GOVERNMENT OF ZIMBABWE

ZIMBABWE NATIONAL STATISTICS AGENCY (ZIMSTAT)

and

MINISTRY OF AGRICULTURE MECHANIZATION AND IRRIGATION DEVELOPMENT

POVERTY, INCOME, CONSUMPTION AND EXPENDITURE SURVEY (PICES)

AGRICULTURAL PRODUCTIVITY MODULE (APM) 2017

FIRST ROUND ENUMERATOR INSTRUCTION MANUAL

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INTRODUCTION

Introduction and background

The Agricultural Productivity Module (APM), is the first nationally representative survey on agricultural productivity in Zimbabwe. The survey covers the agricultural small sectors i.e. the A1 farming areas, the Small Scale Commercial Farming areas, Communal areas and the Old resettlement Areas. The survey is part of the 2017 Poverty, Consumption and Expenditure Survey. The Agricultural Productivity Module Survey is being guided by a Technical Committee consisting of the Ministry of Agriculture Mechanization and Irrigation Development (MAMID) and the Zimbabwe Statistics Agency (ZIMSTAT) with financial support from the World Bank (WB).

Objectives

The development objective of the APM Survey is twofold: (1) collect, disseminate and analyze high-quality household level data on household agriculture and welfare by introducing an additional innovative module to a subsample of the upcoming PICES 2017 survey; and (2) strengthen national capacity for the collection and policy relevant analysis of such data. This will be done by working through existing institutions for data collection and analysis, supporting strong national ownership of the module and promoting institutional interaction between ZIMSTAT, the Ministry of Agriculture, Mechanization and Irrigation Development (MAMID), and agricultural economics researchers.

DEFINITIONS

<u>**Agriculture**</u>

It may be appropriate to commence in this manual by defining and illustrating what agriculture means. Agriculture is the main base of our daily life. All the things directly or indirectly depend on the agriculture in the world. It is a big sector of life. The following definitions give a general idea about the concept of agricultural and its relevance to human survival:

The term "Agriculture" is derived from the Latin word "ager'or "agri" meaning "soil" and "cultura" meaning cultivation.

So, Agriculture means the cultivation of the soil. But in reality agriculture is NOT confined to soil cultivation alone; it includes all aspects of crop production, livestock farming, fisheries forestry etc.

"Agriculture is the science and art of farming including the work of cultivating the soil, producing crops, planting forest plants/trees, raising livestock and rearing fishes."Agriculture is the most important enterprise in the world.

-In a true sense, it is a productive unit where the free gifts of nature—land, light, air, temperature, rainwater, humidity etc. are integrated into a single primary unit (crop plants or their usable parts) indispensable for human beings.

-The secondary productive units namely, animals including livestock, birds and insects feed on these primary units and provide concentrated end products such as meat, milk, eggs, honey, wool, hide, silk and lac etc.

-Agriculture provides us food, feed, fiber, fuel, furniture, raw materials and feed –back materials for and from factories, funds and flood control. A free, fair and fresh environment, abundant food driving out famine and friendship eliminating fights.

Agricultural productivity

Agricultural productivity is measured as the ratio of agricultural outputs to agricultural inputs. While individual products are usually measured by weight, their varying densities make measuring overall agricultural output difficult. Therefore, output is usually measured as the market value of final output, which excludes intermediate products such as corn feed used in the meat industry. This output value may be compared to many different types of inputs such as labour and land (yield). These are called partial measures of productivity.

Agricultural productivity may also be measured by what is termed total factor productivity (TFP). This method of calculating agricultural productivity compares an index of agricultural inputs to an index of outputs. This measure of agricultural productivity was established to remedy the shortcomings of the partial measures of productivity; notably, it is often hard to identify the other factors cause them to change. Changes in TFP are usually attributed to technological improvements.

Some sources of agricultural productivity are:

- Mechanization
- High yield varieties, which were the basis of the Green revolution
- Fertilizers: Primary plant nutrients: nitrogen, phosphorus and potassium and secondary nutrients such as sulfur, zinc, copper, manganese, calcium, magnesium and molybdenum on deficient soil
- Liming of acid soils to raise pH and to provide calcium and magnesium
- Irrigation
- Herbicides
- Pesticides
- Increased plant density
- Animal feed made more digestible by processing
- Adequate grazing for livestock
- Disease Control such as cattle dipping, vaccination and dosing etc.
- Appropriate use livestock as draught power
- Proper breeding system such as artificial insemination, calling of non-productive cows and selection of productive female cows etc.

