

**NACAL**

**Enumerators' manual**

## **PART 1: GENERAL INSTRUCTIONS**

### **1 INTRODUCTION**

You have been employed to work for the National Census of Agriculture and Livestock (NACAL). The census is a 10 month exercise and you will be given Enumeration Areas (Eas) in which you will work. You are expected to adhere to all the instructions given you during training and that are found in this manual.

This is your General Field Manual which you must consult as often as possible when you are doing your fieldwork. You must always take it with you, read it and learn its contents hand in hand with other manuals, which will make your work easy.

#### **GENERAL INFORMATION.**

Malawi last conducted a National Sample Survey of Agriculture (NSSA) in 1992/93, some 12 years ago. Other NSSAs were conducted in 1968/69 and 1980/81.

The basic objectives of the 2006/07 National Agricultural Census are:

- i. To provide data for clarifying the social and economic factors affecting the country's agricultural structure by interrelating various characteristics of the holding;
- ii. To provide aggregate totals for fundamental agricultural data from both smallholder and commercial sectors for use as the benchmark for inter-censal estimates;
- iii. To provide a frame for other agricultural sample surveys;
- iv. To provide basic data for the formulation and implementation of a comprehensive integrated system of food and agriculture;

- v. To provide basic data regarding current use and changes in the exploitation of agriculture; and

To enable government to formulate plans to improve productivity especially of smallholder sector.

## 2 CONFIDENTIALITY

The survey will be carried out under the 1967 Statistics Act which will give you authority to collect the data from selected households, but at the same time, will not allow you to disclose to any one other than your supervisors whatever you will learn from those selected households. As a result of this you will have to take an oath of office and secrecy. To ensure that the data you will collect is kept strictly confidential, the following rules will have to be observed at all times:

- (a) Never reveal the details of your work or of specific interviews to others,
- (b) Nobody should look at your completed questionnaires except your supervisors.
- (c) Never let anyone else do the work for work. If you cannot complete your work for some reason or the other, inform your District Supervisor.

Clearly explain to the respondents that the information you have been sent to collect will be kept strictly confidential and will be used only for statistical purposes as inputs in planning agricultural services in the country.

### 3.0 ARRIVAL

When you finish training you will be taken to one of your work EAs [or near each one of them]. You should find your accommodation prepared by the village headman there. You will need to go to the village headman to introduce yourself and inquire about your rented house. You are supposed to pay rent for your house at the *beginning of each month* apart from the first

month when you will pay at as soon as you arrive. You may change accommodation from the one chosen for you but it should be in the same village/area for good reasons.

Develop a good rapport with the village headman and all traditional leaders. Winning their confidence earlier in the work will greatly help you during your time in the field. You will have to explain to them the purpose of your visit in their area, the importance and use of the information you will collect from them. These people will be very useful in finding the boundaries of your EA and you should try hard to gain their confidence and co-operation. You will have to be courteous, friendly and humble when talking to them.

You are expected to be self-confident, poised, tactful, and resourceful and have good appearance. It is important that you make a good first impression. Stress the confidentiality of the responses you get from the respondents. **Do not form expectations**

You should not take a lot of time to settle down. You are given only 2 days after your arrival to settle down and you may be expected to be visited by your supervisor even on the third day. If you are not working then it will be a form of misconduct.

After you start work find time to introduce yourself to the AEDO working in the area, and to the EPA office. This is very important for work relations.

#### **4.0 Important Points**

7.1 Your work assumes that you are always in the field, even though you may be at your house. The EA is your office. Please note the following points:

- You are not allowed to talk or engage in politics in the EA
- Always dress neatly
- Never drink beer or be drunk during working hours or while at work. This is an act of gross misconduct.

- Keep all your materials for work in a safe and clean place at your house or in a folder when on the move.
- Pay all your bills before you leave the EA.

## 5.0 Communication

Make sure your supervisors always know your whereabouts. Put a note at your door to indicate in which EA you are working every day. You should have the telephone number of your supervisor/senior supervisors with you. Also provide these numbers to your village headman in case of any emergency. Provide a telephone number that you may be contacted on to your supervisor [if possible]. Remember that supervisors may visit you anytime and any day [from the district, Ministry of Agriculture and from NSO]. They need to know where you are.

### Census Material

You will be provided with the following materials for your work in your areas:

<b>EQUIPMENT</b>	<b>QUANTITY</b>
GPS	1
Bicycle	1
Map	3
Field Note Book	1
Chalk (pieces)	20
Ball point pen	2
Manuals	1
Gumboot	1
Raincoat	1
YSP Jute twine	
Satchel	1
Salter scale	1
Clip board	1

This equipment should be signed for by you before you receive them. That will insure that you will not be blamed for equipment that you did not receive. Make sure that you keep all your equipment in safe place and used carefully.

## **6.0 Relationship with Supervisor**

You will work directly under one supervisor who will be based at the District Agricultural Office in you district. *You will make your work simpler by being in good relation with your supervisor.* Make sure you know the telephone contacts of your supervisor.

- 6.1 Each supervisor has had some years' experience in survey work. Therefore, s/he may be able to solve some of the problems you will encounter during your work. S/He will be instructed to visit you as often as possible so as to check your work and help you solve your problems.
- 6.2 During such visits, s/he will help you with EA identification and listing of households. S/He is your link with supervision staff from Head Office. Feel free to tell him your problems even if they could be social problems in your area.
- 6.3 The supervisor will also collect from you completed questionnaires for onward transmission to Head Office. Make sure that s/he signs in your book what s/he has collected.
- 6.4 Your supervisor is supposed to visit you regularly. During these visits he/she is supposed to randomly sample some households to re-interview or cross-check the information you have recorded with the information in the particular plots, gardens, etc. He is supposed to sign all the activities he has done while with you. Please remind him/her to do this before he goes away. You will be provided with the control sheets where the supervisor has to sign against each activity done.

In the event that you have misunderstanding with your supervisor that you fail to resolve, you will need to inform one of the senior supervisors at NSO who will advise you on what to do. Never bring your disagreements to the eyes of the public or to traditional leaders in your areas to solve.

## **7.0 The Enumerator And Interviewing**

Although some people are more skilful at interviewing than others, one can be a good interviewer (enumerator) through experience. There is no rule of thumb that you must follow to perform rewarding interview with the household heads or farmers. Interviewing is something you will learn here through practical exercises organized during this training session.

Your training will consist of a combination of classroom training and a great deal of practical exercises. Before each training session you should study this manual carefully along with the questionnaires, understand the survey concepts, definitions and procedures. Write down any questions that you may have.

You must be sure to study all the questions until you know what they mean and are very familiar with them so that you can ask the questions instead of blindly reading them.

Interview yourself by answering each question thoroughly, then for practice, interview someone else. Finally re-read your instructions between interviews which will help you pick-up points you missed before or correct errors you have begun to make, and if in doubt, contact your supervisor for clarification.

In order to avoid mistakes, there are some accepted guidelines that you will have to follow. You must conserve your efforts and establish an effective working relationship with the farmers in order to accomplish what you will set out to achieve. You should note that you will have to get all the information within a short time considering the number of questionnaires and field work you will have to cope up with.

## **7.1 The Interview**

An interview goes on smoothly once there is a feeling of ease and friendliness established between you and the respondent. Your opening remarks should bring about that friendly feeling to make your respondent feel at ease. The more thoroughly you know the purpose of the survey, the questionnaires and their related forms and manuals, the more confident you will be when meeting the respondents. There is nothing more provoking than disturbing a busy farmer than an enumerator who will not know why he is there to ask the questions. So you must get ready for the respondents to give answers to their questions because it is only when you can answer their questions frankly and with confidence that you will establish and maintain the atmosphere necessary for a good interview. Make the interview as interesting to your respondent as it will be to you.

Every interview should be something new and challenging. No two interviews are the same because conditions and respondents will be different. You should therefore establish different methods of approach in putting the respondent at ease and gaining his full co-operation.

## **7.2 How to Ask the Questions**

1. Ask the question with view of expecting an answer. Do not be hesitant or apologetic.
2. If a respondent shows signs of reluctance to answer your questions, tell him/her the importance and use of the survey data. Confidentiality of the survey should be explained to him and that it would not be for purpose of tax investigations or otherwise, but only for statistical purposes and that all information is strictly confidential.
3. The meaning of each question is specific and the same meaning should be conveyed to all respondents. It is important that the respondents understand them in the same way because it is known that a slight change in the meaning of the question will cause a change in the answer and therefore distorting the expected answer. If you are in doubt as to the meaning of a question, consult the manual, or if need be, your supervisor,

Do not ask leading questions. A leading question is one that suggests an answer in itself. For example, if you say, “you don’t have any more parcels of farming land, do you?” you will have more people answering “NO” to this question than if you asked a rather neutral question, such as, “Do you have any other parcels of farming land?” The problem here is that in the first question you are almost suggesting the answer to the respondent rather than letting him give his/her answer.

### 7.3 Probing

The art of asking a question is usually a simple matter of starting with what has been written, and in most cases the questions asked in this way get clear answer. The real test of interviewing skill comes when a question is not clear or the respondent misses a point. Trying to get a definite answer by asking more questions is what is called ‘*probing*’. You would be saying more in such instances in order to obtain a definite answer. On the other hand, there are good and bad probes. A good probe is one that encourages the respondent to give a direct answer to the question. A bad probe only links that particular answer, in other words, puts an answer in the respondent’s mouth.

### 7.4 Recording of Responses

You should record information only when you are convinced that the reported information is accurate and true to the best knowledge of the respondent. Do **NOT** leave blank any space provided that demands a response.

For printing and marking the enumerator must use a black pen, which will be provided with the rest of his/her materials. For efficient scanning, the questionnaire must be marked correctly. There are two ways of recording responses in the questionnaire:

- **Printing digit/digits in a box or boxes**  
Each box is allocated to one digit only. The digit must be printed clearly in an appropriate size inside the box. The entry **must not** touch the borders. In other words, the number must be clearly readable.

- **Marking the Boxes**

Each box is allocated space for one cross. The cross should be marked inside the box and should not touch the edges of the box. All entries outside the box will not be read.

Digits and crosses should be filled-in properly; digits and crosses that are incomplete will not be read or will require operator verification. Digits or crosses filled in by mistake should be crossed out drawing a horizontal line over the wrong entry, to clearly show that the response is incorrect. The correct answer should be written outside the appropriate box. After completing an interview, the enumerator will go over the questionnaire again to ensure that all digits and crosses are properly filled-in. Numeric answers will be printed in normal script in the space made available.

## **7.5 Terminating the Interview**

When you are finished with the interview, you should thank the respondent for his help in providing you with the information. If you took longer than you anticipated, you should again thank him/her for taking longer than expected. However, do not stop the interview abruptly.

## **7.6 Checking the Questionnaires and Related Forms**

All questionnaires and related forms should be carefully checked immediately after completion. Fill in the gaps with answers and remarks you jotted down during the interview. Make it a habit to re-check completed questionnaires before you hand them to your supervisor. Past experience has shown that most problems involving incomplete questionnaires and forms could have been eliminated by the enumerator if only he had checked them before handing them on to his supervisor.

Your workload should be planned to include time spent in checking questionnaires because this is a required part of your work. Make a detailed explanation in the 'specify' space of any unusual answer. If there is no sufficient space, write 'PTO' at the bottom of the page and write on the back of that page. Notes on the completed questionnaires should explain what appear to be inaccuracies. Such notes will be extremely useful in analysing

the results. Failure to write such notes will make the reviewing and interpreting of the questionnaires in the office harder and will require decisions which would be a source of error in the final results.

### **7.7 How to Approach a Farmer Who Does Not Want to Cooperate**

Actual refusals are rare more especially after introducing yourself to the Village Headman and party officials and explaining the purposes of your visit to the household head. But if you come across any refusal, contact your supervisor if you cannot convince the respondent. Otherwise, start off by sympathetically listening to him as he would or may be telling you reasons why he does not want to be interviewed. Do not argue with them because if you do, you will lose the interview completely. By the time he makes strong statements and you just listen to him, he may change his mind.

In some cases every effort to obtain the interview may fail. Then you should depart in a friendly and courteous way but a report to your supervisor. Remember that if you leave in peace the respondent may review his behaviour and allow you to interview him at alter date.

Finally remember that it is up to you to make the most out of each interview as you possibly could because the final results of the survey can be no better that the information the farmer will give you and you record on the questionnaire. A good enumerator should be proud of his/her ability to meet people with ease and cheerfulness in order to secure their co-operation.

This training has been organised so that you can familiarise yourselves with the questionnaires and the household selection procedures used in this survey. In the briefing sessions that we have prepared for you, we want to give you a chance to inspect the tools you will use in the field and we expect that they will enable you move smoothly and efficiently through the interviews.

### **7.8 You are expected to be:**

- (a) completely honest in your work,
- (b) reliable and conscientious,
- (c) utterly objective in your manner of asking questions,

- (d) faithful and neutral in recording answers
- (e) willing to write answers fully and legibly
- (f) understanding and be interested in people,
- (g) able to inspire people's confidence and put them at ease,
- (h) neatly dressed and sober during working hours.

**To summarise, always remember to:**

- (a) follow instructions carefully,
- (b) study the questionnaire until you are familiar with all of the questions.
- (c) use the brief introductory approach given to you.
- (d) be completely neutral, informal, conscientious,
- (e) translate the questions as they are written,
- (f) ask all the questions,
- (g) ask the questions in the order they appear,
- (h) record answers accurately
- (i) always carry out your interviews in private, if possible
- (j) at the end of the interviews check each one of them, and do not forget to thank the respondent,
- (k) make arrangements to meet the respondent on a later visit if the respondent is not at home. In other words, make an appointment or leave an appointment form and make a note in your Notebook.

