommendation to the Central Census Office.

The following might be grounds for recommending the replacement of an EN:

- a. The EN is not working when he/she is supposed to work;
- b. The EN engaged someone else do the work for him/her;
- c. The EN fabricated the information;
- d. The EN violated the confidentiality of the census results;
- e. The EN behaved unethically;
- f. The EN did not improve/correct his/her errors within 2 working days, after being informed of the omissions/errors.

## 9. Collecting and Editing the Accomplished Questionnaires

The TS should meet the ENs to collect and check the accomplished questionnaires. Keeping in view that the entire data will be collected in CAPI, to properly account for each type of questionnaires received from the ENs, the TS should do the following:

- a. The TS should arrange questionnaires in ascending household of serial number and by EA. CAPI software may take care of this issue itself.
- b. The TS should check and make sure that every household with agricultural holdings listed in Form 1 and all household has a corresponding filled-in Form 2.
- c. The TS should check the entries in Form 1 against Form 2 to ensure consistency. The TS shall use the guideline in scrutinizing the accomplished census questionnaire.
- d. The TS should reflect the number of accomplished questionnaires received from the EN in the Transmittal/Receipt Form/Register.
- e. The TS should review thoroughly all submitted census questionnaires to check for the completeness and legibility of entries. If he/she finds some missing or inconsistent entries on the questionnaires, he/she should return these questionnaires to the EN. He/she should provide instructions on how to correct the errors. He/she should also instruct the EN to revisit and re-interview the household(s) for the incomplete and inconsistent filled out questionnaires. The observation should be properly written at the remarks portion or space available in the listing sheet or questionnaire with the TS initials affixed and the date when the questionnaires are returned. He/she should also write the number of questionnaires returned in the Transmittal/Receipt Form/Register.

## 10. Submission of Edited Census Questionnaires to the MCS

After reviewing and editing the accomplished census questionnaires, the TS shall submit these to the MCS. The MCS is to do the following:

- a. Reflect the number of transmitted census questionnaires in the Transmittal/Receipt Form/Register.
- b. Verify the census questionnaires on a sample basis, to make sure that the entries in the questionnaires are acceptable. He/she should review 1 questionnaire in every 12 submitted questionnaires for each EA to ensure consistency and completeness of entries, using the instructions on how to scrutinize the census questionnaires.
- c. Verify all census questionnaires for each EA if half of the verified questionnaires failed the verification test, which meant the questionnaires contained errors.
- d. Return all questionnaires with full of errors or with incomplete entries to the TS for his/her follow up. Write the number of questionnaires that needed follow up on the Transmittal/Receipt Form/Register.

## 11. EN's Final Submission of Listing Form, Questionnaires and Accomplishment Report

Upon completion of enumeration in any of the assigned selected EAs, the EN should turn over the listing form and the questionnaires to the TS. In this case, the TS should:

- a. Review the questionnaires and the entries on the listing forms.
- b. Check whether all households with agricultural holdings had been received.
- c. If there are missing Form 2, required the EN to submit the missing questionnaires. If there are households with agricultural holdings which an EN failed to interview, instruct the concerned EN to go back to the assigned area and enumerate the households.
- d. Verify if the entries in the EN's Daily Accomplishments Report correspond to those listed in the listing form. TS should call the attention of the EN if there are discrepancies and asked the concerned EN to reconcile the discrepancy.
- e. If everything is in order, the TS should affix his/her signature on the space provided in the EN's Daily Accomplishment Report.

### **7.2 How to Handle Enumeration Problems**

The following are some problems that are encountered during the census data collection:

1. No possible respondent or no responsible person to interview in the household to be enumerated or the entire members of the household to be enumerated is away.

If during the first visit of the EN to the household there is no possible respondent or no responsible person to be interviewed or all members of the household to be enumerated were away, the EN should make a call-back at the earliest opportunity. A callback is a revisit to a household to be enumerated whose respondent could not be interviewed by the enumerator during his/her previous visit. Any unsuccessful visit to such household in the same day as the previous visit should not be counted as callbacks.

Inquire from the children or helper or neighbor of the household when is the best time to make callback, that is, the best time to find the respondent at home. Leave an appointment slip to any person in the household, indicating the time and date for an interview. Attach a piece of paper in the questionnaire(s) for the household to be enumerated with the same date and time for the next visit as a reminder for you.

If after the third visit to the said household, there is no one or no responsible member available despite issuance of appointment slip, refer this problem to the team supervisor who would then find a way to contact the household and set an interview date for the EN.

If all members of the household are away, it is to inquire from the neighbor about the date and time they could be back. If they are to be back within the enumeration period, then it is to leave an appointment slip with the neighbor, indicating the date and time the EN would interview the said household, and should be sure to give some instructions regarding the purpose of such visit.

If the household to be enumerated would be back after the enumeration period, it is to enter in the space provided for remarks in the questionnaire: HOUSEHOLD WHOSE HEAD IS \_\_\_\_\_ IS AWAY AND WILL BE BACK ON \_\_\_\_\_ (state the date) and then to refer this immediately to the team supervisor who would then report this matter to the MCS.

2. Household to be enumerated refuses to answer or provides under-estimated information

If during the EN visit to the household to be enumerated, the head or any member refuses to answer or to provide information, the EN should try to find out the reason for he/she might be busy at the moment or he/she/the entire household has a problem. Then if this is the case, the EN should make an appointment to interview the said household in another day, at the time within the census enumeration period when the respondent is ready to provide information.

If any of the household members refuses to answer the census questionnaires, even though there is no valid reason for doing such refusal. The EN should persuade

them by explaining the importance of the census and that their responses would be held confidential. After all the efforts the EN has done and the said household is still refusing, the EN should refer this matter to his/her TS who should solve such problem.

If the household to be enumerated provides the answers but there is doubt on the accuracy of the responses, the EN should try to PROBE by asking additional questions. But he/she should not make any unnecessary comments that might offend the respondent.

7.3 Possible scrutiny points of Form 3 is given in Appendix D, which may be followed strictly while collecting data.

## Chapter 8

### Methodology of Area Measurement in TLAC 2019

#### 8.1 Recommendations on area measurements

Considering that the measurements at holding level would be taking half a day, only 20 HH's can be object of parcels measurement per Enumeration Area in a ten days period, what means that a sampling rate of 20% will be applied in each EA, selecting systematically one HH every five (1,6,11,16,...). This will result in a sample of 45,000 households uniformly spread over the whole territory.

To start his work the GPS taker will need to have received on his tablet the gpx file of the Enumeration Area limits and the holding information collected precedingly by one of the two enumerators of his team. This means that tablets will need a SIM card and the installation of a software like Dropbox allowing automatic exchange of info among tablets and central server. This implies also that in order to avoid wasting time, GPS takers and enumerators have to work separately.

In summary the measurement work will be structured as follows:

- First a GPS waypoint will be observed and saved at the entrance door of the HH's residence building. The file naming will use the 9 digits code of the EA, followed by a 3 digit code for the HH serial number. The coordinates will also be entered on the tablet and will be of the following format: S 08°32.820' and E125°33.209'

- Then the homestay parcel will be measured. At parcel level, the surveyor will first follow the limits as indicated by the farmer. Only then he will start again his turn around to get the measurement. He will enter the measurement on his tablet (in hectare with 3 decimal figures) and save the track on his GPS device using the above mentioned 12 digits followed by the parcel number (1 in this case).

- His work will then consist in identifying the different plots (homogeneous land use/crop) composing the parcel. He will then measure each of the plot, saving the track with the above mentioned 13 digits parcel number followed by the plot number (most often between 1 and 5). On the tablet, he will save the plot areas and their land use code.

- After completing the plots' measurement of one parcel, he will repeat the parcel and plot measurements for the other parcels declared by the farmer.

- In case of far-away parcels (more than half an hour distance), he is authorised to drop the measurement if he has already measured 3 parcels. The same will hold if a river obliges to find a bridge imposing more than half hour distance.

- Every day, he will have to reach a place having wifi or phone connection to allow download and upload of information to/from the central server. This will also allow real time monitoring of the progress of work and to detect the missing data or obvious errors (imposing to a repetition of the measurements).