Agricultural inputs

Agricultural inputs are at the heart of rural marketing and rural development. The different types of Agricultural Inputs can be broken down into two broad categories namely, Consumable Inputs and Capital Inputs

Consumable inputs consist of Seeds (high yield varieties), Fertilizers (manures), Veterinary medicines, Packing materials (gunnies, ropes, twine), Agrochemicals, Oil and lubricants and Cattle feed

Seeds can be defined as any part of the crop from which a new crop will grow. Loosely, any propagative part of a plant, such as a tubers, spore, or bulb. Botanically, seed is a fertilized ovule. It is interesting to note that Seed quality is estimated to account for 20-25% of productivity

Fertilizers – macronutrients nitrogen, phosphorus, potassium, sulphur, calcium magnesium - present in plant tissue in quantities from 0.15% to 6.0% of dry matter – micronutrients Molybdenum, Nickel, Copper, Zinc, Manganese, Iron, Boron, chlorine - present in plant tissue on the order of parts per million (ppm), ranging from 0.15 to 400 ppm DM, or less than 0.04% DM. It is important to note that all nutrients fulfill specific functions in plants and cannot replace each other. In other words:

- All of them are equally important, regardless of the amount required physiologically
- Lack of any single nutrient will limit crop growth even if all the other nutrients are fully available
- Supply of all nutrients is essential to produce high yields of good quality

Capital inputs – Tractors – Agricultural machineries (thrasher, harvester) – Agricultural implements and tools (cultivators, levelers, irrigation, pump sets, motors, sheds, bullock carts, jeeps, sprayers, hoes etc)

SAMPLE DESIGN AND THE ROLE OF THE ENUMERATOR

Sample Design

The APM survey focuses mainly on rural smallholder households engaged in agricultural activities. Thus, urban and related EAs/households will not be covered. In addition, A2 and large scale commercial farming household will not be included in this APM survey. The table below gives the distribution of EAs and households to be included in the APM survey:

1. 46% of Communal area EA's will be selected for the APM sample, this number is 160 EA's. In each of those 160 communal EA's, 8 out of the 14 PICES households will be selected for the APM.
2. All Small-scale Commercial Farming areas (SSCF), A1-A2-LSCF as per the PICES classification, and Resettlement Areas (RA) EA's will be selected for the APM. In Small Commercial Farming areas (SSCF) and A1-A2-LSCF, all 14 PICES households will be selected for the APM, noting that A2 and LSCF sector type households will be excluded.
3. All Resettlement Areas (RA) EA's will be selected for the APM, in these EA's 8 PICES households will be selected for the APM, noting that A2 and LSCF sector type households will be excluded.

Sector type	Number of PICES EA's in 1st quarter	Number of EA's selected for APM	HHs per EA selected for APM	Total number of APM Households
Communal	349	160	8	1280
Small Scale	9	9	14	126
A1,A2,LS	35	35	14	490
RA (A1,A2)	82	82	8	656
Urban	100	0	0	0
Other Urban	1	0	0	0
Total	576	286		**2552**

This sampling strategy allows for representativeness at national level as well as communal, small scale commercial farming together with A1, and Resettlement Arears (A1 only) farm sector types.

For logistical purposes and as a way of ensuring that the APM survey takes off in time, the APM committee resorted to the following alternative:

- A form with the household basic information, sector type and whether the household is agricultural will be sent to the Provincial Supervisors. The information obtained from this form will be used by the ZIMSTAT sampling team to randomly select 8 agricultural PICES households out the 14 interviewed in the Communal and RA type EA's.

  - Additionally, the information on the form mentioned above will be shared with the APM enumerators so that they prefill the questionnaire and are able to find the selected households.

Team composition and movement

Teamwork is a crucial part of APM field work business, as it is absolutely necessary for all levels of staff in the field to **work** well together, trying their best in any circumstance. **Teamwork** means that people will try to cooperate, using their individual skills and providing constructive feedback, despite any personal differences between individuals. Individuals in the team must know why they are in the team and their purpose in life (PIL), i.e. to collect high-quality household level data on household agriculture and welfare.