## **8.0 Administration of the questionnaires**

You will have a lot of questionnaires to administer to the selected households. Make sure all the questionnaires are well handled and no water should fall on them. The questionnaires will be scanned at the office and if they are dirty, disfigured, etc, the scanners will not be able to scan them. This means they may have to be returned to you to re-interview a second time.

Each questionnaire has its time/period in which it is supposed to be administered. Make sure you work according to these time schedules. The questionnaire on Plot details will remain with you until April, make sure you make regular visits to the plots to see any new developments so that you may record them in the questionnaire. It may not be good for you for your

supervisor to discover a new planted crop inside one of the already planted plot and yet you have not indicated it in your questionnaire.

Questionnaires that are finished should be given to your supervisor during his visit for him to have a look at them and for transferring to the NSO headquarters in Zomba.

## 9.0 Cheating

If ever you will be found to have cheated in filling questionnaires [filling questionnaires yourself without asking the households], not visiting gardens but filling the questionnaires on Land, crop details and crop cutting, and other such forms of cheating, ***you will automatically be made redundant***. This is a very gross misconduct that jeopardises the fulfilling of all census objectives.

## 10.0 Leaving the EA at the end of your work

Your last payment will be given you only after you have paid all your dues in the area where you will reside. As such make sure you do the following before you leave the EA:

1. Pay your rent, and settle all bills
2. Bid farewell to all traditional leaders [TA, Village headman in the EA of residence]
3. Confirm with your supervisor that you are free to leave. You can not leave the EA without your supervisors authorising you.
4. Make sure all equipment has been collected. You will leave the NSO equipment at the District Agriculture Office after the supervisor signs it for your own good. Make sure you arrange in advance your travel arrangements.

## PART 2 : LISTING

### 1.0 Listing the EA

1.1 This manual has been prepared to facilitate your work during the listing exercise. It provides you the tools that you will use in your day-to-day work in the field. You will find it quite helpful if you understand these tools thoroughly during this training.

1.2 The success of any survey depends on each enumerator's ability to collect accurate information from the respondents. Your duties for the listing exercise includes the following:

- Locating the Enumeration Area (EA) and its boundary
- Listing all the households in the EA

### *2.0 Definitions and Concepts*

2.1 **Enumeration Area (EA):** This is an area drawn up for the 1998 Population and Housing Census so that each enumerator in an Enumeration Area has the same workload or spends approximately the same amount of time in interviewing all the households in the area. It may comprise part of the village, a whole village or several villages, estate(s), trading centre or part of an urban area. The EAs have already been demarcated and the boundaries are marked on the maps which will be given to you.

2.2 **Household:** This is made up of one person or a group of persons who normally live and eat together. They regularly take all their food from the same pot, and/or share the same grain store (nkhokwe) or pool their incomes together for purposes of purchasing food. They maybe related or unrelated, living in the same house or several dwelling units include all children at boarding schools.

**2.3 Household Head:** This is the person who is responsible for making decisions for the household and his/her authority is acknowledged by the other members of the household.

**2.4 Dwelling Unit:** It maybe defined as any structure, permanent or temporary, where people sleep. It maybe a hut, a house, a store with a sleeping room/rooms at the back, a shelter of reeds/straw such as those used by fishermen or any other structure where people sleep

#### **4.0 The enumerator and Listing**

**4.1** When you arrive in the EA, meet the village headman/headmen and any local leaders who may be able to assist you. Introduce yourself by clearly stating your name and the objective of your being found there. If necessary, show them your identity card. Talk to them about the survey objectives. Gain their confidence, dispel any fears and doubts that they may have and try to win their full cooperation.

**4.2** The first thing you will do after the introduction is to identify your EA. You will have been provided with the EA map. Identify your EA by going around the boundaries with the village headman or any responsible member of the community. Make sure that you take note of the isolated houses in the EA as you go around. **Note:** you will not start listing until you are familiar with the boundary of your EA and the village headman/ any community leader should not tell you which houses to include or exclude. The boundary of a village is not necessarily the boundary of an EA.

**4.3** Once you have identified your EA, your next step is to list the households. You will identify households and list them by writing a number with chalk on the front door or wall. Tie-on labels will be used where you will not be able to write on a door or wall such as fishermen dwelling units.

**4.4** Before you start listing, the identification part of your household listing form (PART A) should be completed. Leave the row for Number of Households until you complete the form you are using. Write your name

in the spaces provided. **Note: Write the EA code on top right hand corner of each page of the listing form.** As you start listing, write 1 in the space provided for book number. This means that it is the first book you are using for this EA. When it is finished, write 2 in the space provided for the second listing form you are using. If you have used 1 listing form in the EA, then you write *Book 1 out of 1 book* or if you have used 2 listing forms, write *Book 1 out of 2 books* for the first listing form and *Book 2 out of 2 books* for the second listing form and so on.

4.5 Having completed the PART A – the identification, your next step is to start listing households (PART B). When you approach a household, introduce yourself clearly stating your name and the organisation you are coming from. They might have already been briefed by their village headman whom you approached when you were coming in the EA. Politely request to talk to the head of the household if s/he is around or any responsible person in the household. One important point when approaching a respondent for the first time is to create a good atmosphere for dialogue. You have to choose words that will make the respondent feel free and at ease to respond to you. Greet them with a smile. Make sure that you are properly dressed so that the respondent should not doubt you and the organisation which has hired you.

## 5.0 Completing the Listing Form

### (i) Household Number

Write the household number on the front door of the house. The number should have 3 digits starting with AGR. The first household you list will be numbered AGR 001 if it has no dwelling units. But if it has dwelling units, you will number the house in which the head lives as AGR 001/1, the second dwelling unit as AGR 001/2, the third as AGR 001/3 and so on. Examples of these dwelling units are those houses in which children or any other members of the household live. Note the definition of household. After writing on the door AGR 001/1 please write in the column *Household Number* 001.

### (ii) Number of dwelling units

Write the total number of dwelling units for the household.

### (iii) Name of Household Head

Write the full name of the household head in this column. For example, do not write J. Phiri instead of Joshua Phiri.

### (iv) Village

Write the name of the village clearly in this column.

### (v) Main Feature

In this column, write any physical features which will help you or supervisor to identify the household should it be selected for enumeration. This is very important for this exercise as sometime will elapse before you go back to interview the selected household

### (vi) Did your HH receive coupons for subsidized fertilizer

Indicate if the household received any coupon to be used to buy the subsidized fertilizer or seed provided by the government.

(vii) **Do or any member of your household operates a garden or keep livestock?**

In this column indicate if the household does any agriculture activity like farming or keeping livestock. Put *Yes* or *No* according to the answer given.

(viii) **How big is the garden**

In this column write the total area for all the gardens that the household cultivates [in acres]. Try to probe and have a good estimate of all the gardens the household actually owns. If the household only do livestock farming please leave this column blank. ***Record the area of the garden in acres, with one decimal point***

(ix) **Official Use**

Do not write anything in this column. It will be used by your supervisors during selection of the households.

**After you finish listing the EA**

After you finish listing the EA you should go to list your next EA. Please keep the listing forms clean in the folder provided for you. When you arrive home transfer the information on the listing booklet to another booklet. One booklet will be retained by you while the other will be given to your supervisor.

The supervisor will come to do the selection of households for you. Therefore, make sure you give details of your whereabouts to your neighbour or put a short note on your door so that the supervisor may find it easy to find you. You need to be moving with the all the listing forms already completed with you when working in a different EA so that when the supervisor comes you should not waste time to go home to get the other listing forms.

## **PART 3: MODULE 1: COMPOSITION AND CHARACTERISTICS OF THE HOUSEHOLD**

### **1.0 Introduction**

This questionnaire will collect information on demographic characteristics of the household members, general information on the household, list of land owned or operated by household members, purchases, land tenure, machinery, equipment, food security. It will be administered immediately after the household listing.

### **2.0 Section A. Interview information**

#### **3.0 Purpose of section A**

This section provides information to identify the household being interviewed. The field supervisor will have, for identification purposes, a list of dwelling units and corresponding households to be interviewed. It is important for the success of the survey that the actual household being interviewed is the one selected and appears in this sample list. Part of the identification information will be completed prior to the interview, part of it will be completed as the interview begins, and the rest will be completed at the end of the interview.

#### **4.0 Cluster code (Enumeration Area)**

Every household is located in a cluster (EA), which in turn is located in a district. However, the Cluster code in conjunction with the household number will be sufficient to uniquely and completely identify every household in the sample.

The selected EAs have been numbered sequentially from 0001 to the end. The number will be given on the household sample list and should be written in the questionnaire prior to the interview.

## **5.0 Household number**

All households on the sample list will be given a number from 01 to 15. That means there will be 15 selected households. The household number as contained on the sample list will be filled in here. Note that to find out where the sample household is located in the EA you will need to use its structure number from the NACAL Listing Form, and also given in the sample list.

## **6.0 Questionnaire number**

Extra questionnaires are needed if the household has more than 10 members. The first questionnaire is number 1; extra questionnaires are numbered 2 through 9 as required. The Reference Number (see below), the household number, the questionnaire number and the rest of the information in Section A are recorded in the extra questionnaires. The demographic characteristics section is filled as required for the additional members.

## **7.0 Reference number**

This questionnaire is assigned a unique eight-digit identification number. This number will be a combination of the:

- 1. cluster code**
- 2. household number**
- 3. Module number.**
- 4. Questionnaire number**

Remember that this number will be written in the boxes located in the upper right-hand corner of **ALL PAGES** of the questionnaire, and done immediately for all pages of the questionnaire, not when you start a new page, but all pages at the same time, otherwise it is easy to forget. The module number has been recorded for you.

## **A.1 Interviewer's number/name**

Each enumerator will be assigned a unique identification (ID) number, which he or she will use throughout the duration of the survey. This number must be entered in A1 for all the questionnaires the enumerator fills in. The numbers will range from 001 up to 600. The enumerator will write his or her name in CAPITAL LETTERS in the box provided. This can be done prior to the interview.

## **A.2 Name of Head of household**

The name of the head of the household will be given on the household sample list and will assist the enumerator to properly identify the selected household. The enumerator will confirm the name of the head. The head of the household is the person who makes most decisions at the household and who is acknowledged as head by all members of the household.

## **A.3 District code/name**

This is the name of the district in which the selected household is located. It will be given on the household sample list and can be written prior to interview, along with the district code, also on the sample list

## **A.4 TA/STA/Area**

Write down the name of the TA or STA and the area in which the selected household is located. Area can be village or township and indeed the popular name well known in the locality. This will also be given on the household sample list and can be written prior to interview.

## **A.5 Date**

This is the date the interview is conducted. Months are converted to numbers; for example, June is '06', July is '07', August is '08', September is '09', etc. The year is recorded by using only the last two digits; for example, 2007 would be recorded as '07'.

## **A.6 Respondent Member Number**

Each member of the household is assigned a number by the enumerator according to the household roster. This is done at the time of listing household members' names at the top of the *demographic section* . If the head of household is the respondent to the interview, then the number entered in A6 will be '01'. If the respondent is someone other than the head of the household, A6 cannot be filled until after the listing of all household members is done in Section B. Then the number of the relevant person can be transferred to A6.

**Remember that the respondent should be the head of household, spouse or a member that is grown up and has clear knowledge of the household issues.**

### Demographic characteristics

#### **Purpose**

The purpose of this section is to establish who are household members, and their sex, and their relationship to household head. A household member is any member who has spent at least three months in the household. Children who are at a boarding school should be regarded as members of the household.

#### **Definition of household**

A household may be either a person living alone or a group of people, either related or unrelated, who live together as a single unit in the sense that they have common housekeeping arrangements (that is, share or are supported by a common budget). A standard definition of a household is a group of people who live together, pool their money, and eat at least one meal together each day. It is possible that individuals who are not members of the household may be residing with the household at the time of the survey. In most cases, but not all, someone who does not live with the household during the survey period is not a current member of the household. The definition of who is and who is not a household member is given below.

It is important to recognize that members of a household need not necessarily be related by blood or by marriage. On the other hand, not all those who are related and are living in the same compound or dwelling are necessarily members of the same household. Two brothers who live in the same dwelling with their own wives and children may or may not form a common housekeeping arrangement. If they do not, they should be considered separate households.

One should make a distinction between family and household. The first reflects social relationships, blood descent, and marriage. The second is used here to identify an economic unit. While families and households are often the same, this is not necessarily the case.

You must be cautious and use the criteria provided on household membership to determine which individuals make up a particular household.

In the case of polygamous men and extended family systems, household members are distributed over two or more dwellings. If these dwelling units are in the same compound or nearby (but necessarily within the same EA) and they have a common housekeeping arrangement with a common household budget, the residents of these separate dwelling units should be treated as one household.

The head of household is the person commonly regarded by the household members as their head. The head would usually be the main income earner and decision maker for the household, but you should accept the decision of the household members as to who is their head. There must be one and only one head in the household. If more than one individual in a potential household claims headship or if individuals within a potential household give conflicting statements as to who is the head of household, it is very likely that you are dealing with two or more households, rather than one. In such cases, it is extremely important that you apply the criteria provided to delimit membership in the survey household.

Note that it is possible that the household head may not be residing in the dwelling at the time of the interview. He or she may be living and working, temporarily or permanently, in another part of Malawi or in another country.

**Note that:**

- The individual whom household members commonly regard as the head of household should always be included as a household member, even if he or she has been absent from the household for more than 9 of the past 12 months.
- Young infants less than 3 months old are household members.
- New spouses who have recently come into the household and are now residing with the household are household members.

It is important to highlight that non-relatives who are resident in the household for more than three months and are included in a common household keeping arrangement under the head of household are to be considered household members. However, servants, other hired workers, and lodgers (individuals who pay to reside in the dwelling of the household) should not be considered to be household members if they have their own household elsewhere which they head or upon which they are dependent.