- Plausibility checks have to be foreseen on the tablet CAPI to avoid for example that plots (or their sum over reported land use classes) are larger than parcel areas.

These recommendations will be object of a protocol to be inserted in the enumerator manual. A particular attention has to be given to the availability of AA batteries for the GPS devices. Considering that a set of 2 batteries is needed by device and last 2 days, 20 batteries are needed per surveyor. As there will be 1,200 surveyors, this result in a total of 24,000 AA batteries needed.

### 8.2 Estimation note: Sampling design and extrapolation factors

- Selection of HH holdings: The selection probability of HH holdings will thus be given by the ratio between the number  $n_H$  of GPS sampled HH's versus the total number  $N_H$  of holdings in the EA:

$$p_H = n_H / N_H. \quad (1)$$

For non HH holdings, the sampling probability equals 1 except in case of more than 4 institutions where the sampling probability will be ratio between the number of sampled institutions  $n_H$  versus the total number of institutions  $N_H$  in the EA:

$$p_H = n_H / N_H. \quad (2)$$

- Parcels/plots selection: In principal, all parcels and plots will be object of measurement. In case of far-away distances from the HH's homestay, the surveyor will drop off the additional parcel(s) in case that at least 3 parcels have already been GPS measured. In such case the sampling probability at parcel level within holding will be given by the ratio between the number of measured parcels  $n_{P/H}$  versus the total number of parcels  $N_{P/H}$ :

$$p_{P/H} = n_{P/H} / N_{P/H}. \quad (3)$$

This will results in the following extrapolation factors:

-The global sampling probability of each plot (within an EA labelled i) will thus be the product of  $p_{iH}$  and  $p_{iP/H}$ , that is:

$$p_i = p_{iH} \times p_{iP/H}. \quad (4)$$

Remember that most of the time the plot selection probability ( $p_{iP/H}$ ) will be equal to 1.

- Thus the extrapolation factors, that is, survey weight ( $w_i$ ) for EA labelled i is:

$$w_i = 1 / p_i = 1 / [p_{iH} \times p_{iP/H}] \quad (5)$$

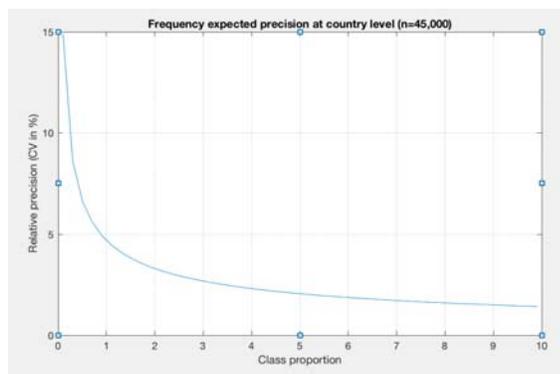
The difference between a census approach and a survey approach is that in any tabulation (mean or frequency distribution) any considered unit has a weight different from one. Sampling theory shows that the extrapolation factor to be used in order to get unbiased estimates at population level is just the inverse of the sampling probability (as defined above). The interested reader will find in annex additional remarks on expected precisions and potential bias (Annex 1). Methodology followed in the World Bank LSMS-ISA protocol is given in Annex-2.

## Annex 1: Expected Precision and Potential Bias

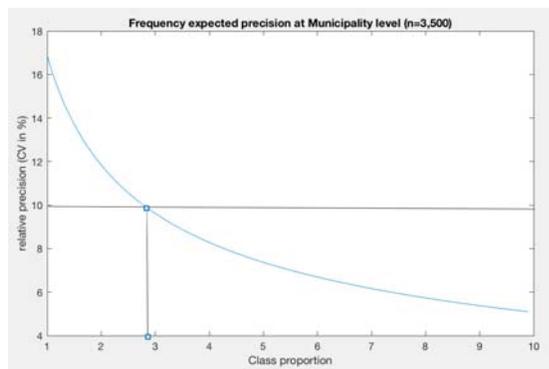
### Estimation of precision

As mentioned above, we expect sample sizes of 100 holdings at Suco level, 700 at submunicipality level, 3,500 at municipality level and 45,000 at national level. Expressing the precision as the coefficient of variation (defined as the standard error of the estimate divided by the mean), we have for the proportions and frequencies that the expected relative precision expressed in percentage equals  $CV=100*\sqrt{(1-p)/(np)}$ , with n being the sample size (number of holdings) and p the proportion with try to estimate (the frequency being the proportion multiplied by the population size).

At country level, we see that relative precision below 10% is expected for proportion above 0.5%.



At municipality level, we see that relative precision below 10% can be expected for proportion above 3%.



For the areas, let's consider that the holding area follows a uniform distribution between 0 and 5 ha. This implies a mean value of 2.5 ha and a variance of 25/12. The CV will thus be of 58%, what we could consider as an overestimation as the distribution is probably more like a left skewed normal distribution showing a lower variance (but more complicated to manage). The CV of the total or average areas of holdings will thus equal the initial CV divided by the square root of the sample size.

This will give respectively at country, municipality, sub-municipality and Suco level: 0.3%, 1%, 2% and 6%.

Once we will look by type of crop, the CV's will increase, but we lack information to predict what will be the increase. We would guess that for the major crops, the CV's could be 2 or 3 times greater, so still below 10% up to sub-municipality level.

**Potential bias**

It should be noted that "land area" is usually computed and represented on projected cartographic material (Cadastre is the best known activity, usually based on local projections). The areas we will measured will not be projected what will lead to a systematic overestimation function of the slope. Considering a slope into only one direction, one has that the projected length equal the initial one multiplied by the cosines of the slope angle. For slopes of respectively 10%, 20% and 40% (so 5.7°, 11.3°, 21.5°) the overestimation will be of the order of 0.5%, 2% and 7%.

## Protocol for GPS Measurement

1. In addition to a tablet with CAPI software, you have received a GARMIN GPS device (either an ETREX 10 either an OREGON 650) and 24 spare batteries. A pair of batteries is expected to last for two days. This implies that you shut down your GPS when not in use.



As GPS surveyor, you are expected to register two types of measurements:

- waypoints at the entrance door of each holding and of the location of each of its parcels<sup>1</sup>,
- tracks of the limits of parcels and plots of each holding subject to GPS measurement (one every fifth).

<sup>1</sup> A parcel is any piece of land of one land tenure type entirely surrounded by other land, water, road, forest or other features not forming part of the holding, or forming part of the holding under a different land tenure type.

A plot is a part or whole of a parcel on which a specific crop or crop mixture is cultivated, or which is fallow or waiting to be planted.

You are also expected to take photos with your tablet but as the tablet positioning accuracy is poor compared to your GPS device, only the Garmin GPS will be used for measuring waypoints and tracks.

The GPS device uses satellites to find your geographical position on the earth surface by longitude and latitude. The position is found by measuring the time a satellite signal takes to reach your GPS from a satellite in the sky. At least 4 satellites are needed to be able to calculate an accurate geographical position.

Before any measurement, you should thus first verify the quality of the signal received in term of number of “satellites in view” and accuracy of the signal (should be below 5 meters)<sup>2</sup>.

You will always exit a page by pressing the “back” button on the top right of the device.



**2. What you have to fill in by CAPI are the following two tables :**

**Section A. GPS Coordinate of Holding**

(GPS coordinate to be captured at entry door of holding)

Latitude	S				°			.			'
Longitude	E				°			.			'

<sup>2</sup> Main menu layout: you can reorder the items on the main menu screen by pushing the menu button on the left of the GPS and selecting change item order.

**Table C4.1 PARCEL Measurement** (asked every fifth household, and asked of every institutional holding)

Parcel ID	Latitude (GPS measurement)										Longitude (GPS measurement)										Area (hectares, GPS measurement)					Photo of Parcel	Number of plots						
(1)	(2)										(3)										(4)					(5)	(6)						
1 (Prefill)	S											E																					
2 (Prefill)	S											E																					

**Table C4.2 PLOT Details** (asked every fifth household, and asked of every institutional holding)

Parcel ID	Plot ID	Area of Plot (hectares, GPS measurement)										Photo of Plot	Main crop grown on plot <sup>1</sup> <small>(If None, skip to question 9)</small>	Method of Planting <sup>2</sup>	Type of Planting <sup>3</sup>	No. of Trees	Main use of land <sup>4</sup>																
(1)	(2)	(3)										(4)	(5)	(6)	(7)	(8)	(9)																
1 (Prefill)	1 (Prefill)																																
1 (Prefill)	2 (Prefill)																																

Note: Photo file names will follow same convention as GPS files.