There will be 8 mobile teams comprising a team leader, and 5 interviewer(s) will be used per province. The teams will be operating in a roving manner. This means that the team will move to an EA, interview all selected households in that EA including PLOT measurements and then move to another EA and do same until all the EAs and households in the assigned province has been covered.

Role of Field Staff

Your presence, interest, participation and co-operation are absolutely vital for the successful completion of fieldwork. You will be provided with the necessary information, training, equipment and support in order for you to accomplish this very important task. In order for the workload to be equally divided and the support equally shared, the following have to be observed and be enforced:

a) Every position in the survey staff is vital to the success of the survey.

b) Except in cases of illness (where the team leader or enumerator himself or herself falls ill), any person who is absent from duty during any part of training or fieldwork without prior approval from the supervisor or team leader will face disciplinary action.

c) There is a great deal of work to be done during the training days and unnecessary absenteeism, lack of seriousness in attending the training sessions or arriving late at an assigned work site will not be tolerated.

d) Maintaining your position is based on competence, therefore your performance and ability must be high both during training and fieldwork.

e) Throughout the survey training and fieldwork period you must bear in mind that you are representing the Zimbabwe National Statistics Agency (ZIMSTAT). Your conduct must be professional and your behaviour must be congenial in dealing with the public. You must always be aware of the fact that we are only able to do our work with the goodwill and co-operation of the respondents.

f) For the success of the survey, the APM field staff must work closely together sharing problems, co-operating and supporting each other. Tasks will be assigned in a manner that enhances the co-operation and goodwill of each APM team. Any member of the field staff who creates a disruptive influence on others will be liable to disciplinary action.

g) It is absolutely essential that the data gathered during the fieldwork be both accurate and valid. To control inaccurate or invalid data, spot checks will be conducted.

h) All electronic gadgets – laptops and WiFi hotspots should be kept secured at all times.

Role of Enumerator

Enumerators are an essential part of the survey process and serve a very valuable role, they occupy a central position in the APM. He or she is the link between the questionnaire and the sample unit, in this case the selected household. The position held by the enumerator may seem low in the survey hierarchy but the ultimate success of the survey depends on the quality of each enumerator's work.

In general, the duties of the interviewer within the scope of the APM will include:-

a) Publicising the survey and approaching local authorities as well as influential people to introduce oneself and the survey.

b) Identifying the selected households and persuading them to participate in the survey. The list of households will be supplied to the enumerator by the APM team.

c) Identifying the most competent respondents and gaining their cooperation.

d) Interviewing households and recording responses.

e) Making repeated visits at appropriate times to households to make sure that the all questions/sections in the questionnaire are filled correctly and accurately.

f) Checking completed questionnaire sections to make sure that all questions were asked and the responses were recorded accordingly. This is to be done immediately after completing the questionnaire and before leaving the household.

g) Making call back visits at appropriate times if needed.

It should always be borne in mind that "***high quality work***" depends on:

- ***Good training***: Enumerators must <u>know</u> what they have to do;
- ***High morale***: they must <u>wish</u> to do what they have to do; and
- ***Close supervision***: they must be informed as soon as possible when they make mistakes.

Moreover, enumerators with a positive attitude have a better chance gaining cooperation from respondents than do enumerators who think it will be difficult to gain cooperation.

These tasks and many others will be described in more detail throughout this manual and during the training sessions.

Role of Team leader

The primary responsibility of a supervisor is to manage the interviewers to ensure the successful completion and quality of data collected in a given time period of the fieldwork. The supervisor is expected to record information about the fieldwork by completing the fieldwork forms, which track the status of completion of the work in the field, document problems in the field and

solutions taken to resolve these problems. Specifically, the supervisor tasks will include but not limited to:

1. Introduce the survey team and interviewers in the communities and households where the survey is administered.

2. Review questionnaires and check that they have been correctly filled in.

3. Monitor and attend some interviews and make comments on the interviewer's performance.

4. Meet frequently with each member of the group to discuss, improve and organize work.

5. Help interviewers to solve problems they encounter in dealing with respondents who are not responsive to questions or refuse to be interviewed.