You should be very careful when dealing with this rather complex task of determining who should be included and who should not be included as a member of a survey household. You must carefully check the rules laid out here. The rules should enable you to handle the vast majority of household situations that you encounter, but not all. If you are in doubt, whether an individual should be included in a survey household, discuss the problem with your supervisor.

## **Household roster**

### **Names of household members**

The enumerator will first record the names of all usual household members. After the listing of all members is complete the enumerator proceeds to ask questions C1 through C4 for the first person listed, always the household head.

Note that after you have obtained the list of the usual household members, you want to be certain that you have included everybody that must be listed. Be sure to probe for small babies, newlyweds or servants who are normally ignored when listing household members.

After asking all the questions for the household head (member listed as number 1), the enumerator will go back and ask questions C1 through C4 for all the listed persons one by one.. Thus the enumerator will ask questions C1-C4 for all household members before proceeding to the next section. Enumerators will be mindful to fill the correct column for each member, perhaps using a ruler or other straight edge to guide the completion of columns.

The first step in Section C is to list the names of all members of the household. **The person listed in the first column will always be the head of the household.** If the respondent to the questionnaire is not the head of the household, the head of the household will still be listed in the first column (not the respondent). If the head of the household is absent at the time of interview, he/she will still be listed in the first column.

### **Head of household**

The head of the household is the key decision-maker within the household and his/her position of authority is acknowledged by the other members of the household. As such, the main economic provider may not necessarily be the head of the household. Never assume the head of the household. You need to really find out which person best fits the definition of the head. As the key decision-maker, the head of household is the person most aware of what is happening in the household, and will often be the most appropriate respondent in the NACAL. However, the head of household may not be able to answer all questions accurately if he is not the main economic provider of the household, or if other household members have their own areas of authority. In such cases, other household members can assist the head of household during the interview.

Polygamous families present a difficult situation. All the wives in their separate households may say that he is still the head. But it should be noted that one person cannot be head of two households. You should include this man to the household list if he frequently lives in this household, otherwise he should be left from the list of household members if the main decision maker is the wife (i.e. if the man usually lives with another wife).

List the children after their mother. In case of polygamous households or households with several mothers, list all children by age following their respective mothers.

To ensure complete coverage, the enumerator should explicitly ask about three types of persons, which are commonly overlooked by survey respondents: Small babies, servants and household members that are temporarily absent.

**IMPORTANT NOTE:**

*When you have finished this interview, please transfer the information from this household roster to the household roster found as the last page in all the other questionnaires. This is for easier identification of household members in those questionnaires*

**C.1 Relationship to household head**

The head of the household should always be listed in the first column, regardless of whether or not the head is present at the time of interview. Other members should be identified in one of seven categories. The spouse is the married partner or partner by mutual consent of the head. Sons/daughters and brothers/sisters of the head of household include also in-laws. Step children or step parents will be identified as other relatives, unless the respondent insists that they are children or parents.

Members of the household, such as servants, who are not related to the head, will be coded "not related". Particular care must be taken in recording relationship information when the respondent is someone other than the head of the household; clarification must be made to the respondent that we are interested in the relationship of the person to the head of the household, not to the respondent.

**C2 Sex of household member**

The sex of each household member will be indicated. The enumerator should be mindful not to always assume the sex from the name or clothes of the member. Be sure to ask about each person if it is not absolutely obvious.

**C3 Village of birth**

For each of the household members, record whether the person was born in the village of present residence.

**C4 Age at last birthday**

The age of each person will be recorded in completed years. This is the age of the person at their last birthday. For example: If someone will be 25 years old in two weeks after the date of interview, the recorded age would be 24. You may also ask the date of birth of the member and then you can compute his age.

Ages of nine years or less will be recorded with a leading zero for example '03'; infants less than one year old will be recorded '00'.

Persons of age 95 or over the age of 95 will be recorded as '95'.

If the respondent is uncertain of someone's exact age, the enumerator will probe to obtain an estimate. Enumerators may also use the calendar of events to estimate somebody's age, or compare his age with some one he says were born at the same time. If probing does not help, the enumerator will need to make the best estimate of the person's age. Under no circumstances will the enumerator record a response of "don't know".

## **LIST OF LANDS OWNED OR OPERATED BY THE HOUSEHOLD MEMBERS**

A parcel of land is a piece of land that has been allocated to any member of the household, whether used or not. It includes grazing land, woodlot, orchard, and the land where the household has built its dwelling unit.

Every parcel of land will be assigned a serial from one up to ten depending on the number of parcels of land.

### **C5 Operator of the parcel of land**

The operator is the one who makes all important decisions pertaining the use of the parcel

For each parcel of land, register who in the household operates it by recording the member number from the household list and make sure that you register the member number for each parcel of land. The enumerator should be mindful not to always assume that the operator is the household head.

### **C6 How was this parcel obtained**

Indicate the way each parcel was obtained. Make a cross in the relevant box in the questionnaire.

### **C7 Owner of the parcel of land**

Record who is the actual owner of each parcel of land. The owner may in many cases be different from the operator. The owner may also in many cases not be a member of the household. Therefore, find out who the legal owner of the parcel is, and record the answer in the relevant box.

**C8 Is the parcel of land customary, leasehold, freehold or public?**

Land in Malawi is categorised into three. It can be customary where the land is under the control of traditional leaders, while leasehold where the land has been surveyed, has sketch map, has a title deed. Land rent is charged per hectare and is paid annually under leasehold and the lease can be renewed or indeed returned back to the government. And finally it could be freehold, land is under the traditional system where the land belongs to a clan and has control over it e.g. Land under Lilongwe Land Development project.

Record the answer in the boxes corresponding to each parcel of land.

**C9 Location of the parcel of land**

For each parcel of land, record where it is located, whether within the village, within the same TA as the village, outside the TA but in the same district or in a different district

**Subsidies and credit**

**C10 Voucher/Coupon for subsidized fertilizer/seed**

Record whether the household received any voucher/coupon entitling it to buy subsidized fertilizer/seed for this agricultural season, whether from the headman, received as a gift from friends/neighbour or bought. If the household has not received or bought or received any coupon/voucher, skip to question C14. Otherwise proceed to ask question C11

**C11 Did you use a voucher/coupon to obtain fertilizer and seed?**

Record how the household used the voucher/coupon in the appropriate boxes. For those who used the voucher/coupon, skip to question C14. For those who did not use the voucher/coupon, proceed to ask question C12.

**C12 Whether a voucher was sold or given away**

Record whether a voucher/coupon was sold or given away. If it was sold, proceed to ask question C13, otherwise skip to question C 14

**C13 For how much did you sell the voucher/coupon?**

Record the amount in Kwacha.

**C 14 Did you receive any credit for agricultural activities during this agricultural season (2006/07)**

If the household received any credit, proceed to ask question C15, otherwise skip to question C17

**C15 What was the amount?**

Record the amount received in Kwacha

**C16 From which credit organisations did you get the credit?**

Note that this is a multiple response questions, such that all sources for credit should be recorded. Probe to make sure that all sources are included and mark all responses in the appropriate box(es).

**Purchases of agricultural inputs**

**C17 Did your household buy/obtain any inorganic fertilizer**

Inorganic fertilizer refers to fertilizers such CAN, UREA etc. This does not refer to manure. **Note that only inorganic fertilizer that will be used in this (2006/2007) season should be included.**

If the household bought/obtained any inorganic fertilizer, proceed to ask question C17, otherwise skip to question C20

**C18 Total quantity bought/obtained**

Write the total quantity of inorganic fertilizer the household bought or obtained in the box provided with four digits.. For example 267 kilograms should be recorded as 0267 (starting with the leading zero),

**C19 Total cost of inorganic fertilizer**

Write total cost of inorganic fertilizer the household bought or obtained in the box provided with five digits. MK2092.54 will be written as 02093. If it was obtained for free, record 00000 in the box provided for cost.

**C20 Did your household buy/obtain any organic fertilizer**

Organic fertilizers refer to any kind of manure **Note that only organic fertilizer that will be used in this (2006/2007) season should be included.**

If the household bought/obtained any organic fertilizer, proceed to ask question 21 otherwise skip to question C22

**C21 Total cost of organic fertilizer**

Write total cost of inorganic fertilizer the household bought or obtained in the box provided with five digits. MK2092.54 will be written as 02093. If it was obtained for free, record 00000 in the box provided for cost.

**C22 Did the household buy/obtain any of the following in puts**

Record whether the various inputs were bought/obtained in the first box provided in the questionnaire. **Note that only inputs that will be used in this (2006/2007) season should be included.**

**A list of various types of chemicals are provided in Annex 3**

**C23 What was the total cost**

Record the total cost of those inputs bought or obtained to the nearest kwacha in five digits in the boxes provided. Record 00000 if it was not bought but given to the household y a relative, friend ,or other individuals/organization.

**C24 From where bought/obtained**

Record from where those inputs were bought/obtained, using the codes provided in the questionnaire

**C25 Did the household buy seeds since the last harvest?**

If they did, record yes, and record yes in the boxes provided for all seeds bought, and proceed to question C 26 otherwise skip to question C29 **Note that only seeds that will be used in this (2006/2007) season should be included.**

**C 26 What was the total quantity bought?**

Write the total quantity of all types of seeds bought in the box provided with four digits.. For example 267 kilograms should be recorded as 0267 (starting with the leading zero),

**C27 What was the total cost**

Record the total cost of all types of seeds bought to the nearest kwacha in five digits in the boxes provided. Record 00000 if it was not bought but given to the household y a relative, friend ,or other individuals/organization.

**C28 From where bought/obtained**

Record from where those seeds were bought/obtained, using the codes provided in the questionnaire

**MACHINERY AND EQUIPMENT****C29 Ownership or right to use of durable items**

Ask the respondent if the household or any member in the household owns or can use any of the listed items which are in working condition. The responses are YES or NO, and the household should be asked about each item on the list.

**C30 How many of each items the household owns or can use?**

Ask about the total number of each item the household owns or can use.

**C31 Type of ownership**

Ask whether each item is owned by the household alone, whether it shared with others or rented.

**C32 Items bought since the last harvest**

Ask the respondent whether the household bought any of the listed items since the last harvest,

**C33 Where the items were bought**

For each of the items bought, ask from where, and use the codes provided in the questionnaire.

**C34 How many items bought?**

Record the number bought

**C35 Total cost of items bought**

Record the total cost for each item bought in Kwacha.

**C36 Ownership of structures**

Ask the respondent if the household has any of the listed structures. The responses are YES or NO, and the household should be asked about each

structure on the list. If the answer is YES, proceed to ask about the total number of the structures owned .

An Attic is a structure built on a garden and is normally raised above the height of the crops. Its main use is to assist in scaring animals that come to destroy crops. Or it can be a structure used to dry some crops.

A water pump is a manual or fuel operated machine for pumping water for household use, irrigation, fish rearing of recreation etc

A barn is a structure keeping or storing dried cereal crops or a structure used for curing SDDF/NDDF/Flue tobacco.

### **C37 How many structures owned**

For each structure owned, record how many owned

# Land Tenure

## **C38 Change in total area of parcels of land**

This question refers to all parcels of lands that the household has [agriculture and & non-agriculture land,, eg, woodlots, where the dwelling unit is, etc]. You should record whether the total area has increased, decreased or remained the same, **compared to 10 years ago**. If the area has increased, continue to ask C39, if has decreased, skip to C40 and if it has remained the same, skip to question C40

## **C39 Why area has increased**

This question allows for multiple response. Therefore, record all reasons mentioned as to why the area has increased.

Inheritance comes from mother, father, or relative. Gift from relative means one of the relatives gives you land for some reason. After having recorded all reasons mentioned, skip to question C41

## **C40 Why area has decreased**

This question allows for multiple response. Therefore, record all reasons mentioned as to why the area has decreased.

## **C41 Fear of encroachment**

Encroachment implies some people or families or organization which starts to use part of your land without your authority. For land owned, ask whether the operator fears that the land will be encroached upon and record the answer in the appropriate box

## **C42 Fear that land will be taken away**

Ask whether the operator fears that his/her own land will be taken away. Record the answer in the relevant box

## **C43 Renting out of land this agricultural season**

Ask whether the household has rented out any land this agricultural season. If yes, proceed to ask C44, otherwise skip to C47

**C44****How many acres of land rented out this season?**

If more than one parcel of land has been rented out, add the acreage of each piece of land together and record the total acreage in the boxes provided.

**C45 How much received for renting out land?**

Record the total amount received for renting out land this agricultural season and record the amount in the boxes provided

**C46 To whom rented out**

Note that this question allows for multiple response, such that in case of renting out to more than one person, all relevant boxes should be marked.

**C47 Main reason for renting out**

Record the main reason for renting out. Since we want the **main reason, only one box should be marked**. If the respondent has problems identifying the main reason, probe until you have singled it out.

**C48 Whether sold any parcel of land in the past 10 years**

If the household has sold more than one parcel of land in this period, you should ask about the last parcel sold. Record the area in the boxes provided and proceed to ask question C 49. If no parcels have been sold in the reference period, skip to question C52

**C49 Area of parcel sold.**

Record the area in acres of last parcel sold

**C50 To whom the land was sold**

Record to whom the parcel was sold in the appropriate box

**C51 Why the parcel of land was sold**

Record the **main reason** why the (last) parcel of land was sold

**C52 Dispute over land in the past 10 years**

Record whether the household has had any dispute over land in the reference period. If the answer is YES, proceed to ask question C 53, otherwise skip to question C55.

**C53 With whom was the dispute**

This question allows for multiple response, such that all relevant boxes will be marked. Probe to make sure that all involved are recorded. If the household has been involved in more than one dispute, you should record information on the last dispute.