**3. You are expected to survey two holdings per day and your work will be organized in the following way:**

- First a GPS waypoint will be observed at the entrance door of the holding’s residence building. Coordinates will be saved on the tablet (section A) and on the GPS device. The file naming will use the 9 digits code of the EA, followed by a 3 digits code for the holding serial number. To insert the name you will use the joystick to move to the “name” box at the top of the screen, select it by pressing the joystick, delete the default name and insert the figures one by one and select “done” at the bottom to save the name. To save the waypoint you will select again the “done” box. Saved waypoints shall be retrieved by selecting “Waypoint Manager” in the main menu to verify they have been correctly saved. You exit by pressing the back button.

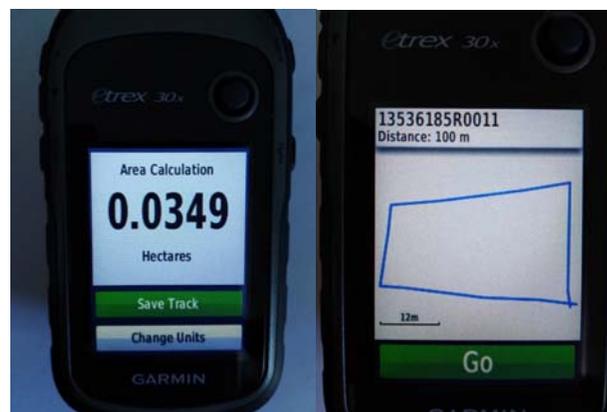


- Then the homestay parcel will be measured.
  - o At parcel level, the surveyor will first follow the limits as indicated by the farmer to clearly identify to object to be measured.

- He will then identify his starting point by dropping an object on the ground
- He will take a photo in the direction of the centre of the parcel with the tablet.
- He will also register a waypoint of his starting point (see above how to do it).
- Then he will select “Area calculation” on the main menu of the GPS, and will select “Start”. Only then he will start again his turn around following closely the parcel’s limits and making a pause of 5 seconds at each change of direction (corners).



- After reaching-back his starting point, he will get the area measurement by selecting “Calculate”. He will enter the measured area on his tablet (in hectare with 3 decimal figures, table C4.1) and must just after save the track on his GPS device using as name the above mentioned 12 digits followed by the parcel number (1 in this case). He will review his work by selecting “Track manager” on the main menu to see the shape of the measured parcel (but cannot anymore retrieve the area!). He will exit the page using the back button the top right of the GPS device.



- His work will then consist in identifying the different plots (homogeneous land use/crop) composing the parcel. He will measure each of the plots and take a photo following the same procedure as for parcels (without registering waypoint at plot level), saving the track with the above mentioned 13 digits parcel number followed by the plot number (most often between 1 and 5). On the tablet (table C4.2), he will save the plot areas and their land use codes.
- After completing the plots’ measurement of one parcel, he will repeat the parcel and plot measurements for the other parcels declared by the farmer.

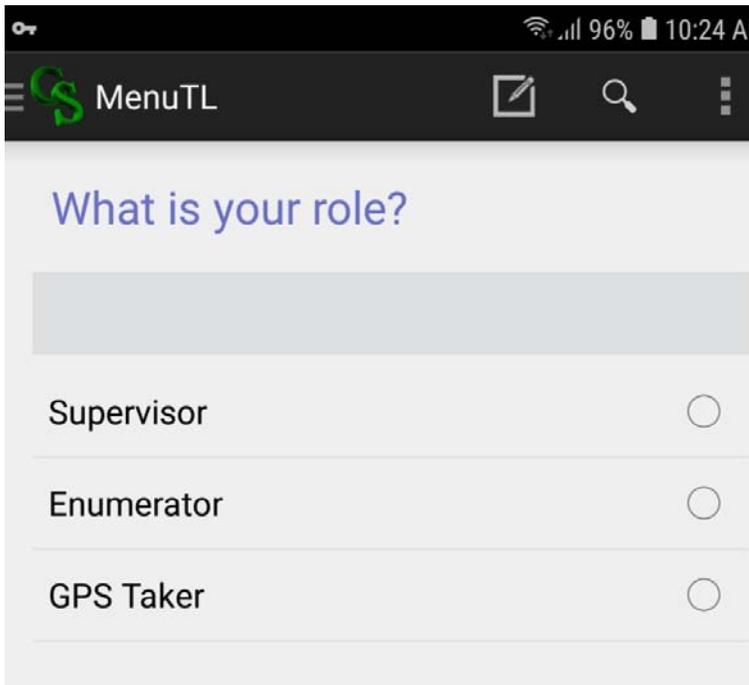
- In case of faraway parcels (more than half an hour distance), he is authorised to drop the measurement if he has already measured 4 parcels. The same will hold if a river obliges to find a bridge imposing more than half hour distance. These non-measured parcels will anyway to be listed on the C4.1 form and will be subject of random checks by the supervisor.
  
- Every day, the GPS surveyor will have to reach a place having WIFI or phone connection to allow the tablet proceeding to the automatic download and upload of info to/from the central server. This will also allow the central team performing real time monitoring of the progress of his work and to detect his missing data or hisobvious errors (possibly imposing a repetition of the measurements).
- Every day, the GPS will have to be connected to the tablet with the OTG cable to download the waypoints and tracks registered (The Etrex 10 can store only 100 tracks)
- Plausibility checks have been foreseen on the tablet CAPI software to avoid for example that plots (or their sum) are larger than parcel areas. In such case, an error message will appear on the tablet screen.

## Chapter 9

### CSPro Data Collection Manual in CAPI

#### Supervisor

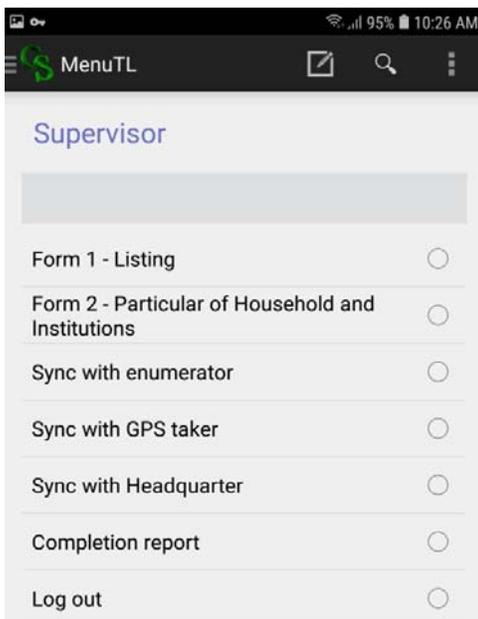
**Step1:** Select Supervisor option on the What is your role ? on the menu section.



The screenshot shows the MenuTL application interface. At the top, there is a status bar with signal strength, 96% battery, and the time 10:24 AM. Below the status bar is a dark header with the MenuTL logo and navigation icons. The main content area has a light gray background with the question "What is your role?" in blue text. Below the question is a list of three options, each with a radio button to its right:

- Supervisor
- Enumerator
- GPS Taker

**Step2:** Swipe or tap on the left/right navigation to assign, receive data from enumerator and GPS taker, sync to head quarter and check the household/institution listing completion report.



The screenshot shows the MenuTL application interface after selecting the Supervisor role. The status bar at the top shows 95% battery and the time 10:26 AM. The header and navigation icons are the same as in the previous screenshot. The main content area has a light gray background with the title "Supervisor" in blue text. Below the title is a list of seven options, each with a radio button to its right:

- Form 1 - Listing
- Form 2 - Particular of Household and Institutions
- Sync with enumerator
- Sync with GPS taker
- Sync with Headquarter
- Completion report
- Log out

**Step3:** Select option **Form1 Listing** to check the Household/Institution listing

**Step4:** Select option **Form2 Particular Household and Institutions** to check and assign only Agriculture Household/Institutions to Enumerators and GPS Takers.