6. Manage the team's work schedule, including tracking questionnaires completed in the field and questionnaires that require correction by interviewers.

7. Communicate with ZIMSTAT, Provincial and Headquarters staff regarding field issues, as necessary.

Unlike previous surveys, this survey would have field teams comprising yourself, the supervisor, five interviewers, who will be operating in a roving manner. The supervisor is responsible for the work allocated to your team and for assisting each member of the team in carrying out his or her job. The supervisor will provide feedback to the ZIMSTAT management team at all stages of the work.

In addition you are charged with the responsibility of helping the interviewers to identify the households that have been allocated to them, resolving any problems with reluctant households, observing interviews and making checks by visiting the households after the survey to verify some of the data. Interviewers would send you their filled in questionnaires, which s/he should review on a daily basis. Upon review, the supervisor will either reject or accept the completed questionnaire depending on whether or not the completed questionnaire has errors and inconsistently filled or everything looks great. The supervisor will need to work with the interviewer to discuss these errors. The interviewer should return to the household to re-ask any problematic questions or to obtain any missing information. The corrected questionnaire would be sent back to the supervisor for review. This process continues until there are no errors or none

that can be resolved. At this point the questionnaire/interview is considered complete and approved by the supervisor. As you can see, there are a lot of responsibilities.

Role of Provincial Supervisor

The Provincial Supervisor is responsible for all PICES/APM activities in the province. He or she is the link between the field staff and Head Office survey staff.

a) Assigning work to Team Leaders, including allocation of EAs to be covered by each team during data collection.
b) Contacting provincial, district and other authorities as a way to publicise the survey.
   Monitoring the progress of the survey in the whole province through:

- supervising team leaders
- conducting quality control and spot checks in the field
- observing interviews during field supervision
- editing questionnaires in the field and in the office and verifying that the quality of work is of acceptable standard

Training of Enumerators

It is understandable that some enumerators are naturally more adept at soliciting information from respondents than others. Interviewers with considerable experience tend to get lower nonresponse rates than interviewers with less experience. It is also acceptable that one can become a good interviewer through experience and training. This training is aimed at making the best use of these two attributes. Hence the training will consist of classroom training and some practical exposure. Since every survey is unique, you are all required to actively participate in the training. Learning anything takes a little time. Before each training session you should study this manual carefully along with the questionnaire. You must allow time for new ideas to sink in; and be prepared to go slower with hard stuff. Write down any questions you may have. Mentally label everything you must learn as one of 3 categories: **MUST KNOW, SHOULD KNOW and COULD KNOW**.

'Must know' are indispensable. Focussing your mind on what goes into which category aids effortless learning. Spend enough time on 'must know' and 'should know'

Ask questions you might have at any time in order to avoid mistakes during the actual administration of the questionnaire. At any stage you must bear in mind that interviewers can learn a lot from each other by asking questions and talking about situations they encounter in the field practice and actual fieldwork situation.

During this training session you will be exposed to;

a) General fieldwork instructions
b) Detailed discussion of questionnaire sections and manual
c) Classroom and *homework* assignments. Some of these assignments will have to be done in the evenings.
d) Field practice will entail collecting information from households and discussion of experiences after the practice.
e) Written Tests will be administered during the course of the training and these tests are meant to assess how well you are performing during your formal training. These tests will indicate your familiarity and understanding of survey concepts and definitions, the questionnaire and the survey process. At the end of the training session your strengths and weaknesses will be pointed to you with a view to correcting you before the start of the actual fieldwork.

The training for the APM does not end when the formal training is completed. The supervisor will continue to discuss with you while in the field, an opportunity which should be utilised to continue your training and reinforcing of your knowledge. The formal training period merely provides you with the basic knowledge and information regarding the survey, questionnaires, etc. Thus continued observation and supervision during fieldwork completes the training process. It is imperative that you discuss and forward to your supervisors, problems which you may run into (during fieldwork) but might have not been covered during training.

As has already been pointed out that training will continue during data collection, this will be done through the following supervisory tasks;

a) Observation of some of your interviews to ensure that you are conducting the interviews well, asking questions in the right manner and interpreting the ideas correctly.
b) Reviewing each questionnaire to make sure that it is complete and is internally consistent.
c) Meet with each member of the team on a regular basis to discuss performance and future work assignments.
d) Help you to solve any problems you may be having with the selected households.