**C 54 Who resolved the dispute**

Record who resolved the dispute. If more than one party was involved, record the main actor. The information should pertain to the last dispute if involved in more than one

**C55 Where to go to resolve a dispute a this time**

Record whom the household would consult **first** in case of a dispute

**C56 Whether the household collects various items as mentioned in the questionnaire**

If any member collects such items record yes and proceed to ask questions C57–C64. If the answer is no, skip to question C65. *Hunt game* means if the go about to hunt animals. *Caterpillars* means Mphalabungu in Chichewa.

**C57–C64 Where the various items were collected**

For all the items the household collect, record where it is collected. Note that this is a multiple response, such that all places an item is collected should be recorded.

## FOOD SECURITY

### **C65 Whether staple food grown in the 2005/2006 season**

Ask the respondent if the household grew any staple food crops last agriculture season 2005/2006. if no you then that is the end of this questionnaire.

### **C66 Staple food left from own harvest in 2005/2006 season.**

Ask the respondent if the household still has food in stock from the 2005/2006 agricultural season harvest. In the case of cassava , it might not necessarily have to be harvested, but if it is still kept growing in the garden and harvested as needed, the household will have staple food left. If the household reports to have no staple food left, go to C68. Otherwise proceed to ask question C67.

### **C68 In which month will your staple food (2005/2006) run out**

Ask the respondent to estimate when (month and year) their staple food from their own harvest in the 2005/2006 season is expected to run out. Record the response in the boxes provided. The first two boxes are for month and the last two are for year, e.g, month 08 is August and year 06 means, 2006..

### **C69 In which month did your staple food (2005/2006) run out**

For those households who reported that their staple food from the 2005/2006 season had run out establish the month and year the food run and record the responses as in **C68**

*Note that the reference period for the remaining questions in this questionnaire is the last 7 days before the interview took place*

### **C70 Number of main meals taken.**

A meal is defined as consisting of a staple food ( maize, cassava, rice, potatoes, bread or any other staple). The three meals are generally, breakfast, lunch and supper. Any other meals are not main meals.

**C71 Staple food taken in the main meals**

First meal may be tea with bread or potatoes, and the second may be nsima from cassava etc. please indicate the main solid food that the household takes.

**C72 Eaten some selected food items**

Read through the list of items in the question, and for each item ask if the household consumed any of the items over the past 7 days. It does not matter whether the food was purchased, from own production or received as gift. If eaten more than 3 times, put almost daily. .

**C72 Main sources of food**

In this case only main sources should be asked, and take note that the question is a multiple response. Put from own produce if the food comes from his/her production and not bought. Free food is food gotten free from friends, relatives or organizations.

**C73 Main income sources used to provide food**

Remittances is from income from pension, money from sons/daughters/relatives, etc. If the household got money through sale of fish that you buy, or sale fish caught from the river or lake indicate business, while if you sale fish from your own pond/dam indicate Sale of own fish. If you sold tobacco, cotton, etc, indicate sale of cash crop, but if you buy and sell these cash crops, indicate business.

**C74 Family could not afford to eat what they normally eat**

This may be all the household members or only a few failing to take the usual meal due to not having enough food. Mark yes even if it is only for just a few days in the past 7 days. If No go to C79, otherwise proceed to ask question C75.

**C75 How often the household could not afford to eat**

Please indicate the number of times during these 7 days that the household could not eat the normal food.

**C76 Coping mechanism**

This can have more than one answers [multiple response]. Cheaper food includes Gaga [Madeya], or just drank tea without starch food, etc

**C77 Did any members fail to eat a main meal?**

If any member of the household failed to eat a main meal, proceed to ask question C78, otherwise, skip to question C79

**C78 Members who failed to eat.**

Find out which of the household members who failed to eat. Note that this is a multiple response question, such that you should record all household members that failed to eat. Record the answer in the boxes provided.

**C79 Result of the interview**

Record whether the interview was completed with the selected household. If not, record the reason why in the boxes provided.

**C80 Comments**

Here you should note any comments you have on how the interview was conducted. You should also include whether some questions were difficult to answer, or whether the answer categories were not enough or not relevant

## Questionnaire 2: Land Parcel Survey.

### Introduction

The Land Survey questionnaire captures information for the number of parcels at each selected farming household, for example if a household has three parcels of land, three Land survey questionnaires will be used. By definition, a Parcel of Land is a piece of land that is allocated to any member of the household and is being used or not. If one parcel of land has a path in the middle of three (3) metres or more, then we have two parcels and two schedules of questionnaires must be used. This includes the land where the household has built its dwellings. This questionnaire must be filled for each of the parcel of land listed in household composition questionnaire. For each parcel of land, a sketch of the parcel will be drawn, clearly showing its various plots inside the parcel (area measurement). Each parcel will be measured, using the GPS, and the total area, as well as the coordinates and perimeter of the parcel should be noted down in the appropriate boxes of the questionnaire (L3 to L6)

You will fill this questionnaire while in the parcel of land. If the parcel is very far that you can not go to it to see the details you need to inform the supervisor about this so that he can make a decision either for you to go or *to just ask the farmer to answer the questions in the parcel questionnaire and plot details questionnaire*. You will need to go to other parcels of lands of the same household or other households while you wait for the supervisor to direct you on all parcels that are far away from the place.

### Cluster code (Enumeration Area)

Every household is located in a cluster (EA), which in turn is located in a district. However, the Cluster code in conjunction with the household number will be sufficient to uniquely and completely identify every household in the sample.

The selected EAs have been numbered sequentially from 0001 to 1641. The number will be given on the household sample list and should be written in the questionnaire prior to the interview.

### Household number

All households on the sample list will be given a number from 01 to 15. That means there will be 15 selected households. The household number as contained on the sample list will be filled in here. Note that to find out where the sample household is located in the EA you will need to use its structure number from the NACAL Listing Form, and also given in the sample list.

## **Module number**

Each questionnaire is given a module number which is pre-printed on all pages of the questionnaire. The Land Parcel Survey is module 2.

## **PARCEL NUMBER**

As already indicated, a parcel is a piece of land allocated to any member of the household for agricultural purposes, it may be used or not. The parcel number is a one-digit number and will be assigned to the parcel with regard to the distance from the dwelling.

This section is for identification of the parcel, and each enumerator is supposed to fill it in before conducting the interviews.

The parcel nearer to the dwelling unit will be numbered **01** and the one that is far from the Dwelling Unit will bear the last parcel number. Write the number in the appropriate box, the assumption is that on average, number of parcels may not exceed 9 for each household.

## **7.0 Reference number**

This questionnaire is assigned a unique eight-digit identification number. This number will be a combination of the:

5. cluster code
6. household number
7. module number.
8. parcel number

Remember that this number will be written in the boxes located in the upper right-hand corner of **ALL PAGES** of the questionnaire, and done immediately for all pages of the questionnaire, not when you start a new page, but all pages at the same time, otherwise it is easy to forget. The module number has been recorded for you.

## **A.1 Interviewer's number/name**

Each enumerator will be assigned a unique identification (ID) number, which he or she will use throughout the duration of the survey. This number must be entered in A1 for all the questionnaires the enumerator fills in. The numbers will range from 001 up to 600. The enumerator will write his or her name in CAPITAL LETTERS in the box provided. This can be done prior to the interview.

## **A.2 Name of Head of household**

The name of the head of the household will be given on the household sample list and will assist the enumerator to properly identify the selected household. The enumerator will confirm the name of the head. The head of the household is the person who makes most decisions at the household and who is acknowledged as head by all members of the household.

## **A.3 District code/name**

This is the name of the district in which the selected household is located. It will be given on the household sample list and can be written prior to interview, along with the district code, also on the sample list

## **A.4 TA/STA/Area**

Write down the name of the TA or STA and the area in which the selected household is located. Area can be village or township and indeed the popular name well known in the locality. This will also be given on the household sample list and can be written prior to interview.

## **A.5 Date**

This is the date the interview is conducted. Months are converted to numbers; for example,

June is '06', July is '07', August is '08', September is '09', etc. The year is recorded by using only the last two digits; for example, 2007 would be recorded as '07'.

## **A.6 Respondent Member Number**

Respondent is the person among the usual household members providing information to the enumerator, this may be the household head or any responsible member who is knowledgeable about the household. In the parcel module it should preferably be the one who operates the parcel Write down the member number from the household roster at the last page of the questionnaire. You will have copied the household roster from the Household Characteristics Questionnaire (Module 1).

## **L1 Operator number**

The operator is the one who makes all important decisions pertaining the use of the parcel. Record the household member number of the operator from the household roster at the last page of this questionnaire.

**L2. What is the distance, in kilometers (km), between the parcel of land and the main dwelling unit ?**

Ask the respondent to tell you the distance in km between the parcel of land and the DU. This might be an estimate from the respondent, or since the enumerators reside in the selected EA, they might be able to estimate the distance themselves. But ask the respondent first. Record the distance in whole km's. If less than 1 km, record 00

**L3. Parcel location: South location and L4 Parcel location: East location**

Go to the starting point for measurement of the parcel. Use the GPS to find the location of this starting point. Write down the southern coordinate and the eastern coordinate in L3 and L4. Use the GPS manual in the annex to learn how to use the GPS.

**L5. Parcel area in hectares (with three decimals) and L6 Parcel perimeter in meters.**

Go to the starting point for measurement of the parcel. Use the GPS to measure the area of the parcel and the perimeter of the plot. Write down the area of the parcel in hectares with three decimals. Write down the perimeter of the parcel in meters. Use the GPS manual in **Annex 2** to learn how to use the GPS.

**L7. Was the area of the parcel measured or estimated by operator ?**

For all parcel within the EA or close by (less than 2 hours walk for the operator) the area of the parcel should be measured by you. But if the parcel is more than 2 hours walk away from the dwelling, you should ask the operator to estimate the area. Then you should still fill inn L5 Parcel area in hectares (with three decimals) and answer Estimated by operator here in L7.

**L8. What is the topography of land ?**

Most of the questions in all the questionnaires are pre-coded, since all questionnaires will go through scanning process after data collection. This question can be answered by the enumerator through observations when he is inspecting the parcel of land belonging to the household. Put the appropriate code in the box from the categories given.

**L9. Has the operator built terraces, dug irrigation canals or any well or dam on this parcel of land?**

Find out if the household has planted fruit trees etc. at the parcel of land and record in the respective boxes. Against each activity if 'Yes' box is marked then 'No' box remains blank and so forth.

**L10. Are there any fruit trees or other trees on this parcel of land?**

First you should ask whether there are some fruit trees or other trees on this parcel. Remember to ask for the parcel with the dwelling as well. This is a skip question.

**L11. What is the type and number of fruit trees that you have in this parcel ?**

For each type of fruit planted in the parcel of land enter into the appropriate box the number of trees. Count properly to avoid omitting other trees.

**L12. Did the operator plant any of these trees himself/herself ?**

Ask the respondent if he/she planted any of these trees in the parcel of land and mark the appropriate box.

**L13. Do you own all the trees in the parcel of land ?**

Ask the respondent if he/she owns all the trees in the parcel of land and mark in the appropriate box. If the answer is no, proceed to question L15, otherwise skip to question L15

**L14 Who owns the other trees ?**

If in the parcel of land there are some trees that do not belong to the owner of the parcel, find out from the respondent the rightful owner of the trees and mark in the appropriate box.

**L15 Has the operator ever cultivated this parcel of land ?**

If the answer is yes, proceed to question L 16, otherwise you end the interview

**L16 For how many years the operator has been cultivating the parcel ?**

Record the number of years in the boxes provided. If less than one year, record 00

**L17 Whether land has been kept fallow during last the 3 years**

Mark the answer given in the appropriate box. Note that if operated less than 3 years, you should ask for the years of operation

**L18. Does the operator practise crop rotation on all or part of this parcel of land?**

Crop rotation is when the operator does not cultivate the same crop on the same plot every year.

If crop rotation is practiced on all or part of the plot, proceed to ask question L 19. Otherwise skip to question L20

**L19 What is the cropping pattern followed annually on this parcel of land?**

Crop rotation can either be done in a systematic or an irregular way. Find out what type of crop rotation that is practiced and mark the appropriate box.

**L20 Is this parcel field or dimba land or both?**

Dimba land is land that is either irrigated or kept moist along riverbeds.

Find out what kind of land this parcel consists of and mark the appropriate box.

**L21 Does the operator practise irrigation on this parcel of land?**

Irrigation includes both artificial and natural water supply systems. Find out if the operator practices any irrigation. If he does, proceed to ask question L22, otherwise skip to question L23

**L22 What is the main type of irrigation practised on this parcel?**

Find out what type of irrigation the operator practises. If more than one type of irrigation is used, record the main one.

**L23 Will all or a part of the parcel be used for cultivation this season ?**

Cultivation is when the land is used for crop production, but not for grass production only, even if fertilizer is added.