**Step5:** Select Syncs with Enumerator to receive Listing Household/Institution from enumerators.

**Step6:** Select Syncs with GPS taker to assign GPS Taker for GPS measurement of parcel and plot areas.

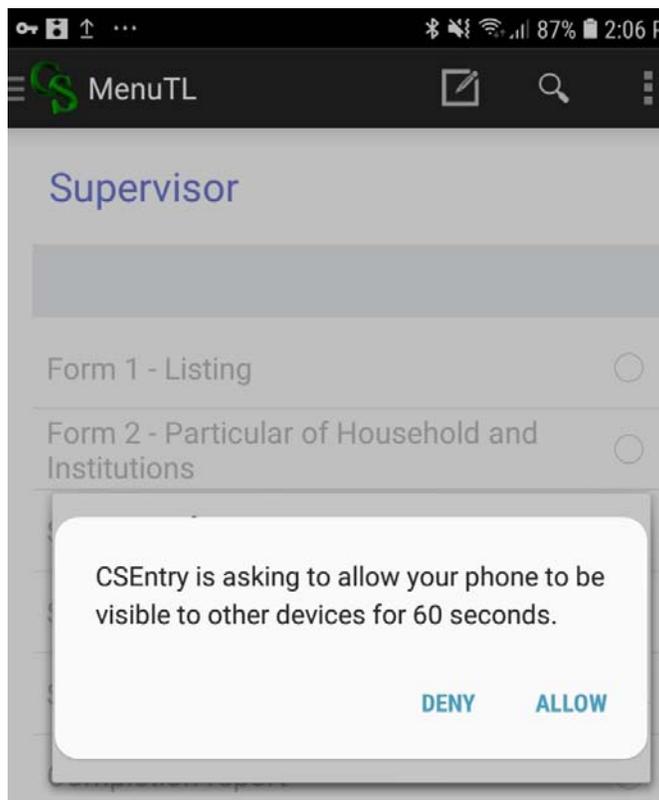
**Step7:** Select Syncs with Headquarter to send received data from Enumerators and GPS taker to the headquarter server on daily basis.

**Step8:** Select Completion Report to check the completed number of Listing Form1.

**Assign only Agriculture Household/Institution to Enumerators**

**Step1:** Select option sync with Enumerator to receive Listing Agriculture Data.

**Setp2:** Click on Allow to connect with Enumerator device.



**Step3:** Once enumerator device received the request the listing data appears including Agriculture and Non Agriculture on your/supervisor device.

**Step4:** Select Form2 Household/Institution and click on Start New Data by entering District, Sub District, Sector, Household SN, and EA code as per Listing Form1 that you received from enumerator.

**Note:** Once complete sets of Geo-code data with EA having district, sub-district, suco and its name It won't be entered all these fields. Only EA code needs to be entered then rest of IDs will be prefilled automatically from Listing Form1.

**Municipality (District)**  
**Municipality** where this holding is located?  
 (Select one)

Aileu	<input checked="" type="radio"/>
Ainaro	<input type="radio"/>
Baucau	<input type="radio"/>
Bobonaro	<input type="radio"/>

**Administrative Post (Sub-district)**  
**Administrative Post** where this holding is located  
 (Select one)

Aileu Vila	<input checked="" type="radio"/>
Lulara	<input type="radio"/>
Lequidoe	<input type="radio"/>
Remexio	<input type="radio"/>

**Suco (Village)**  
**Suco** where this holding is located  
 (Select one)

Aissirimou	<input checked="" type="radio"/>
Bandudato	<input type="radio"/>
Fahiria	<input type="radio"/>
Fatubossa	<input type="radio"/>
Hoholau	<input type="radio"/>

**Enumeration area code (EA)**  
**Enumeration Area code** where this holding is located  
 (Refer to EA map if required)

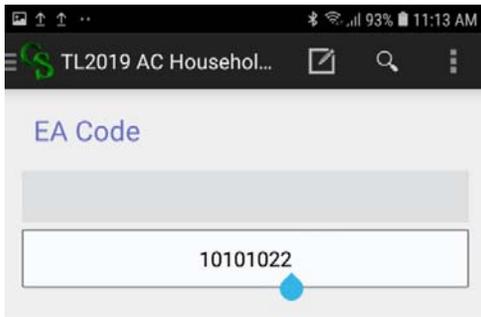
1

**Sector (Rural/Urban)**  
**Sector**  
 (Select one)

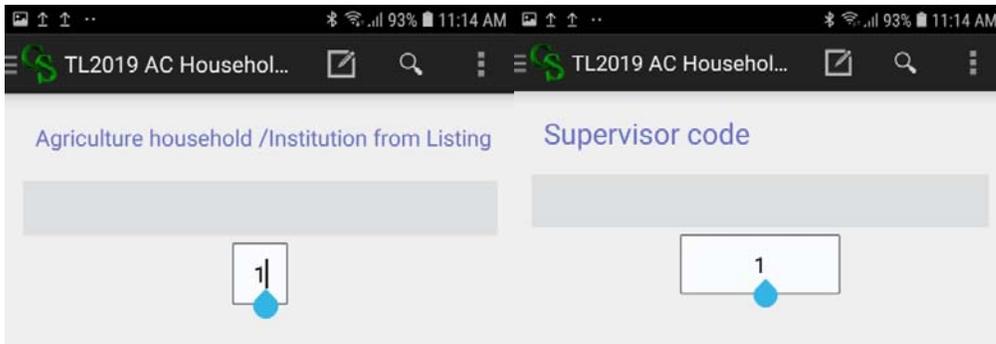
Rural	<input checked="" type="radio"/>
Urban	<input type="radio"/>

**Household and Institution serial number**  
**Sticker serial number**  
 (Please copy serial number from assigned sticker to this holding)

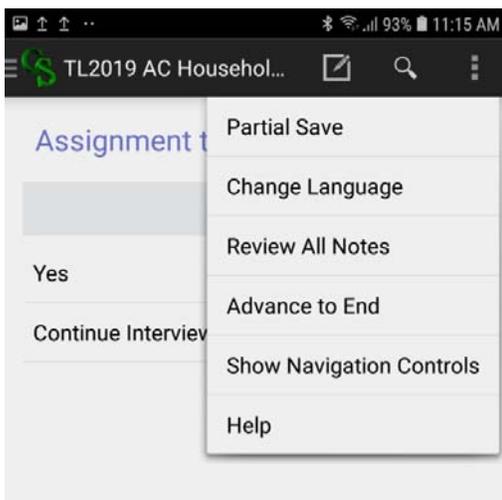
123



**Step6: Agriculture Household/Institution prefilled from Listing then enter Supervisor code any number between 1-999.**



**Step7: Click **Yes** on Assignment to Enumerator and Tap top right corner icon  to display pop-up menu. Then select **Partial Save** and tap on mobile backward to close the partial save section. Continue enter all Agriculture Household/Institution based on the listing data.**

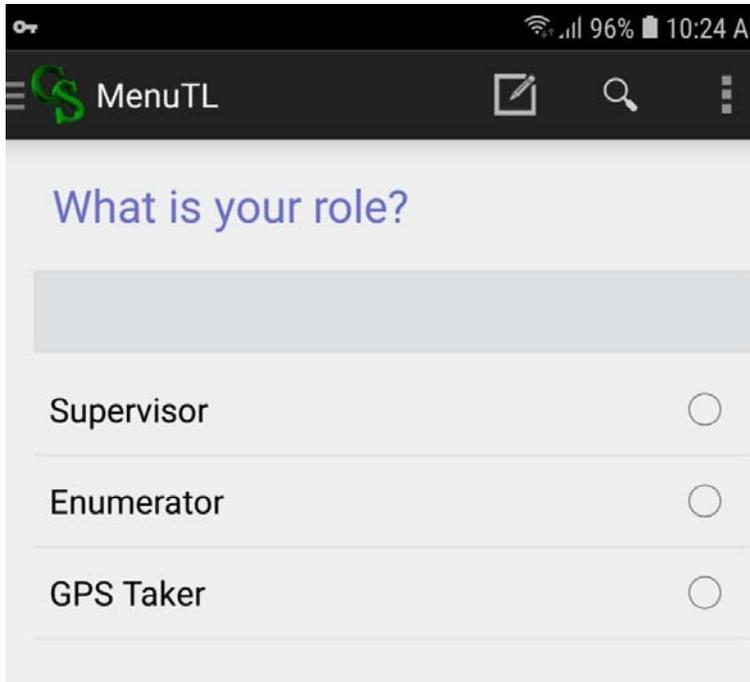


**Step8:** Follow the synching process once again with Enumerator in order to assign Agriculture Household/Institution to enumerator.