It goes without saying that you must be suitably equipped or you may fail to complete our journey. You should be able to tackle any interview situation without undue difficulty after this training. Short cuts are fraught with danger.

Appropriate action will be taken for those who will not perform at the level necessary to produce high quality data required to make the APM a success.

Conducting an Interview

Successful interviewing is an art and not a mechanical process and each interview is a new source of information to be made interesting and exciting. Although the art of interviewing develops with practice, there are basic principles e.g. on how to build rapport, tips on conducting interviews etc., which are followed. It is essential for interviewers to develop the correct attitude of mind to adopt in carrying out interviews. Some of the essential and necessary attributes of good interviewer or enumerator are: politeness, patience and perseverance. For the sack of clarity these terms will be defined in more detail in subsequent paragraphs.

Establishing Rapport with the Respondent

The enumerator and the respondent are strangers to each other and one of the main task is to establish rapport. The first impression a respondent has of you is formed through your appearance. The way you dress, your voice, gender and age may determine whether your interview is successful or not. The Interviewer's demographic characteristics i.e. gender and age play a role, in combination with similar respondent characteristics and the survey topic. For instance, several

refusals in a row might affect an enumerator's ability to approach the next household. So the respondent and interviewer interaction determines the decision of the respondent to cooperate or refuse. Dress neatly and simply. Enumerators with a positive attitude have a better chance gaining cooperation from respondents than do enumerators who think it will be difficult to gain cooperation. The Interviewer should assess each situation and tailor his or her approach based on prior information, perhaps obtained at the initial contact.

The survey will have been publicised such that the respondent may be expecting your visit. However, always carry your official identification card with you.

Approaching the dwelling unit

Use a direction that appears to be well used as an entrance. Do not straddle fences or any other property boundaries. Ask locals or neighbours your way to the next dwelling unit when in doubt. Try not to arrive at the selected household at an inconvenient time of the day, such as mealtimes, or too late or too early in the morning. Try to arrive when the respondents will not be too busy to answer questions.

a) Make a good first impression:

Always do your best to make the respondent feel at ease on your first visit. With a few well-chosen words you can put the respondent in the right frame of mind for the interview. Open the interview with a smile and greetings and then proceed with your introduction as specified on your questionnaire. A good introduction of yourself, the organization you are representing, the purpose of your visit and what sort of demands you are going to place on the respondent should all be briefly articulated to the respondent. You must be well versed in the local traditional forms of greetings (especially in rural settings). Avoid mumbling and waffling. By the end of this training session it is hoped that the training session will have covered this aspect fully.

Make sure that the respondents do not confuse you with others who might be visiting households for other reasons; for instance malaria campaign.

If the respondents refuses to be interviewed, note the reasons on the questionnaire and inform your team leader who will take appropriate decision.

In such a circumstance, remain calm and polite at all times.

Before declaring a household a total refusal, the interviewer must have applied the three Ps which stand for Politeness, Patience, and Perseverance.

Politeness: is best expressed as the practical application of good manners. The goal of politeness is to make all parties relaxed and comfortable with one another. It is a cultural phenomenon and therefore what is considered polite in one culture can sometimes be quite rude in another culture. Politeness must therefore seek to establish a positive relationship between parties.

Patience: is the state of enduring under difficult circumstances which can mean perseverance in the face of delay or provocation without acting on annoyance in a negative way, especially when faced with difficulties.

Perseverance: is the maintenance of effort in spite of difficulties encountered, it implies steadfastness, unremitting continuance in spite of problems or challenges faced.

b) Always adopt a positive approach:
Never be apologetic and do not use words like, "Are you too busy?" "Would you spare a few minutes?" or *"Would you mind answering some questions?"* Such questions obviously invite refusal before you start. *"I would like to ask you a few questions"* or *"I would like to talk to you for a few minutes"* Such statements may mislead the respondent to think that your mission is unimportant and invite refusal. You can proceed as follows:

"Hello, I am (Name) from the Zimbabwe National Statistics Agency (ZIMSTAT) and I am here to collect data on Agricultural Productivity Module (APM). All the data collected in the Survey is strictly confidential and will be published in aggregated form where personal information of the individual such as names and addresses will not be recognised."