If yes, all of it, skip to question L 26. If yes part of it, or will not be used, proceed to question L24, otherwise skip to question L 25

**L24 Will this parcel of land be used in any of the following ways this season?**

Note that this question allows for multiple response, such that all types of use should be recorded. If the parcel is a dwelling unit only, you should end the interview

**L25 What is the main reason why all or a part of this parcel of land will not be used for cultivation this season?**

Record the main reason for not cultivating the parcel in the appropriate box

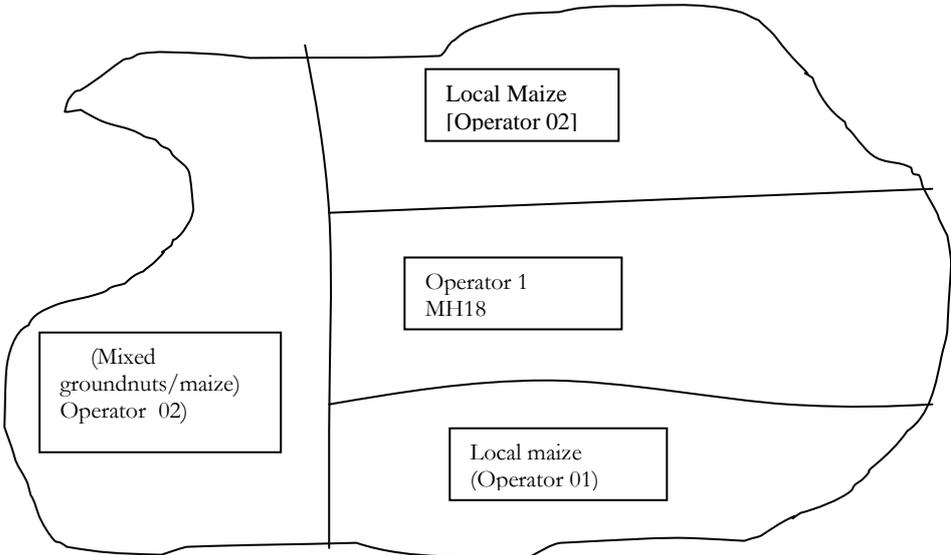
**L26. How many separate plots are there in the parcel of land?**

**Parcel:** is a piece of land that is continuous. If a path, road or river of more than 3 metres wide passes through the piece of land, then there are 2 gardens.

**Plot:** is part of a parcel that contains a different crop or crop mixture or is kept by a different operator in the same household. It must be a continuous piece of land and should not be split by a path of more than one metre in width.

Thus, a garden can have one plot or several plots. Plot boundaries are defined according to the crops grown and the operator. For the purposes of this survey, any part of a garden that is under fallow will be considered as a plot and will be measured.

For example here is a sketch of **one garden/parcel of land** that is divided into **four plots**



Ask the respondent to tell you the number of plots in this parcel of land or garden. Through observations, the enumerator should be able to count the number of plots in the parcel of land/garden looking at the crop stand in the field. Record number of plots in the box provided. For example, the parcel above has 4 plots, so enumerator will record **04**. Remember to put leading zero.

## MODULE 3: Plot details

The objective of this module is to capture information on garden plots within a parcel of land. **Plot:** is part of a garden that contains a different crop or crop mixture or is kept by a different operator in the same household. It must be a continuous piece of land and should not be split by a path of more than one metre in width.

Thus, a garden can have one plot or several plots. Plot boundaries are defined according to the crops grown and the operator. For the purposes of this survey, any part of a garden that is under fallow will be considered as a plot and will be measured. The plots to be considered in this survey are those of the 2006/07 cropping season. However, make sure that the plots make up the entire garden.

You will also fill this questionnaire while in the plot. If the parcel/plot is very far that you can not go to it to see the details you need to inform the supervisor about this so that he can make a decision either for you to go or *to just ask the farmer to answer the questions in the parcel questionnaire and plot details questionnaire*. You will need to go to other parcels of lands of the same household or other while you wait for the supervisor to direct you on all parcels that are far away from the place.

Never leave parcels or plots questionnaire not filled. But again never decide on your own to just ask the farmer information on the plots or parcels. Your supervisor will make the decision.

**One questionnaire must be filled for each plot of each garden/parcel. Each plot must be measured using GPS as was the case with parcel.** Identify all plot boundaries by the crop stand in the plot through observations or ask the operator. If a plot has one crop stand and has a path in the middle of one metre between, then there are two plots. Plots are numbered serially in clockwise direction. Identification panel for this questionnaire is the same for all questionnaires except that the reference number has 9 digits instead of 8 digits.

### **Purpose of section A**

This section provides information to identify the household and plot being interviewed.

**Cluster code**

Every household is located in a cluster (EA), which in turn is located in a district. However, the Cluster code in conjunction with the household number will be sufficient to uniquely and completely identify every household in the sample.

The selected EAs have been numbered sequentially from 0001 to 1641. The number will be given on the household sample list and should be written in the questionnaire prior to the interview.

**Household number**

All households on the sample list will be given a number from 01 to 15. That means there will be 15 selected households. The household number as contained on the sample list will be filled in here. Note that to find out where the sample household is located in the EA you will need to use its structure number from the NACAL Listing Form, and also given in the sample list.

**Module number**

Each questionnaire is given a module number. This is pre printed on the front page of each questionnaire and on all the pages of each questionnaire. The Plot details questionnaire is module 3 and hence the number 3 is pre printed both on the front page and the all other pages.

**Parcel number**

The parcel number is to be transferred from the Land parcel survey, to identify which parcel for each household the plot belongs to.

**Plot number**

This refers to the number of the plot given within the parcel

**Reference number**

This questionnaire is assigned a unique nine-digit identification number. This number will be a combination of the:

- 9. cluster code
- 10.household number
- 11.module number.
- 12.parcel number
- 13.plot number

Remember that this number will be written in the boxes located in the upper right-hand corner of **ALL PAGES** of the questionnaire, and done immediately for all pages

of the questionnaire, not when you start a new page, but all pages at the same time, otherwise it is easy to forget. The module number has been recorded for you.

#### **A.1 Interviewer's number/name**

Each enumerator will be assigned a unique identification (ID) number, which he or she will use throughout the duration of the survey. This number must be entered in A1 for all the questionnaires the enumerator fills in. The numbers will range from 001 up to 600. The enumerator will write his or her name in CAPITAL LETTERS in the box provided. This can be done prior to the interview.

#### **A.2 Name of Head of household**

The name of the head of the household will be given on the household sample list and will assist the enumerator to properly identify the selected household. The enumerator will confirm the name of the head. The head of the household is the person who makes most decisions at the household and who is acknowledged as head by all members of the household.

#### **A.3 District code/name**

This is the name of the district in which the selected household is located. It will be given on the household sample list and can be written prior to interview, along with the district code, also on the sample list

#### **A.4 TA/STA/Area**

Write down the name of the TA or STA and the area in which the selected household is located. Area can be village or township and indeed the popular name well known in the locality. This will also be given on the household sample list and can be written prior to interview.

#### **A.5 Date**

This is the date the interview is conducted. Months are converted to numbers; for example,

June is '06', July is '07', August is '08', September is '09', etc. The year is recorded by using only the last two digits; for example, 2007 would be recorded as '07'.

#### **A.6 Respondent Member Number**

Respondent is the person among the usual household members providing information to the enumerator, this may be the household head or any responsible member who is knowledgeable about the household. In the plot module it should preferably be the one who operates the plot. Write down the member number from

the household roster at the last page of the questionnaire. You will have copied the household roster from the Household Characteristics Questionnaire (Module 1).

### **A7 Relay planting number**

In case of relay cropping, the operator will harvest more than once from the same plot. In that case, one crop plot questionnaire has to be filled in for each crop harvested. In A7 you will therefore indicate which harvest the information pertains to. If it is the first harvest, you record 1, if it is the second you indicate 2 and so on in the box provided.

### **P1 Operator number**

The operator is the one who makes all important decisions pertaining the use of the plot. Record the household member number of the operator from the household roster at the last page of this questionnaire.

### **P2. What is the distance, in kilometers (km), between the plot of land and the main dwelling unit ?**

Ask the respondent to tell you the distance in km between the plot of land and the DU. This might be an estimate from the respondent, or since the enumerators reside in the selected EA, they might be able to estimate the distance themselves. But ask the respondent first. Record the distance in whole km's. If less than 1 km, record 00

### **P3. Plot location: South location and P4 Plot location: East location**

Go to the starting point for measurement of the parcel. Use the GPS to find the location of this starting point. Write down the southern coordinate and the eastern coordinate in L3 and L4. Use the GPS manual in the annex to learn how to use the GPS.

### **P5. Plot area in hectares (with three decimals) and P6 Plot perimeter in meters.**

Go to the starting point for measurement of the parcel. Use the GPS to measure the area of the parcel and the perimeter of the plot. Write down the area of the parcel in hectares with three decimals. Write down the perimeter of the parcel in meters. Use the GPS manual in **Annex 2** to learn how to use the GPS.

### **P7. What crops are grown in the plot and type of stand?**

In the appropriate box mark the crops that are grown in the plot as given on the list. If pure stand, the enumerator will mark in only one box but if mixture, more than one box will be marked. Type of stand will also be marked in the appropriate boxes, using the codes provided in the questionnaire.

Main crop is crop that is planted right throughout the plot. The planting stations for this crop will usually follow regular pattern and will occur in relatively important numbers throughout the plot.

A plot may have only one main crop in which case the crop is said to be a pure stand even though scattered planting may be present.

If two or more main crops are present in a plot then the crops are said to be in a mixed stand

Scattered Planting are crops that are randomly or irregularly planted or germinate voluntarily in a small scale in a plot. The planting stations will not follow any regular pattern and they will occur in only small numbers dispersed haphazardly through the plot.

Examples of Main Crops, Scattered Planting and relay cropping

(a) Maize (M) pure stand with pumpkin (P) as a scattered

MMPMMPMMPM

MMMMMMMMMM

MPMMPMMPMM

(b) Maize (M) and Groundnuts mixed stand

MGMGMGMGMG

MGMGMGMGMG

MGMGMGMGMG

(c) Cotton (c ) with a scatter of Maize (M)

CCCMCCMCCM

MCCMCCMCCM

CCMCCMCCMC

A crop in plot is said to be in relay cropping if the next crop is not planted until the other crop is harvested.

YSP

In all plots where **maize** (of any type), **cassava**, **sweet potatoes** and **Malawi/irish potatoes** are planted, Yield Sub-Plots (YSP's) will be laid. Mark in the appropriate boxes the YSP size for the crops where YSP's will be laid out, that is all kinds of maize, cassava, sweet potato and Malawi/irish potatoes. When YSP is laid in the plot by using YSP cord and marked by jute twine, the farmer must be told how to look after the YSP and that the YSP should be treated in exactly the same way as the rest of the plot. Any treatment for the crops in the plot must include the

crops in the YSP. The enumerator must check frequently all the YSPs laid at each selected household, probably every fortnight. Jute twine and pegs which are used to construct the YSP may be destroyed by termites and is supposed to be replaced. By checking YSP frequently, the enumerator will be able to know if number of plants in YSP has changed or not due to other factors. This necessitates the enumerator to check it up to the time of harvest.

The farmer has to be told that during harvesting, this YSP must be harvested by the enumerator and the produce left to the respondent in a sack to dry up to the final reading which should take place at least 1 week after harvest, but no more than 2 weeks after harvest. The sample should be returned to the farmer after final weight.

**P8. Give the codes of the crops in the plot in order of quantity.**

In case of mixed cropping, assess through observation of the crops in the plot or ask the farmer to tell you, the importance of each crop planted in the plot. Up to three crops should be recorded in order of importance in the boxes provided, using the crop codes also provided. The importance of each crop should be judged according to the quantity of the crops

**P9 Operator's estimate of production before harvest**

At the time when you are laying the YSP for the plot (or other plots) you will ask the operator how many kgs s/he expect to harvest from this plot. Give the number of kgs for each of the main crops in the plot. The weight estimated should be in the form that the crop is usually consumed or sold.

If cassava is one of the main crops, ask the operator how much cassava he expects to harvest this season for own consumption and sale.

**P10. Where did the operator obtain the major part of the seeds which he planted on the plot?**

This question will capture information on the source of seeds planted in the plot. Ask the operator to tell you the source and mark in the appropriate boxes for various main crops. Note that we want to know where the major part of seeds was obtained, in case more than one source was used.

**P11 Was the plot irrigated?**

Find out whether the plot was irrigated and record the answer.

**P12. How was the plot ploughed?**

Ploughing is deep tilling of land, there are several ways of ploughing the plot one of which is using a hoe, ask the respondent and mark the correct box.

**P13. How was the plot ridged?**

Ask the operator to find out how the plot was ridged and record the response in the appropriate box.

**P14. How was the plot planted?**

Ask the operator how the plot was planted and put a cross in the appropriate box as provided in the questionnaire.

**P15. How was the plot weeded?**

Weeding is one of the crop husbandry practices, ask the operator how the plot was weeded and mark accordingly in the box provided.

**P16. What type of fertilizer was applied to the plot?**

Fertilizer is used to enrich the soil for higher productivity.

Note that this is a multiple response question, such that if both organic and inorganic fertilizer have been used, both boxes should be marked. Then proceed to ask question P17. If no fertilizer was applied, skip to question P18

**P17. How was the fertilizer obtained?**

Note that this is a multiple response questions, such that all the sources for obtaining fertilizer should be recorded.

**P18. If pesticides were applied to the plot?**

Pesticides are chemicals used to control or kill pests for various crops in the garden/plot If pesticides were used, mark yes and proceed to ask question P20, otherwise skip to question P21.

**P19 What type of pesticide was used?**

Note that this is a multiple response question, such that all types of pesticides used by the operator should be recorded.

**P20. How were the pesticides obtained?**

Note that this is a multiple response questions, such that all the sources for obtaining pesticides should be recorded. Mark the appropriate box using the list of pesticides given.

**P21 Production after harvest**

After the plot has been harvested, ask the operator to estimate the amount harvested from the 3 main crops in the plot. Record the weight in kg for each crop. The weight estimated should be in the form that the crop is usually consumed or sold. If cassava is one of the main crops, ask the operator how much cassava he has harvested this season for own consumption and sale.

**P22. Use of labour on the plot.**

Find out how many household members have participated in each of the activities listed, that is, land preparation, planting, weeding, harvesting and marketing. Find out how many male and how many female household members participated and even how many boys and girls in the household participated.

**P23. Share of work among household members**

This question is meant to find out about the division of labour between men and women and children in the household. For each of the farming activities listed, see question P21, try to find out how large a share of the work adult males, adult females and boys and girls have carried out. If men carried out all land preparation work, you mark the box for all and for men. If women carried out half the work, on say, planting, you mark half for women in the box for planting, etc.