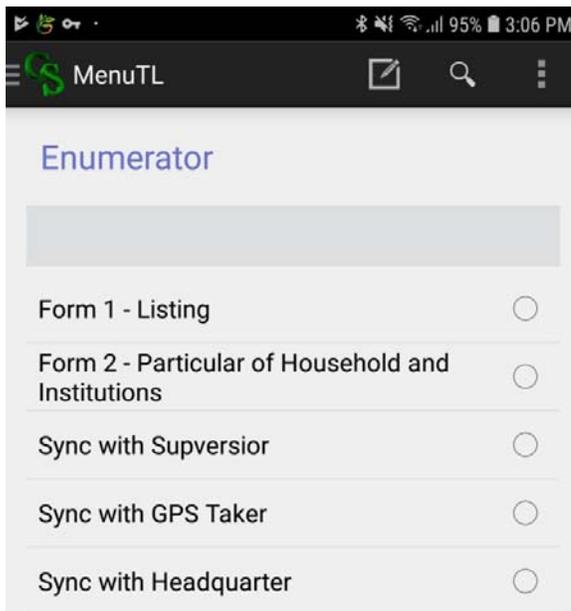
*Congratulation !*

## Enumerator

**Step1:** Select Enumerator option on the What is your role? on the menu section.



**Step2:** Select Form1-Listing to start listing Household/Institution interview.



**Step3:** Select all Household IDs followed by District, Sub District, Suco and EA code as per your enumeration areas codes.

TL2019 - Listing form

### Municipality (District)

Municipality where this holding is located  
(Select one)

Aileu

Ainaro

Baucau

**Step4:** Continue filling the questions' response until **Agriculture Household/Institution** section. You get prefilled response among the three given options. If this prefilled option is correct Swipe this section.