Note again that, enumerators with a positive attitude have a better chance gaining cooperation from respondents than do enumerators who think it will be difficult to gain cooperation.

a) It is essential that you stress the confidentiality of all responses. You should never mention other interviews or show completed questionnaires to other interviewers or supervisors in front of a respondent or any other person.

b) Avoid the presence of persons other than members of the household during the interview.

The presence of third parties during the interview may prevent you from getting honest and frank responses from the respondent. It also violates the rule of confidentiality. It is necessary that the interview is conducted as privately as is possible. A tactful attempt should be made to get rid of third parties.

c) Answer any questions from the respondent frankly.

The respondent may ask a few questions before agreeing to be interviewed. Be direct and pleasant and display your knowledge and understanding of all aspects of the questionnaire and the survey.

Tips on Conducting the Interview

Be neutral throughout the interview.

People are generally polite and may give answers they think you want to hear. Never allow the respondent to think that s (he) has given a right or wrong answer by expressing on your face or tone of your voice and never appear to approve or disapprove any of the respondent's answer. Refer any questions raised by the respondent to the end of the interview. Note that questions are carefully worded to be neutral and do not suggest that one answer is more likely or preferable to another. Failing to read the complete question may destroy that neutrality. If an ambiguous answer is given try to probe in a neutral way by asking like this:

"Can you explain a little more, I did not quite get you, could you please repeat what you said again?"

a) Never ever suggest answers to the respondents e.g. "I suppose you mean that --------, is that right?" Rather probe (i.e. asking questions in such a manner that the respondent comes up with the relevant answer.

b) Do not change the wording or sequence of questions: The wording and sequence of the questions must be maintained. If the question has been misunderstood, repeat it slowly and clearly. If it is not clear, you may reword the question but without altering the meaning of the original question.

c) Handle hesitant respondents tactfully: A respondent may simply say, "I don't know", or may give an irrelevant answer or may act bored or detached or may contradict themselves or may refuse to answer. Try to instil interest of the respondent by spending a few moments talking about things unrelated to the interview. In doing so, please avoid engaging in potentially controversial topics or subjects such as politics, football, religion etc. Confine your conversation to neutral topics such as the weather, agriculture and livestock, comments on the garden, etc. Do not interrupt the respondent or show any signs of impatience (*remember the 3 Ps*) when the respondent is giving irrelevant or elaborate answers. Listen to what she or he has to say and try to steer her or him back to the original question. Listening is an essential part of a two way communication.

d) Do not form expectations: You must not form expectations as to what is supposed to be the income consumption and expenditure patterns of the households. Also remember that differences between you and the respondent can influence the interviewee.

e) Do not hurry the interview. Hurrying the interview may lead to errors in recording responses. You may also not get the correct and accurate answers from the respondent as he or she might not have fully understood or digested your question (s).

Language of Interview

The questionnaire for the APM has not been translated into all the major languages, which the respondents would understand. It is therefore imperative, that each Province team works out translations that fit the local dialects and culture. This should be done during training and copies

of these translations should be handed to the trainers for rectification. It is very important not to change the meaning of the question when you rephrase or interpret it.

FIELD PROCEDURES

Preparatory Activities

Each Enumerator must ensure that s(he) has sufficient materials and is aware of the role to be performed. Each team will be provided with the following:

- GPS
- GPS (AA) Batteries
- Rain coats
- T/Shirts
- Boots
- Pen
- Backpacks/Satchel
- Notebook for observations
- Enumerator Manual
- Questionnaires
- Official ID/Letter
- Pots, plates and utensils
- Flashlight/Torch
- Flashlight/Torch batteries
- Sleeping Bags
- First Aid Kit
- Fuel Jarricane
- Metal trunk for Questionnaire storage and padlocks
- 20 Litre plastic containers for water

- EA maps
- Lists of selected Households (Sample)
- Jungle Hats

How to Read the Questions

Each question should be read clearly and exactly as presented in the questionnaire. You should make sure that the way the question is read preserves the sense of the English question, rather than a word by word translation. If you have questions about how to phrase a question, you should ask your supervisor and refer to your notes from the training, where the phrasing of questions in local language will be discussed in detail. After reading the question, time should be allowed for the respondent to answer. If it appears the respondent did not hear the question, it should be read again and time allowed for a response. In cases where there has to be translation, the question should be translated as literally as possible.