**P24. What is the number of plants in the YSP?**

After laying the YSP, count the number of planting stations and plants in the YSP and record in the box for each 1<sup>st</sup> main crop, 2<sup>nd</sup> main crop and 3<sup>rd</sup> main crop.

**P25. What is the raw weight and the dry weight of the sample (kg)?**

This question will be answered at harvest time of the YSP. The sample when harvested and shelled in case of maize will be weighed with moisture content. After at least 1 week, but no more than 2 weeks, the maize should be weighed again to obtain the dry weight. The sample is then returned to the farmer. The weight should be recorded in the appropriate box for the crops in the YSP. Also the enumerator should record all the readings in the field notebook for future references. The field note book should be divided according to the number of households he has.

**P26 Whether plot was selected for full harvest**

One pure stand local maize plot, one plot with pure stand improved maize and one plot for pure stand hybrid maize will be selected for full harvest in each EA.

Mark here whether this plot was selected for full harvest or not. If it was not selected, you go on to make the sketch of the plot and the YSP.

#### **P27. Quantity harvested from the plot**

The plot should be harvested in the normal way by the operator, but observed by the enumerator. The weight should be recorded in the way normally recorded by maize, that is, after shelling and drying for 1 to 2 weeks

### ***Density and yield measurement***

Crop yield will be obtained from YSP (Yield Sub Plot) that will be laid some randomly selected. Harvesting is normally carried out at the same time as farmer is harvesting the rest of the field. Enquire the dates they may start and complete harvesting each plot having a YSP. Note that YSPs should be laid to the following crops; Maize, Cassava, Sweet potato and Irish [Malawian] potato. For other crops apart from Sugar cane and fruits, get from farmers' estimates on their production levels. Estimates should be collected twice, from the vegetative stage of crops to after harvest.

#### ***Procedures for Laying a Yield Sub Plot (YSP):***

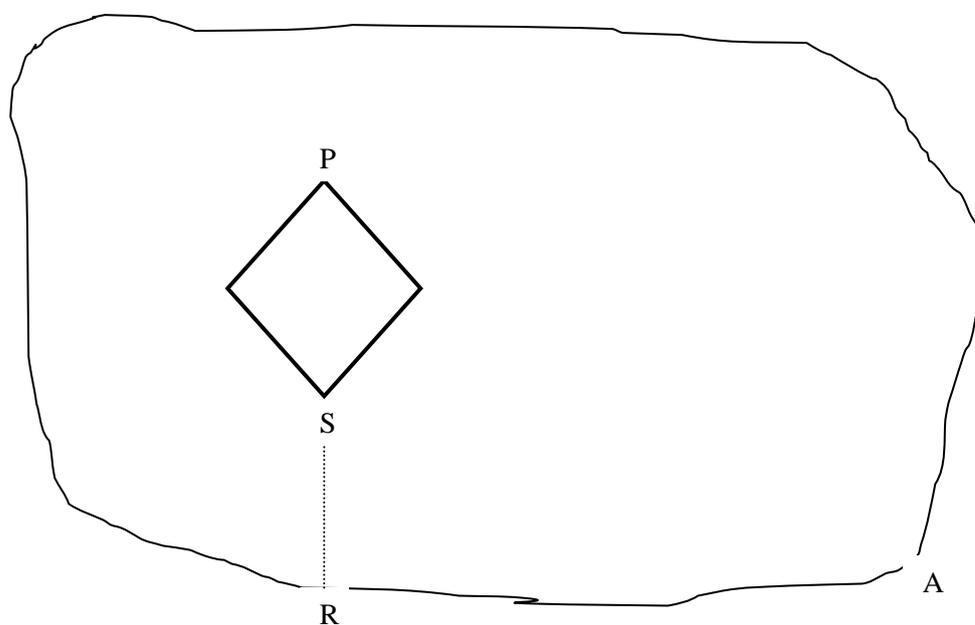
**YSPs have to be laid strictly randomly as non-random laying of YSPs lead to bias.** To avoid this bias, clear instructions on how to lay the YSPs or YSSPs are laid down and should be carried out strictly. The laying of YSPs involves the steps below.

**Step 1:** Approximate the total length of the plot by pacing around it from point where he/she started measuring the plot in clockwise direction, record the number of paces in your field note book under the plot sketch. Note that the supervisor will verify the paces, so be careful not to cheat.

**Step 2:** Use the table of random numbers to choose your entry point into the plot. For example, if the total number of paces around the plot is 320, use the 3 digit random number table, and select any number between, 001 to 320 in order to arrive at the entry point. Label the entry point on the sketch in the questionnaire as R and put a wooden peg to mark the point. To find the point where to lay the YSP, divide the number of

paces around the plot by 2, and if the result is X, go back to the random number table and choose a random number between 001 and X. At 90 degree angle from point R Walk into the plot number of paces equal to the random number obtained above, and this point will be point S. Mark point S with a peg.

If the random number to point S stretches outside the plot boundary, enumerator should turn to point R (Entry Point) while counting the paces until point S is established within the plot. If it happens that counting of paces reaches point R then he returns to the opposite direction until point S is established. **See the illustration below:**



**Step 3.** At point S start to construct the YSP. Using the YSP cord that has a diagonal of 10m meters, and total length of 14.14m having size of 7.07 m, attach the cord to the peg and stretch it backwards towards point R. At 10m (diagonal) **put another peg** and attach the other end of the YSP cord. **Then you stretch half of the cord to the left or right side and attach to pegs forming a square of approximately 50 square meters.** This type of YSP is for All Maize.

**Step 4:** For root crops such as Cassava, Sweet potato and Malawian potato, lay a 5mx5m YSP which is 25 square meter YSP using a measuring tape or

YSP cord. The procedures are the same as for cereals, pulses and G/nuts only that this YSP has a diagonal of 7.07m.

**Step 5.** Put jute twine around the 4 pegs of the YSP. This completes the YSP. Remember to visit and inspect the YSP once in every three weeks to replace fallen pegs and jute twine which may be damaged by termites. During this period enumerator is supposed to monitor agricultural operations done by the farmer and make sure that the YSP is treated the same as the whole plot. Anything happening to the plants in the YSP should be recorded in the field note book.

Once the YSP is laid, the enumerator will, **for each crop present in the YSP:**

- Record the crop code and its type of stand.
- Count the number of plants and planting stations in the YSP and record it in the space provided.
- Harvest each crop and record the weight harvested in the space provided.

### ***Crop harvesting***

Some important rules will be strictly observed for the crop harvesting.

- Harvesting will be made **in the presence of the farmer** and, if possible, with his assistance.
- Crops must be harvested in the way the farmer uses to harvest.
- Harvested produce will be remitted to farmer after weighing.

The enumerator will harvest **all plants** of crops that are inside the YSP and weigh the produce. Then, he will record the weight in the column "Raw weight". Enumerator should leave the sample to the farmer to dry it from one to two weeks.

### **Procedures for weighing:**

**Maize** Soon after harvesting shell the sample and take the raw weight and record in the appropriate box in the Plot questionnaire. Return the sample to the farmer to dry it for 1 to 2 weeks and take the final weight (dry weight).

### **CASSAVA :**

The enumerator will capture information concerning the yield of the crop that is ready to be harvested. For the plot that is being harvested or ready for harvest, he will lay a 5 x 5 meter Y-sub plot, in the plot.

He records the number of plants in the YSP. Then he uproots one plant from each corner of the YSP (4 plants uprooted). He will weigh the tubers/roots and record the weight in the plot questionnaire. Production for the YSP will be done at the office.

For the plots that will with cassava that is not be harvested he just measure the area of the plots and record in the Plot details questionnaire.

### ***Sweet Potatoes, Potatoes***

The enumerator will capture information concerning the yield of sweet potato and Malawi/irish potato. He will lay a 5 x 5 metre Y-sub plot, in the plot. He uproots plants from the YSP. He will weigh these tubers and record in the plot questionnaire.

In some cases he may find that the root crops are still un-mature so only garden measurement is performed.

## **YIELD ESTIMATION USING HARVEST ESTIMATION**

This methodology is used to estimate the amount of cassava that a farmer harvests during the course of the season. All farmers with cassava should be asked when they are harvesting the crop. Some farmers [like in the lake shore areas] harvest the cassava continuously. The plan is to estimate all the cassava they are harvesting [whether at once or periodically].

**Step 1 :** The enumerator should visit the sample households who are harvesting the crop, instruct them to use standard containers and count number of units/containers harvested per day for each garden/plot. The farmers are to record the number of containers harvested in the notebook provided where they also will be recording the marketing information.

**Step 2 :** Each standard unit must be weighed [when empty and also when full] by the enumerator and recorded in the field note book and the appropriate place in the marketing booklet. Also total number of units or bags harvested each day must be recorded on the form as well as in field note book.

## **How to select plots for full harvest and how to measure the total production on the selected plots**

For each EA three plots for full harvest will be selected, that is: one plot for each of local maize, composite maize and hybrid maize. The operator of these plots will harvest them himself/ herself, but you will need to supervise the measurement of the total production. When a full harvest is completed successfully, the operator will receive a remuneration of K1000 in compensation for the extra workload and for not harvesting green maize before harvest.

### **Selection of households and plots for full harvest**

Your supervisor will select one of the households in the EA for full harvest of local maize. If this household does not grow local maize, follow the list of households until the first household you find growing local maize this season. Select this household. Then you should go to the next household to select a plot of composite maize. If this household does not grow composite maize follow the list of households until you find a household growing composite maize. Continue further on to select a household growing hybrid maize following the same procedure. You should now have selected three households in the EA where a full harvest of one plot should be conducted.

To select a plot for full harvest, you should use the last digit in the household number. E.g. if the household number is 03 or 13, you should use the digit 3. Use this number to select the plot number 3 with e.g. local maize. If this number is larger than the number of plots in the selected household, just start over again until you have reached number 3, e.g. with 2 plots you do as follows: no 1 – plot 1, no 2 – plot 2, no 3 – plot 1 (starting over again).

### **Measurement of the full harvest at the selected plots for full harvest**

When you have selected the households and plots for full harvest, you should tell the household and the operator of that plot that you will need to do a full harvest of the three plots in each EA for verifying the measures from crop-cutting and asking the farmers. You will need to make an agreement with each of these three farmers in each EA. You should ask the operator to cultivate his field as usual. He/ she will have to agree *not* to harvest any green cobs, but wait to final harvest before harvesting any maize at all. The operator will then dry the maize-cobs for 1–2 weeks as usual and then shell the dry maize-cobs, and store the shelled maize as he/ she would have done in any case. But before storing the maize, the operator will have to measure the number of bags[or units].

If the operator is storing the maize in bags, he/she might just store the bags right away, but if he/she will store the maize in a granary bin or another type of storage, he/she should first measure the number of bags. At this stage you should be around to count the number of bags and weigh 3 bags [or units]. You should select the first bag for weighing in the same manner as selecting a plot (using the last digit in the household number as described above). [weigh the shelled maize]. Weigh that bag and the two next ones, calculate the average weight of a bag and multiply with number of bags to get the total number of kgs. When you have calculated the total production, you should pay the operator 1000 Kwacha in compensation. You should ask the operator to sign for receiving the remuneration at the rear side of the last page in the plot questionnaire. Write: I have received a remuneration of 1000 Kwacha and name of location. The operator will then sign with his/her name. If he/she is not able to write his/her name, you should write it and the operator should mark his/ her name just with an X.

## **MODULE 4. FOOD SECURITY AND HIV/AIDS**

### **Introduction**

This questionnaire has to be administered in May. Make sure that you administer it at the right time to all the 15 households in each of the EA.

The respondent of this questionnaire should be the head of the household or spouse or a grown up member of the household [above 20 years of age]

### **Section A. Interview information**

#### **Cluster code (Enumeration Area)**

Every household is located in a cluster (EA), which in turn is located in a district. However, the Cluster code in conjunction with the household number will be sufficient to uniquely and completely identify every household in the sample.

The selected EAs have been numbered sequentially from 0001 to 1641. The number will be given on the household sample list and should be written in the questionnaire prior to the interview.

#### **Household number**

All households on the sample list will be given a number from 01 to 15. That means there will be 15 selected households. The household number as contained on the sample list will be filled in here. Note that to find out where the sample household is located in the EA you will need to use its structure number from the NACAL Listing Form, and also given in the sample list.

#### **Module number**

Each questionnaire is given a module number which is pre-printed on all pages of the questionnaire. The Food Security & HIV/Aids module is module 4.

#### **Reference number**

Each questionnaire is assigned a unique seven or eight-digit identification number, called the reference number. This module has a seven digit reference number. The number will be a combination of the:

- 1. Cluster code – 4 digits**
- 2. Household number – 2 digits**
- 3. Module number – 1 digit, pre-printed**

Remember that this number will be written in the boxes located in the upper right-hand corner of **ALL PAGES** of the questionnaire, and done immediately for all pages of the questionnaire, not when you start a new page, but all pages at the same time, otherwise it is easy to forget. The module number has been pre-printed for you.

#### **A.1 Interviewer's number/name**

Each enumerator will be assigned a unique identification (ID) number, which he or she will use throughout the duration of the survey. This number must be entered in A1 for all the questionnaires the enumerator fills in. The numbers will range from 001 up to 600. The enumerator will write his or her name in CAPITAL LETTERS in the box provided. This can be done prior to the interview.

#### **A.2 Name of Head of household**

The name of the head of the household will be given on the household sample list and will assist the enumerator to properly identify the selected household. The enumerator will confirm the name of the head. The head of the household is the person who makes most decisions at the household and who is acknowledged as head by all members of the household.