TL2019 - Listing form

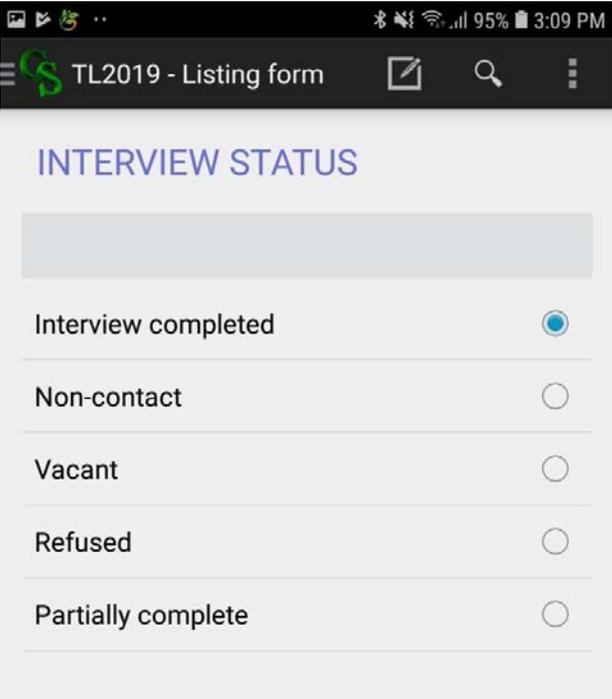
### Agriculture Household/Institution

Agricultural Household

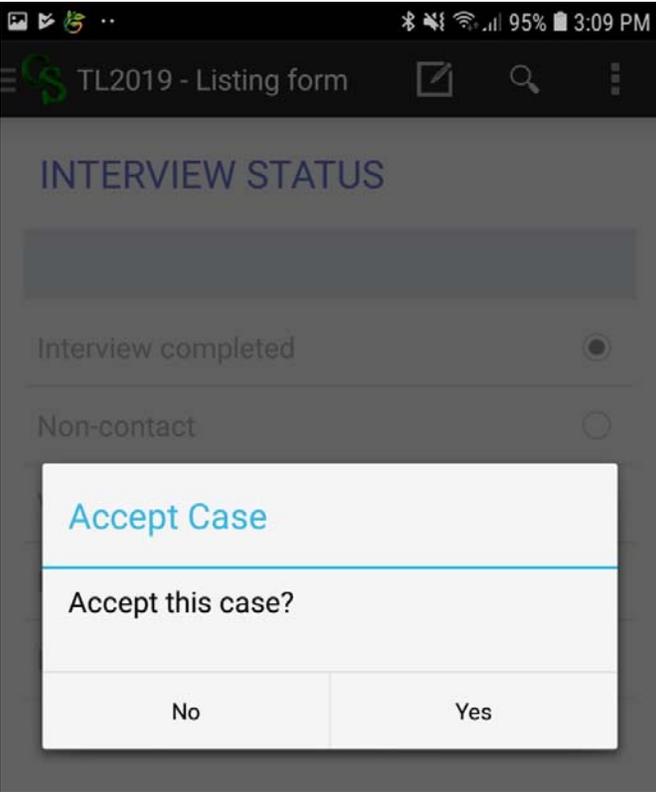
Agricultural Institution

None Agriculture

**Step5:** Select Interview completed if interview is completed otherwise select appropriate options.



**Step6:** Click Yes to accept the completed case.

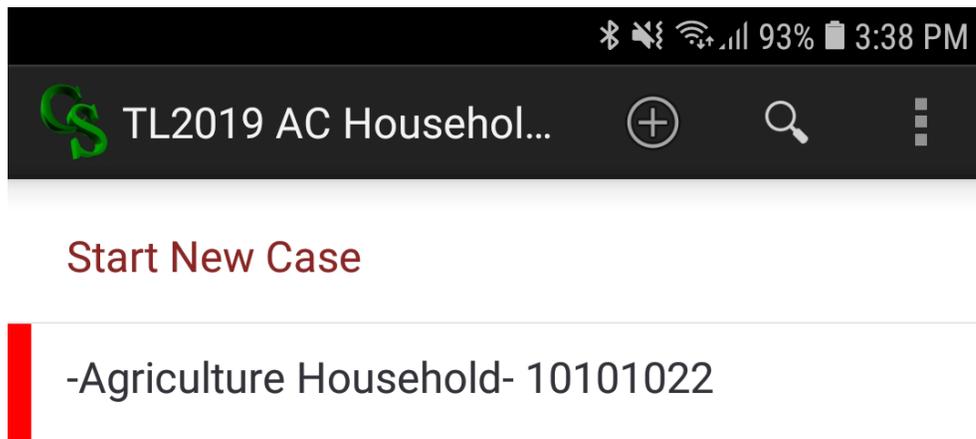


**Step7:** Select option Sync with Supervisor to send the listing data.

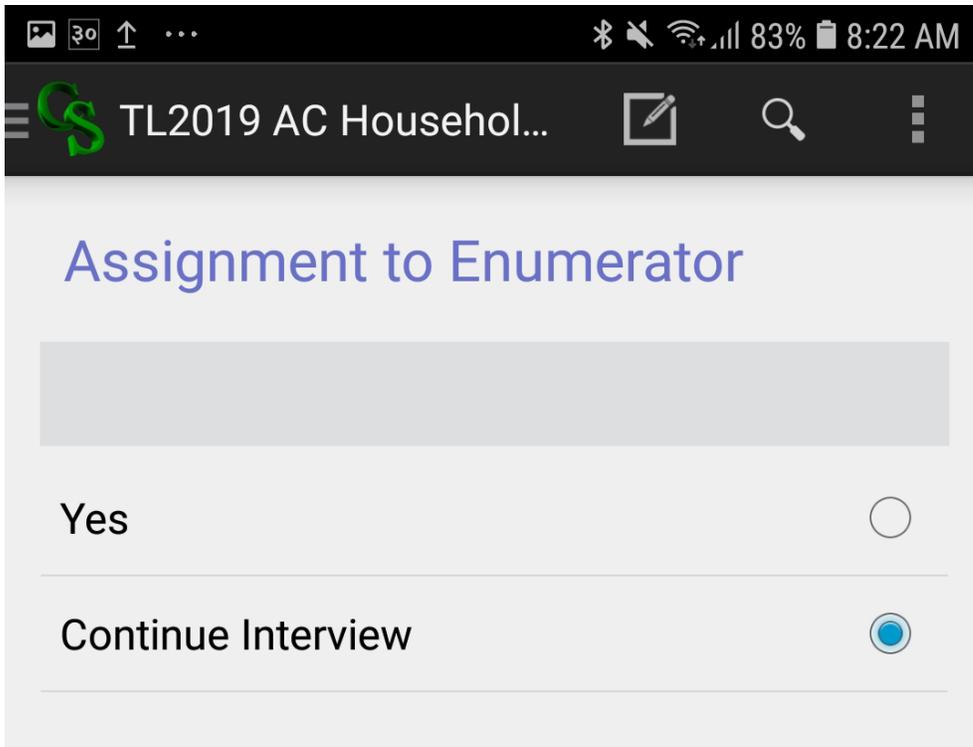
**Interview Form2- Agriculture Household/Institution assigned by Supervisor**

**Step1:** Sync with Supervisor to get assignment Agriculture Household/Institution Form2.

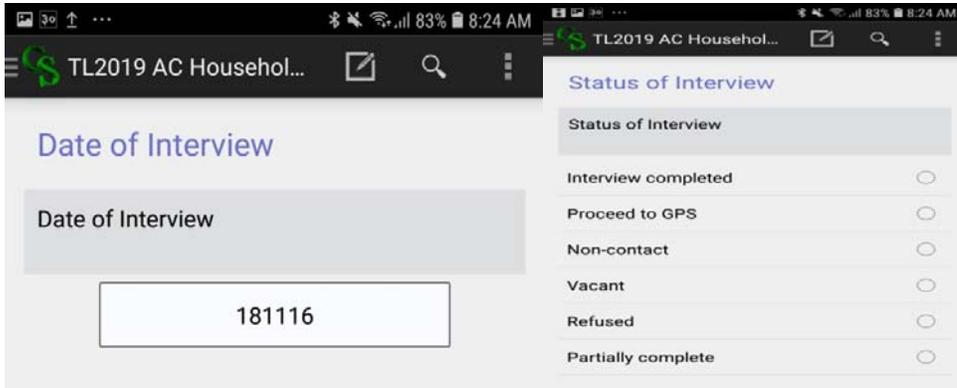
**Step2:** Assignment Agriculture Household appears with Red color bar on your device.



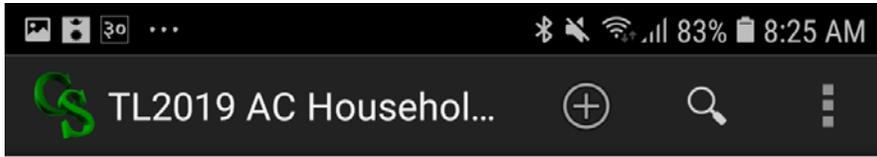
**Step3:** Tap on each cases with Red color bar and swipe continue on your device until you get **Assignment to Enumerator** section. Select **Continue interview** to begin interview.



**Step4:** Keep interview until you get at **Interview Status**. If interview is completed select Interview completed. Date of interview is auto generated by device itself.



**Step5:** Check the number of interview completed on the cases storage on your device. To do so follow the same process by selecting Form2-Household/Interview on the menu section, it appears cases name prefix with **Completed Agriculture Households/Institution** with EA code number.



Start New Case

---

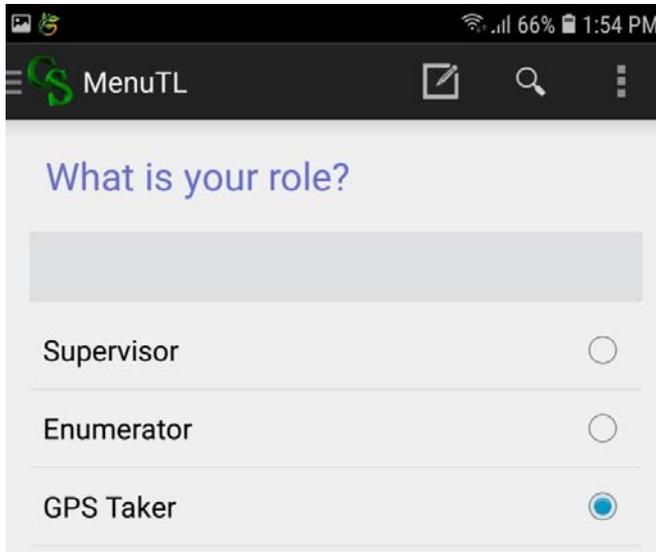
Completed Agriculture Household- 10101022

**Step6:** Syncs completed interviewed cases to Supervisor or directly to Headquarter depending upon internet available in the field.

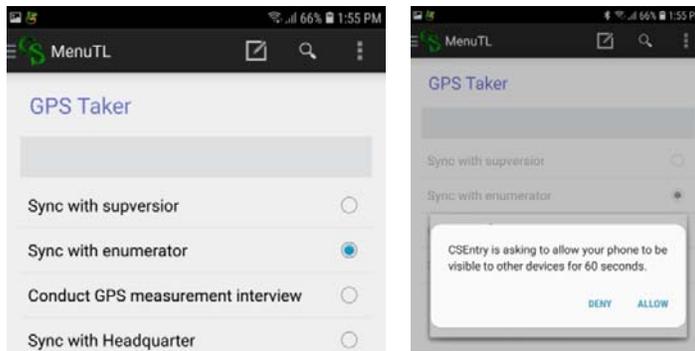
*Congratulation !*

## GPS Taker

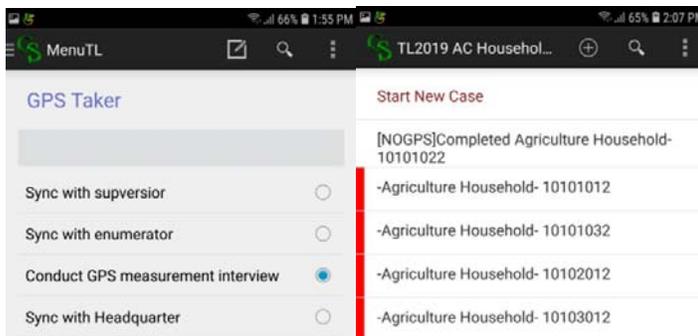
**Step1:** Select option GPS Taker from menu section on the device.



**Step2:** Tap on Sync either with Enumerator or Supervisor, and tap allow to receive Agriculture Household/Institution cases.

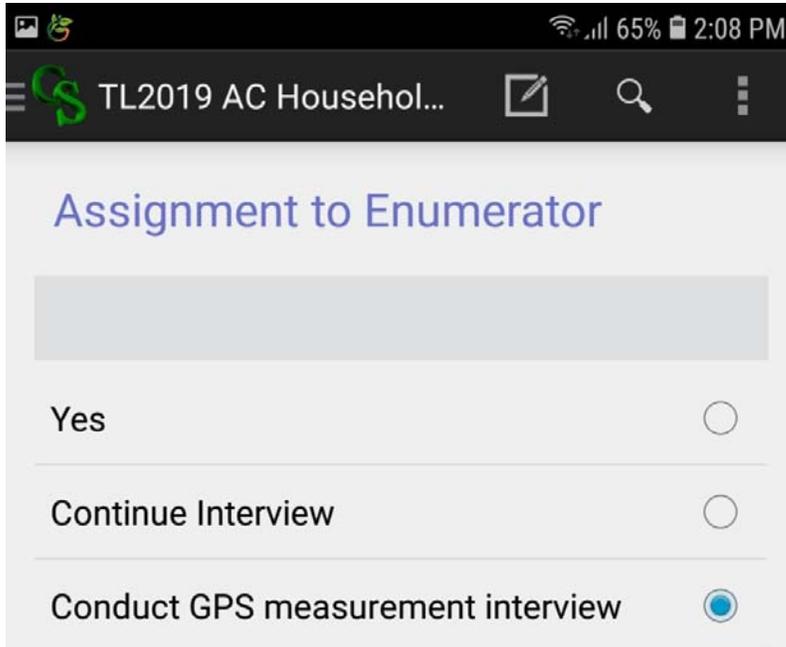


**Step3:** Select conduct GPS measurement interview option to check the received ceases. The cases prefixes with [NOGPS] Completed Agriculture Household/Institution are appeared on the device. It does mean a case is interviewed by enumerator completely but not yet completed GPS measurement. So it indicates to assign for GPS measurement.