Recording Responses

It is important that, as much as possible, all questions have recorded responses. Consistency is also critical. For each survey conducted each attribute is checked for accuracy, even from one survey to another, such that at regional and international level, the quality is assessed.

The APM questionnaire is divided into 16 sections. Complete the questionnaire in order of sections. The types of questions to be encountered on the questionnaire include those with:

- open ended responses where one must write the respondent's answer in the spaces provided e.g. age; answers in words where paraphrasing should keep the meaning accurate e.g. for occupation.
- pre-coded responses where the responses are listed on the questionnaire, and to record the answer you merely circle the appropriate code. ***Ensure that for any response coded 'Other specify' you specify the response given. The responses are critical during analysis as well as for improvement of future survey responses.***

Also note the following in recording responses:

- **_Question:_** It is to be literarily read to the respondent based on which information required in the survey is obtained. Each question is numbered

- **_Answer Modality or Core:_** These are possible answers where the interviewer selects an answer code, which is closest to the respondent's answer. (Pay attention that in many questions, there are no offered modalities but measured units to be used in the answer (year, KM, kg, etc.)

- **_Answer Box:_** It is a place envisaged to enter given answer

- **_Instruction for Interviewer:_** These are printed in CAPITAL letters, which facilitates survey implementation

- **_Skip Patterns:_** Questions are normally asked in order; one after another. However, in some cases, given answer defines which question to ask next or which question is to be skipped. Questionnaire uses certain marks, which show which question is to be skipped

Right Way of Asking the Questions

Questions should be asked column-wise and answers recorded accordingly. For instance, if the interviewer is on section 5, he/she must ask all the questions under this section for the first PLOT on PARCEL one before proceeding to the next PLOT in PRCEL one.. Asking questions column-wise ensures that we get the correct and unique information for each row item. Interviewers should desist from repeating the same response for all PLOTS or row categories.