#### **A.3 District code/name**

This is the name of the district in which the selected household is located. It will be given on the household sample list and can be written prior to interview, along with the district code, also on the sample list

#### **A.4 TA/STA/Area**

Write down the name of the TA or STA and the area in which the selected household is located. Area can be village or township and indeed the popular name well known in the locality. This will also be given on the household sample list and can be written prior to interview.

### **A.5 Date**

This is the date the interview is conducted. Months are converted to numbers; for example, June is '06', July is '07', August is '08', September is '09', etc. The year is recorded by using only the last two digits; for example, 2007 would be recorded as '07'.

### **A.6 Respondent Member Number**

Each member of the household is assigned a number by the enumerator according to the household roster. This is done at the time of listing household members' names at the top of the *demographic section* . If the head of household is the respondent to the interview, then the number entered in A6 will be '01'. If the respondent is someone other than the head of the household, A6 cannot be filled until after the listing of all household members is done in Section B. Then the number of the relevant person can be transferred to A6.

**Remember that the respondent should be the head of household, spouse or a member that is grown up and has clear knowledge of the household issues.**

### **General information**

**F1. Did your household leave any farm land uncultivated this season that was cultivated last season?**

This is a screening question and just mark the answer with a cross. If they did leave any land cultivated this season continue to F2, otherwise skip to F3.

**F2. What was the main reason that this land was not cultivated.**

Record the main reason that this land was not cultivated.

**F3. In the agricultural season 2006/2007, did you attend an extension course, attend a village meeting or was visited at the farm by an extension worker?**

If the household was in contact with the extension service, record Yes, and continue to ask question F4. If not, skip to question F5

**F4 How many times the household was in contact with the extension service**

Agricultural extension service might be provided in several ways. Record which forms of contact with the extension service the household had, whether attending an extension course, attending a village extension meeting or visited at the farm by an extension worker. Also, record how many times they had contact with the various forms of extension services. In case of no contact, record 0 in the box provided for number of times.

**F5. If they were not in contact: Why not ?**

If they were not in contact with extension service, record the main reason why they were not in contact.

**F6. How many men, women, boys and girls from the household have been engaged in the following farming activities in this season?**

Find out how many household members have participated in each of the activities listed, that is, land preparation, planting, weeding, harvesting and marketing. Find out how many male and how many female household members participated and how many boys and girls in the household who participated in each of these activities. **If no work was done by one of these four groups for a given activity, record 0 in that box.**

**F7. How large share of the work was done by the men, women, boys and girls in the household for each of these farming activities in this season?**

This question is meant to find out about the division of labour between men and women and children in the household. For each of the farming activities listed, see question P21, try to find out how large a share of the work adult males, adult females and boys and girls have carried out. If men carried out all land preparation work, you mark the box for **all** and for men. If women carried out half the work, on say, planting, you mark **half** for women in the box for planting, etc. If you already know from F5 that no household-members from one of these groups participated in any of these tasks, you may mark for none here in F6 without asking the question.

**F8. How many and what type of workers did your household engage in the following farming activities in this season?**

Here we ask for the work done by permanent and temporary workers hired from outside the household. Ask this question for each of the tasks.

## Food security

**F9. Has your household experienced any theft of the following during the last 5 years?**

Find out whether the household has experience any theft of livestock, crop produce in field and/or crop produce from storage and mark in the appropriate boxes.

**F10. Has your household harvested any staple food in the 2006/2007 season yet?**

Here we want to check whether the household has been cultivating staple food, but not yet harvested it. If they have harvested go to F11 otherwise skip to F12.

**F11 Do you still have staple food left from your 2006/2007 harvest.**

Ask the respondent if the household still has food in stock from the 2006/2007 agricultural season harvest. In the case of cassava , it might not necessarily have to be harvested, but if it is still kept growing in the garden and harvested as needed, the household will have staple food left. If the household reports to have no staple food left, go to F13. Otherwise proceed to ask question F12.

**F12 Does your household expect to harvest any staple food in the 2006/2007 season?**

If the household expect to harvest any staple food continue to ask question F13, otherwise skip to F14.

**F13 In which month will your staple food (2006/2007) run out**

Ask the respondent to estimate when (month and year) their staple food from their own harvest in the 2006/2007 season is expected to run out. Record the response in the boxes provided. The first two boxes are for month and the last two are for year, e.g, month 08 is August and year 07 means, 2007..

***Note that the reference period for the remaining questions in this questionnaire is the last 7 days before the interview took place***

**F14 During the last 7 days how many main meals did the household take per day?.**

A meal is defined as consisting of a staple food ( maize, cassava, rice, potatoes, bread or any other staple). The three meals are generally, breakfast, lunch and supper. Any other meals are not main meals.

**F15 What staple food did your household mainly eat in these meals**

First meal may be tea with bread or potatoes, and the second may be nsima from cassava etc. please indicate the main solid food that the household takes.

**F16 Eaten some selected food items**

Read through the list of items in the question, and for each item ask if the household consumed any of the items over the past 7 days. It does not matter whether the food was purchased, from own production or received as gift. If eaten more than 3 times, put almost daily. .

**F17 Main sources of food**

In this case only main sources should be asked, and take note that the question is a multiple response. Put from own produce if the food comes from his/her production and not bought. Free food is food gotten free from friends, relatives or organizations.

**F18 Main income sources used to provide food**

Remittances is from income from pension, money from sons/daughters/relatives, etc. If the household got money through sale of fish that you buy, or sale fish caught from the river or lake indicate business, while if you sale fish from your own pond/dam indicate Sale of own fish. If you sold tobacco, cotton, etc, indicate sale of cash crop, but if you buy and sell these cash crops, indicate business.

**F19 Family could not afford to eat what they normally eat**

This may be all the household members or only a few failing to take the usual meal due to not having enough food. Tick yes even if it is only for just a few days in the past 7 days. If No go to F22, otherwise proceed to ask question F19.

**F20 How often the household could not afford to eat**

Please indicate the number of times during these 7 days that the household could not eat the normal food.

**F21 Coping mechanism**

This can have more than one answers [multiple response]. Cheaper food includes Gaga [Madeya], or just drank tea without starch food, etc

**F22 Members who failed to eat.**

Find out which of the household members who failed to eat. Note that this is a multiple response question, such that you should record all household members that failed to eat.

## HIV/AIDS SECTION

### Purpose of section

The purpose of this module is to find out the impact of HIV/AIDS on farming households: how the pandemic has affected them socially and economically. Mark relevant boxes according to answers given. It is particularly important to pay attention to skip rules.

#### **F23: Chronically ill persons in the household during this agricultural season**

This question seeks to establish whether a member of the household had been chronically ill for at least 3 months in this farming season. Chronic illness are of relatively long duration, usually with a slow onset, with long-term negative effects on health. Chronic illnesses can be contrasted to acute illnesses, which come suddenly and, once cured, usually do not have long-term effects.

This is a simple “Yes or No” question. If the response is “No” skip to F25.

#### **F24: How many persons in the household were chronically ill during this agricultural season**

This question is for those household where at least one person been chronically ill for at least 3 months in this farming season and seeks then to establish how many persons had been chronically ill for at least 3 months in this farming season. Record the number of persons.

#### **F25: What chronic illness did they suffer from.**

Space is provided to report chronic illness for up to three persons. Space is provided to report more than one chronic illness. Usually a single chronic illness among several will be the more important, with the other illnesses resulting from the principal illness. This principal illness should be reported first. If the individual is suffering from more than two chronic illnesses, record the two most severe or most debilitating.

#### **F26: Where were the sick persons cared for**

You should record whether any sick person was cared for at home, any at the clinic or both. If the response is ‘2’ (At the clinic) skip to F27.

**F27: Who cared for the sick persons**

Record the household member or members who cared for the sick persons. Choose from the list given in the questionnaire. If the head of the household was the one who took the responsibility of caring for the sick persons, mark box 1, Box 2 is for the spouse of the head etc. This question allows for multiple responses.

**F28: How was the economy of the household affected because of caring for the sick persons**

This question collects information on how the economy of the household was affected because of caring for the ill persons. Record one or more responses in the appropriate boxes.

**F29: How were the farming activities affected because of caring for the sick persons**

The question establishes how farming activities of the household were affected by caring for the sick persons. Multiple responses are acceptable here.

**F30: Deaths in the household or community**

Ask whether there has been any death in the household or his community in the current farming season. Indicate whether the death(s) occurred in the household or the community. If the answer is “No” skip to F33.

This question may cause difficult emotions to the respondent. You will need to be extremely sensitive to the emotional state of the respondent as you ask for this information and that in question F30 . Be courteous and sympathetic.

**F31: Number of deaths**

The question is asked to determine the number of deaths in the household and the community. Record the totals in the appropriate boxes.

**F32: How the deaths affected the household**

The question establishes how the deaths reported in F29 and F30 affected the respondent’s household. Multiple responses are acceptable here

**F33: Number of days spent attending funerals/mourning ceremonies**

Indicate the number of days the respondent spent away from farming activities because he/she was attending to funeral/mourning ceremonies.

**F34: Any orphans in the household**

Obtain information on whether the household has orphan(s). This again is a simple “Yes or No” question. If the response is “No” skip to end.

**F35: How the household has been affected by having orphans**

The question is asked to determine how farming activities of the household have been affected by having those orphans. This could be positively or negatively. Record one or more answers as appropriate.

**F36 Result of the interview**

Record whether the interview was completed with the selected household. If not, record the reason why in the boxes provided.

## **PART 3: MODULE 5: MARKETING MODULE *INCOMPLETE***

### **Introduction**

This module will collect information on what the household has bought of equipment and inputs such as seeds and fertilizer for crop production and what the household has sold of crop produce either bulk sale or small scale sale throughout the season.

Module 1 Household characteristics is used to ask for what kind of inputs the household has bought before the season and up to the time of interviewing with Module 1. From that on and to the very end of the season, this Marketing module is used to measure the inputs bought and the produce sold. Usually the households are not able to remember minor purchases and small scale sale for a long time. Hence you will have to visit each household in a regular manner, that is ABOUT EVERY THIRD WEEK after the Module 1 Household Characteristics visit and to the final visit in September/ October. During these visits you will ask the household whether they have bought anything or sold anything since the previous visit. For each item they have bought and for each item they have sold you will ask for some information and fill in one line in the inputs page or the sale page.

This module is made into one booklet for each EA with three pages for inputs and three pages for sale for each household. Each time they have bought something or sold something you will in one line for that household. Remember to keep this booklet well protected from the rains since it is supposed to last for long.

If you complete the three pages for inputs or for sale for a household, you need to start with a second booklet for that EA. You will then need to bring both booklets along and use the first booklet for any household as long as you have some empty lines left for that household.

## **Section A. Interview information**

### **Purpose of section A**

This section provides information to identify the household being interviewed. The field supervisor will have, for identification purposes, a list of dwelling units and corresponding households to be interviewed. It is important for the success of the survey that the actual household being interviewed is the one selected and appears in this sample list. Part of the identification information will be completed prior to the interview, part of it will be completed as the interview begins, and the rest will be completed at the end of the interview.

### **Cluster code (Enumeration Area)**

Every household is located in a cluster (EA), which in turn is located in a district. However, the Cluster code in conjunction with the household number will be sufficient to uniquely and completely identify every household in the sample.

The selected EAs have been numbered sequentially from 0001 to 1641. The number will be given on the household sample list and should be written in the questionnaire prior to the interview.

### **Household number**

All households on the sample list will be given a number from 01 to 15. That means there will be 15 selected households. In the booklet, the household numbers are already pre-coded on each of the recording sheet. Since there is only one front page, the number 99 is assigned as the household number and pre printed on the questionnaire.

### **Questionnaire–booklet number**

Extra questionnaire–booklets are needed if one or more households buys more than 50 items or sell more than 45 items during the season. The first questionnaire–booklet is number 1; extra questionnaires are numbered 2 through 9 as required. The Reference Number (see below), the household number, the questionnaire number and the rest of the information in Section A are recorded in the extra questionnaires.

## **Reference number**

In this module, the front page is assigned a unique eight-digit identification number. This number will be a combination of the:

14. cluster code: 0001 to 1641
15. household number: 99 (on the front page) and 01 to 15 (pre-coded)
16. Module number: 5 (pre-coded).
17. Questionnaire number: 1 to 9

Remember that this number will be written in the boxes located in the upper right-hand corner of **ALL PAGES** of the questionnaire, and done immediately for all pages of the questionnaire, not when you start a new page, but all pages at the same time, otherwise it is easy to forget. The household number and the module number have been pre-coded for you.

### **A.1 Interviewer's number/name**

Each enumerator will be assigned a unique identification (ID) number, which he or she will use throughout the duration of the survey. This number must be entered in A1 for all the questionnaires the enumerator fills in. The numbers will range from 001 up to 600. The enumerator will write his or her name in CAPITAL LETTERS in the box provided. This can be done prior to the interview.

### **A.2 Name of Head of household**

The name of the head of the household will be given on the household sample list and will assist the enumerator to properly identify the selected household. The enumerator will confirm the name of the head. The head of the household is the person who makes most decisions at the household and who is acknowledged as head by all members of the household.

### **A.3 District code/name**

This is the name of the district in which the selected household is located. It will be given on the household sample list and can be written prior to interview, along with the district code, also on the sample list

#### **A.4 TA/STA/Area**

Write down the name of the TA or STA and the area in which the selected household is located. Area can be village or township and indeed the popular name well known in the locality. This will also be given on the household sample list and can be written prior to interview.

#### **A.5 Date**

This is the date the interview is conducted. Months are converted to numbers; for example,

June is '06', July is '07', August is '08', September is '09', etc. The year is recorded by using only the last two digits; for example, 2007 would be recorded as '07'.