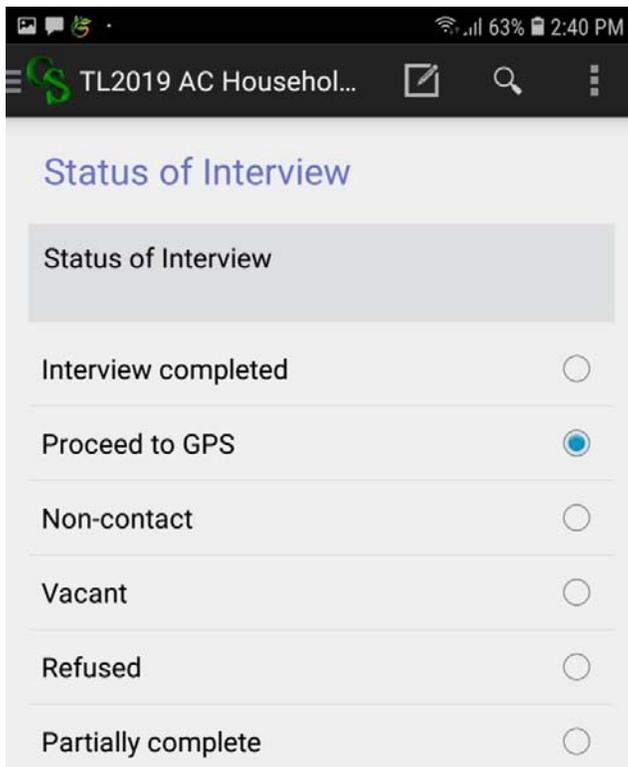


Note: [NOGPS] Completed Agriculture Household/Institution appears only every 5<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup> ....so on for agriculture household or every 5<sup>th</sup>, 10<sup>th</sup>, 15<sup>th</sup> ....so on for agriculture institution.

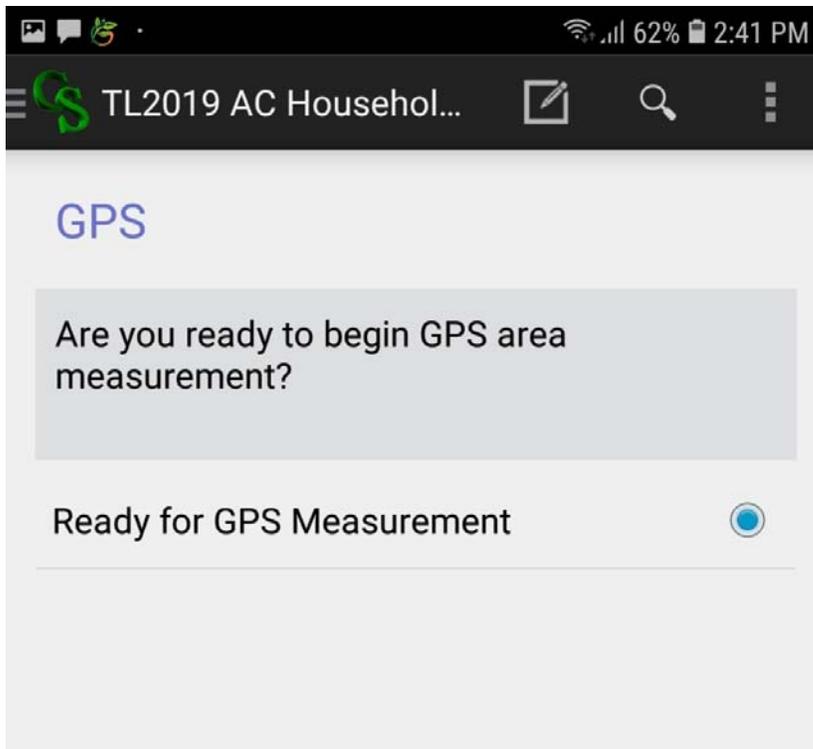
**Step4:** Tap on the [NOGPS] Completed Agriculture Household/Institution case, and then select Conduct GPS measurement interview.



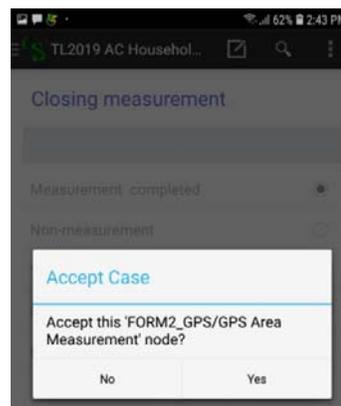
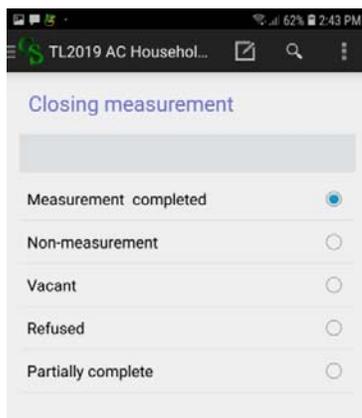
**Step5:** Select **Proceed to GPS** on the Status of Interview on your device.



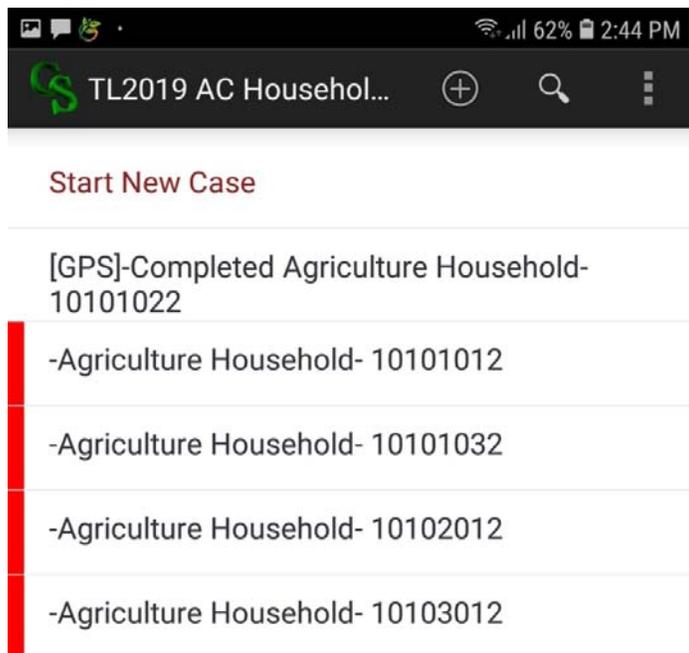
**Step6:** Select **Ready for GPS measurement** to begin GPS area measurement.



**Step7:** Proceed to fill all parcel and plot fields until you get close measurement section. Once you completed to fill all necessary fields then select **Measurement completed option**. Swipe on the device you get “Accept this case” and tap on Yes.



**Step8:** Again select **Conduct GPS measurement interview** option on your device to check the status of completion cases. This time you get **[GPS]-Completed Agriculture Household** with EA code number. It does mean such case is completed both in agriculture household interviewed and GPS measurement of such selected household's parcel and plot areas.



**Step9:** Sync with Supervisor by selecting Sync with Supervisor to send GPS measurement cases to Supervisor or Sync with Headquarter depending on the situation of internet available in the field.

Congratulation!

Chapter 10  
**Protocol for Field Data Collection using CAPI and  
Area Measurement in GPS in Sample Households**

As the main data collection in census will be in CAPI, some field protocol is to be followed for smooth functioning and optimizing the data collection time as well as data transfer to server in the headquarter. These are stated below:

1. Each team comprising of 2 Enumerators, 1 GPS Taker and 1 Team Supervisor (TS) will move to the allotted EA guided by the EA map provided to them.
2. This apart, 1 IT personal is to be engaged to handle ad-hoc situations that may arise in the use of CAPI device in the field. They will be stationed in each municipality headquarter to oversee the problems in their respective areas. Their contact details (phone number and e-mail address) should be made available to all supervisors/enumerators/GPS takers in their respective jurisdiction to contact him/her in need.
3. Team Supervisor (TS) is to check and ensure that each enumerator and GPS taker's census kit contains the listed items such as CAPI (tablets) /GPS device along with other accessories required for CAPI/GPS device such as charger/power bank for CAPI device, cables (2) and AA batteries for the GPS device.
4. He should also check that all devices are in working conditions before handing over the devices to the enumerators and GPS takers. This means that tablets will need a SIM card with internet facility and the installation of software like **Dropbox** allowing automatic exchange of info among tablets and central server.
5. Note that the **Dropbox** facility will be available only in the CAPI device of Supervisor, who is authorized to send data from field to server using Dropbox and once for a set of data.
6. The GPS taker need to have received on his tablet the gpx file of the Enumeration Area limits so that he can get transferred the holding information collected preceding by one of the two enumerators of his team.
7. Attention has to be given by the DGS to the availability of AA batteries for the GPS devices. Considering that a set of 2 batteries is needed by device and least 2 days, 24 batteries are needed per surveyor for 12 days of data collection. As there will be 1,200 GPS surveyors, which result in a total of 28,800 AA batteries needed in the census.
8. TS should also ensure that he has collected some (around 10%) paper questionnaires of all types for contingent situation in the field.
9. After reaching to the Suco, the TS along with his/her team members is to contact first with the Suco Chief/Head and get the boundary of the EA identified according to the EA map provided to him. **At all moment, the GPS taker can verify with the EA GPX file that the team is well inside the limits of the EA.**
10. Supervisor will then **fix the Census Sticker** in the front door of each house in the EA. The census sticker carries a unique 6-digit number, which indicates the House Number. He/she should also fix the Census Sticker on the **vacant and locked houses**.
11. TS is to ascertain and ensure how many households are living in that house and record it against "Number of Households" provided below the house number. He/she should also follow the same procedure for each institution under the coverage of census in the EA during his/her move for the entire EA.
12. Beside 6-digit house number, a 3-digit household number will be given to the households starting from '001' without any omission or duplication.

13. **For institutions**, he/she should start the serial number **from '99Z'** without any omission and duplication, where 'Z' can take values 1, 2, 3, ..., 9.
14. While doing so, he/she must ensure that no household or institution is missing.
15. If there are more than one household/institution in a house, say 9, then both the enumerators should ensure that they have listed all the 9 households and collected data in Form-2 from all agricultural households as well and similarly for the institutions also.
16. The supervisor must ensure also that neither the area of adjacent EAs has been curved in from adjacent EA, nor any part of the EA is curved out of the EA area.
17. The starting point may be the starting point of PHC 2015 if indicated in the EA-map, else he/she should start from the north-west corner of the EA.
18. If the census order of house listing is not available, the listing may be started from the **north-west** corner of the EA and proceeding **south-wards** in serpentine order.
19. The enumerator will proceed then to list the houses and households in this areal unit.
20. They should start data collection in the listing form from the household or institution with serial number '001' or '99Z' as the case may be.
21. Both the enumerators should start the listing work simultaneously. That is, if the Enumerator-1 has started listing work in household with serial number '001', then Enumerator-2 should start listing work in next household, that is, with serial number '002'.
22. In case the household listed appears to be the agriculture household, then he/she should also complete the data collection for Form-2. Otherwise he/she should leave the household and proceed for listing of next household in the same house or next house, depending upon the situation, but according to serial number given in the Census Sticker - not listed so far.
23. It is important to note that after saving the data by pressing the 'FINAL' button or so, the enumerator will not be allowed, for statistical reason as sample agricultural households have been selected simultaneously, to edit any data for the listed household in Form-1 based on the detailed enquiry using Form-2.
24. The CAPI device will automatically prompt whether it is a 'agricultural household/farm institution' or not as well as also indicate whether it is a sample 'agricultural household' for GPS area measurement or not.
25. By the time the enumerators completes the work for the households and leaves for next household, the GPS taker should follow them alternately for measuring the GPS co-ordinates at the way point of front door of the house and pass the information to the respective enumerators to enter it against the respective houses. The coordinates will also be entered on the tablet and will be of the following format: S 08°32.820' and E125°33.209'.
26. While travelling to the next house/ household for listing, enumerator must put a big cross mark diagonally across the Census sticker, preferable by pen/bold pen to indicate that the work for the house is completely over.
27. While travelling to the next house/ household for listing, he/she should also verify on the way, even if the cross mark appear on the Census Sticker on the front door of the house, whether the other enumerator has visited the house/institution or not, to ensure double checking that the work has been completed for the house and households in it.

28. While collecting the data, if the enumerators find a house without such numbers, whether vacant or solely used for non-residential purposes, he/she should immediately contact the supervisor and points out to him/her.
29. A separate running serial number, followed by the last sticker used, will be given to the house using a new census sticker.
30. After listing all the households associated with a house, the next house shall be listed.
31. For family living under a tree or bridge etc. (i.e. without any house), a census sticker should be put on a easily visible place against the household as desired by them.
32. Finally the supervisor should check before leaving the EA whether all house and households have been listed and data collection is over for the EA by looking into the cross mark on the sticker as well as asking simple query to the resident(s) of house/household.
33. It is recommended that he/she should complete the data collection in Form-2 subsequently in order to minimize the entire data collection time in the EA. This process also helps the GPS taker to start his/her work of area measurement of parcels /plots for 20 sampled households on an average allotted to him/her in the EA.
34. Once the enumerator has collected the data in Form 2, he/she should transfer the data to the CAPI device of GPS taker and supervisor. The data transfer is suggested to be done using BLUETOOTH, which allow automatic exchange of data among tablets. They may use BLUETOOTH to exchange the data among tablets as guided by the CAPI developer depending on the availability of facility.
35. The GPS taker should measure the homestead parcel first and then proceeding to the next nearer and like that. At parcel level, the surveyor will first follow the limits as indicated by the farmer. Only then he will start again his turn around to get the measurement. He will enter the measurement on his tablet (in hectare with 3 decimal figures) and save the track on his GPS device using the above mentioned 12-digits followed by the parcel number (2 in this case).
36. His work will then consist in identifying the different plots (homogeneous land use/crop) composing the parcel. He will then measure each of the plot, saving the track with the above mentioned 14-digits parcel number followed by the 2-digit plot number (most often between 1 and 5, but provision kept up to 01-99). On the tablet, he will save the plot areas and their land use code/crop code.
37. After completing the plots' measurement of one parcel, he will repeat the parcel and plot measurements for the other parcels declared by the farmer.
38. In case of far-away parcels (more than half an hour distance), he is authorized to drop the measurement if he has already measured 3 parcels. The same will hold if a river obliges to find a bridge imposing more than half hour distance.
39. In case phone connection is not available in the EA, the supervisor will have to reach a place every day having wifi or phone connection to allow download and upload of information to/from the central server. This will also allow real time monitoring of the progress of work and to detect the missing data or obvious errors (imposing to a repetition of the measurements).
40. Plausibility checks have to be foreseen on the tablet CAPI to avoid, for example, that plots (or their sum over reported land use classes) are larger than parcel areas, etc.
41. The Team should keep in mind that the work of an EA is to be completed in two weeks, that is, in 12 working days. The supervisor should preferably send the data to the main server on the same day to avoid any data loss for various incidental reasons.
42. Once the data is sent to the server by the supervisor, he/she cannot send the same data to the server again.

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