#### **A.6 Respondent Member Number**

Each member of the household is assigned a number by the enumerator according to the household roster. This is done at the time of listing household members' names at the top of the *demographic section*. If the head of household is the respondent to the interview, then the number entered in A6 will be '01'. If the respondent is someone other than the head of the household, A6 cannot be filled until after the listing of all household members is done in Section B. Then the number of the relevant person can be transferred to A6.

**Remember that the respondent should be the head of household, spouse or a member that is grown up and has clear knowledge of the household issues.**

### **Purchases of inputs and equipment**

#### **Purpose**

The purpose of this section is to establish what the household has bought of equipment and inputs for this season and what has been sold of crop produce.

#### **Definition of item**

You should in general use one line for each type of item. Hence if the operator has bought one, two or even five hoes, whether being the same type

of hoe or slightly different types, they should still be recorded on one line, as long as they have the same input code.

### **Definition of inputs and equipment**

You should include all equipment which is bought mainly for agricultural production. Hence you should include such as a hoe, but not a bicycle. The bicycle might well be used for transport of fertilizer and produce, but is designed as a general transport means and should not be included here.

### **Definition of crop produce**

Crop produce includes first all crops which are sold fresh or dried whether shelled or not. It also includes slightly processed crop produce such as cassava chips. But it does not include processed food such as beer and grilled maize cobs.

### **M1 Date**

This is the date the interview is conducted. (Not when the input is bought or the crop produce sold.) Months are converted to numbers; for example, June is '06', July is '07', August is '08', September is '09', etc. Be aware that in this question, the year is not recorded since we always address the year 2007.

### **M2 Input code**

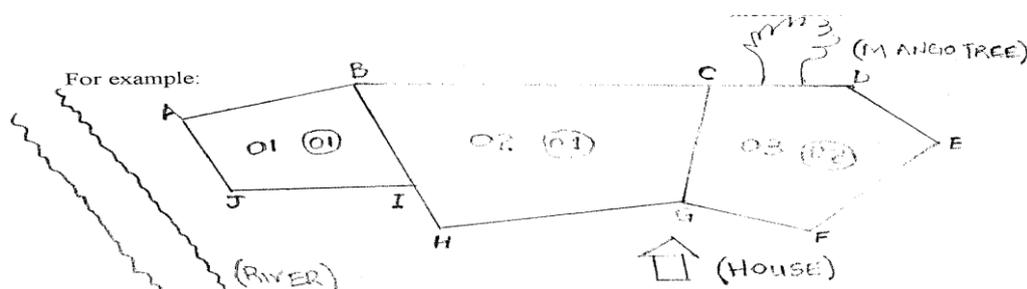
## Annex 1 AREA MEASUREMENT

### Introduction.

Before starting to measure any parcel of land belonging to the household, make sure that your parcel listing for that household is up to date and correct.

You will need to have with you at least one Land Survey Questionnaire 4 (Q4) for each parcel of land belonging to a household and one Plot Details Questionnaire (Q5) for each plot in each parcel. You will also need to have a GPS only and number of small sticks to use as pegs.

Before starting any measurement fill in the Identification panel and the reference number of the Land Survey Questionnaire and on the Plot Details Questionnaire for each plot in the parcel.



Taking the first parcel with the household head or plot operator accompanying you, walk around it marking the corners of each plot.

Draw a sketch plan of the parcel on the space provided on the Land Survey Questionnaire. This should be your nearest (best) estimate to the shape of the parcel showing each corner and the plot boundaries. On the sketch write the plot number, the operator number (written inside a circle to distinguish it from the plot number) and any landmarks that may help you to recognize the garden from your sketch next time you visit it. In each plot write names of crops grown.

***Remember on Area measurement data.***

Plot N°: number all the plots of the parcel of land from 1 to n. This number will

become the plot serial number for Questionnaire 5 "Plot details".

Ask the operator to tell you the crops that are grown on the garden and indicate the boundaries of the plots.

When measuring the plots with crops in a parcel using the GPS, remember to count the number of paces around it and record them in your field note book for the purpose of YSP laying.

## **Annex 2 Area Measurement using a GPS**

When the parcels and plots are identified and a sketch map is drawn, the parcels and plots are to be measured using a GPS tool.

In the NACAL a Garmin Legend Cx GPS is to be used. For each plot or parcel to be measured, you should use the sketch map for orientation. You should mark your starting point with a stick and walk clockwise along the perimeter (outline) of each plot and parcel with the GPS activated for area measurement. When you return to the starting point and tell the GPS to stop the area measurement, the GPS will display the area measurement directly in hectares. You should then record the results in the questionnaire with THREE decimals.

A GPS use the information from satellites to find the geographical position on the earth surface by longitude and latitude. It might even find the altitude, but this function we will not use. The position is found by a continuous measurement of the time a satellite signal takes to reach your GPS from a satellite in the sky. With clear signals from at least 4 satellites, the GPS is able to calculate the geographical position with a sufficient accuracy. The better sight to a large part of the sky a GPS has, the more signals and clearer signals are received. Shadows of buildings and even large trees should be avoided while using the GPS in the field. You should also make sure to stretch your hand holding the GPS forward when you do area measurement to avoid that your own body shadows for the satellite.

## **Batteries and Buttons**

The GPS uses 2 AA batteries. Each enumerator will get 2 sets of batteries. Please take the batteries out of the GPS when you COME HOME FROM WORK. Make sure to put in the batteries in opposite direction, just as marked at the bottom of the battery compartment. You open the battery compartment by using the small triangle as handle and turn it anti-clockwise  $\frac{1}{4}$  round (= 90°) and carefully removing the rubber-lid. You close it by turning the handle clockwise  $\frac{1}{4}$  round.

The GPS has five buttons including one double button. We are mostly to use only four of them. The GPS has two buttons on the right side, a Start up button marked with a bulb and a Backwards button marked with a cross in a box. The GPS has two buttons on the left side, one of these is a Double button marked with arrowheads pointing up and down. The other is a Menu button marked with a notepad. In front there is a Pointing button. The Pointing button might either be pressed in or moved around to left, right, up and down. The others are all only to be pressed in.

## **Step by step instructions for use of a Garmin Legend Cx to find the north direction.**

1. When you are to draw a sketch map of the parcels and plots, you will need to find the north direction.
2. Go to the parcel which you are to sketch.
3. Switch on the GPS by pushing and holding the Start key (marked with a bulb) for up to 2 seconds or until you hear a beep or see a screen picture.
4. The GPS will now seek to acquire satellite signals and this may take up to 3 minutes. The screen will now display a sketch map with a black triangle showing your location and a white arrow head showing the north direction.
5. This map is one of three main screens of the GPS. The others are the main menu page and the compass page. You move from one of these pages to the next one by pressing the Backwards button once.
6. Use the Backwards button to move to the Compass page.
7. You will now see the compass rose on the GPS. Point the GPS straight ahead of you. The GPS now indicates the direction to North (the capital N in the compass rose).
8. The GPS is however not a compass and it will only be able to give a correct direction of North when you are moving. Hence start to move towards North (while stretching the GPS straight ahead) and change direction towards North

until the N is on top of the compass rose. You are now walking straight North.

9. Use this direction to draw a North arrow on your sketch map of the parcel or plot..
10. Turn off the GPS by pressing the Start button for 1–2 seconds.
11. If you later want to find the north direction, you may either start over again as presented here. However, if your GSP is already switched on, you may at any time find north by going to the main menu (press the Menu button twice) and then press the Backwards button until you get the Compass rose.
12. You might also get a large red arrow on the Compass screen. Do not take notice of this. We are not to use this.

### **Step by step instructions for use of a Garmin Legend Cx to find the geographical coordinates your location, such as for the starting corner of a plot or a parcel to be measured.**

1. Go to the starting point which should be the starting corner of the parcel/ plot you will measure.
2. Switch on the GPS by pushing and holding the Start key (marked with a bulb) for up to 2 seconds or until you hear a beep or see a screen picture.
3. The GPS will now seek to acquire satellite signals and this may take up to 3 minutes. The screen will now display a sketch map with a triangle showing your location.
4. Open the menu by pressing the menu button (marked with a notepad) twice. (One push will give a simple menu and a second push will give the full menu).
5. Use the pointing button (a round rubber button in front above the screen) to move between the various menu–icons to the Mark–icon and push the Pointing button to open the Mark Waypoint page. There you will be able to read you location in south and east coordinates.
6. Record the south coordinate and east coordinate on the plot module questionnaire. Write down all digits given at the screen. The south coordinate will start with an S and comprise degrees, minutes and seconds, all together 7 digits. The east coordinate will start with E 0..and again be followed by 7 digits. Write down these 7 digits.
7. Press the menu button twice and you are back at the main menu and ready to do other tasks.

## **Step by step instructions for use of a Garmin Legend Cx for measurement of the perimeter and the area of a plot or parcel.**

You may measure the area and perimeter just after taking the location. The you will already have the main menu on the GPS and may start from point 5. If you have not switched on the GPS yet, you should follow the instructions from point 1.

1. Go to the starting point which should be a corner of the parcel/ plot you will measure and mark the starting point by fixing a stick in the ground.
2. Switch on the GPS by pushing and holding the Start key (marked with a bulb) for up to 2 seconds or until you hear a beep or see a screen picture.
3. The GPS will now seek to acquire satellite signals and this may take up to 3 minutes. The screen will now display a sketch map with a triangle showing your location.
4. Open the menu by pressing the menu button (marked with a notepad) twice. (One push will give a simple menu and a second push will give the full menu).
5. Use the pointing button (a round rubber button in front above the screen) to move between the various menu–icon to the Tracks–icon and push the Pointing button to open the Track log page.
6. With the Track log page open, press the Menu button to get the Track menu. Use the Pointing button to move to Area Calculation and press the Pointing button to open the Area Calculation Page.
7. You will now see a sketch map on the screen and at the bottom of the screen you will see the text: Start Calculation (this means start area calculation). This does NOT mean the GPS has started the area calculation, but only that the GPS is READY to start the area calculation.
8. You actually start the area calculation by pressing the Pointing button. Now the text at the bottom of the screen reads Stop. Again this does NOT mean the area calculation has stopped, but only that the GPS is READY to stop the area calculation. In fact the GPS has now just started the area calculation.
9. Now you are to start the real measurement by walking slowly clockwise around the perimeter of the plot. You should hold the GPS flat in your hand and stretch the hand slightly forward. Be sure to walk on the edge of the field (NOT a meter outside the field). At every corner you should stop for 5 seconds (count slowly 1001, 1002, 1003, 1004. 1005) and then continue walking. You should walk all the way around the plot or parcel until you have returned to the location of the marking stick.
10. Check that the text below the screen still reads Stop. If the text does read Start Calculation you missed to push the Pointing button properly when you started and if you read Save Calculated track, you pushed the Pointing button

while you were walking. In both cases you will need to repeat the measurement by starting over again.

11. If the screen reads Stop, you may stop the measurement by pushing the Pointing button and screen will now display the area at the second line from the bottom. It is NOW time to write down the area measure on the plot or parcel questionnaire. RECORD THE AREA IN HACTERES AS IT APPEARS AT THE BOTTOM OF THE GPS.
12. At the very bottom the text will read Save calculated area and you will be able to save the area measurement by pushing the Pointing button. It is NOW time to write down the perimeter in the plot or parcel questionnaire. RECORD THE PERIMETER (Distance) IN NUMBER OF METERS (m) .
13. By using the Pointing button you should go to (highlight) OK and push the Pointing button. You will now again get the sketch map on the screen with Start at the bottom of the screen and you will be able to start the next area measurement.
14. IF YOU MISS THE BUTTON OR LOOSE THE RIGHT POSITION WITHIN THE GPS SYSTEM YOU ARE ALWAYS ABLE TO GO BACK TO THE MAIN MENU BY PRESSING THE MENU BUTTON TWICE. From there you may again select Tracks and continue from point 5 above.
15. You switch off the GPS by pressing the Start key for at least 3 seconds (or to the screen light disappears).

## **Step by step instructions for other GPS activities needed from time to time**

You may also want to use the GPS for other purposes as well, such as for the following tasks:

- Having a look of the track you have recorded and area measured.
- Cleaning the storage. The GPS storage will only be able to store 50 tracks and areas and hence you will need to clean the storage when you have finished an EA.
- Making sure to set the screen to low light in order to save batteries.

These features are described below.

### **Having a look at you track**

1. Go to the main menu by pressing the Menu button twice. Move to the Tracks– icon and press the Pointing button.

2. You will then open the Tracks log page. Use the Pointing button to move to the saved track you want to open and push the Pointing device. Information for you selected track will be shown at the screen.
3. Use the Pointing button to move to the Map field and press the Pointing button. The map of your track will be shown at the screen and you can verify that you walked correctly.
4. Move back to the main menu by pressing the Menu button twice.

### **Cleaning the storage of tracks**

1. Go to the Go to the main menu by pressing the Menu button twice. Move to the Tracks–icon and press the Pointing button.
2. You will then open the Tracks log page. Use the Menu button to open the track log menu. Use the Pointing button to move to the Delete all saved field. Press the Pointing device to erase all tracks you have saved including the area measurements.
3. Move back to the main menu by pressing the Menu button twice.

### **Set screen light to low in order to save battery**

1. Switch on the GPS by pressing the Start button.
2. While the GPS is locating satellites press the Start button once more an a light meter appears. Press the Start button again and the light gets stronger and the light meter goes one step up. Press the Start button more times until the light meter goes down to the lowest level.
3. Leave the GPS alone for one minute and the light meter disappears.
4. The light is now at the lowest level to save battery capacity.

## **ANNEX 3 Control forms**

You will be given control forms that you will need to fill. These control forms are an important part of quality control for all field workers [both enumerators and supervisors]. You should sign in the supervisors control form and the supervisor should sign in your control form whenever he pays you a visit.