10.
What was main the source of this <u>FREE SEED</u> for [CROP] that you used on [PLOT] this agricultural season 2016/2017?

```
GOVERNMENT/EXTENSION
OFFICERS ..............1

NGOs.................2 ►12

AGRICULTURE INPUT
DEALER................3 ►12

FELLOW FARMER ........4 ►12

OTHER (SPECIFY).......5 ►12
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THIS INDICATES SKIP TO Q12 IF THE RESPONSE TO Q10 IS 2

UPPER and Lower Case Texts (CAPITAL Letters and Small Letters)

Texts written in upper case (capital) letters are instructions to the interviewer and should not be read to the respondent. Other texts that you will see written with upper case letters are lists and codes. These also should **NOT** be read to the respondent.

Text written in lower case (small) letters SHOULD be read directly to the respondent.

For example, in Question 1 (see Figure below), you should read: *"What is the total area of all your land holdings?"* You should **NOT** read the text below because it is written with UPPER case (CAPITAL) letters. The text in upper case letters is an instruction to you.

1. What is the total area of all your land holdings? ENUMERATOR: ASK THE FARMER TO ESTIMATE THE AREA. UNITS ACRES...........1 HECTARES........2 SQUARE METERS....3		2. Of all your land holdings, what is the total area of the arable land? ENUMERATOR: ASK THE FARMER TO ESTIMATE THE AREA. UNITS ACRES...........1 HECTARES........2 SQUARE METERS....3	
NUMBER	**UNIT**	**NUMBER**	**UNIT**
_ _ _ _ . _ _		_ _ _ _ . _ _	

Publicity

Publicity should be done properly and effectively at national, provincial, district and local levels.

- At the national level: Insertions can be made in the local media such as Newspapers, Radio and TV.

- At the provincial level: Publicity at this level can be done by sending letters to the following: Provincial Administrators, Town Clerks, District Administrators, Police Chiefs, and other influential people.

- At the district level: Letters can also be sent to the following: District Administrators, Police and other influential people.

- At the local level: Team Leaders and Enumerators should contact the local leadership (Ward Chairperson/ Councillor, Chief, Village Chairperson, and Headman), police and other influential persons before the onset of data collection in every EA.

THE APM QUESTIONNAIRE

Overview of the APM Questionnaire

Below is an overview of the APM Questionnaire. In what follows, we take each section and delve deep into the individual questions, emphasizing the rationale for each question and what we intend to achieve with each question.

COVER PAGE

HH1: HOUSEHOLD ROSTER

AG1: PARCEL ROSTER

AG2: PARCEL DETAILS

AG3: PLOT ROSTER

AG4: PLOT DETAILS

AG5: AGRICULTURAL LABOR

AG6: SEED ACQUISITION

AG7: FIELD CROPS

AG8: TREE / PERMANENT CROPS

AG9: PERMANENT LABOR

AG10: ANIMAL HOLDING

AG11A: PASTURE

AG11B: ANIMAL COSTS AND PRODUCTION SYSTEMS

AG12: AGRICULTURAL PRODUCTS AND BY-PRODUCT

AG13: AGRICULTURAL CAPITAL

AG14: FOOD SECURITY

AG15: DIETARY DIVERSITY

AG16: CONTACT INFORMATION

GPS MEASUREMENTS

HH1: Household Roster

Q01: You **MUST** obtain a list of household members. Members of the household are defined as all individuals normally live and eat their meals together in the household. These may include persons who are not related, such as live-in domestic workers. Start the list with the head of the household. Confirm that the head here is the same person as listed on the cover. Complete the list before moving on to the questions about each individual.

Q02: Ask the sex of the household member. Do not try to guess the sex of the household member from the name provided to you. This can lead to mistakes. Even in cases when you think that the name would most likely be a male's (or a female's) name, have the respondent confirm the sex.

Q03: Ask how the household member is related to the head of the household. If the respondent is not the head of the household, make sure that you record the relationship of each person to the household head, not the relationship to the respondent.

Q04: You are to obtain each person's age in completed years, that is, the age at the time of the last birthday. Please note the instructions in UPPER CASE.

Q05: This question is for all household members and intends to establish if the individual has worked on any of the plots cultivated by the household or has been involved in taking care of the households' livestock in the last 30 days.

Q06: If the response to Q05 is NO, then Q06 wants to establish the main reason why the person did not work on the households cultivated plots or cared for livestock in the last 30 days.

AG1: Parcel Roster

This module is to be administered to the most knowledgeable household member regarding the household farm operations, who may be assisted by other farm managers and labourers within the household. Before delving into the contents of this section, it is important to know the definitions and distinctions between parcels and plots in the context of Zimbabwe.

Definition and Examples of Parcels and Plots

In this agricultural productivity module survey, we will be identifying both PARCELS and PLOTS that are owned or cultivated by the sampled households. In order to correctly identify these pieces of lands and to link the post-planting PARCELS and PLOTS information with that of the post-harvest information, it is important to distinguish between what is meant by PARCEL vs. PLOT.

A **PARCEL** is a continuous piece of land that is NOT split by a river or a path wide enough to fit an ox-cart or vehicle. A **PARCEL** can be made up of **ONE** or **MORE** plots.

A **PLOT** is a continuous piece of land on which a unique crop or a mixture of crops is grown, under a uniform, consistent crop management system. It **MUST** be a continuous piece of land and **MUST NOT** be split by a path of more than one metre in width. Plot boundaries are defined according to the *crops grown* and the *operator*.

Before administering AG1: PARCEL ROSTER and subsequently, AG2: PLOT ROSTER, you **MUST** have a detailed conversation with the farmer(s) concerning the organization of the household farm, using your notepad and relying on drawings concerning locations and boundaries of PARCEL, and definitions/boundaries of PLOTS within each PARCEL.

The farmer(s) and you need to be on the same page regarding the definition of PARCEL and PLOT before proceeding with AG1 and the rest of the APM Questionnaire. As there is an inherent tendency to use the word PARCEL to refer to PLOT. It is important for the farmer to understand the distinction between PARCEL and PLOT. The correct identification of PLOTS in AG2 PLOT ROSTER, where each plot is listed as a separate item and associated with a PARCEL listed in AG1, **REQUIRES** you to be sure that the farmer is listing plots, and NOT a PARCEL with

multiple plots. Below are some examples that are useful for establishing the existence of parcels and plots.

Example 1: One PARCEL that is divided into four PLOTS:
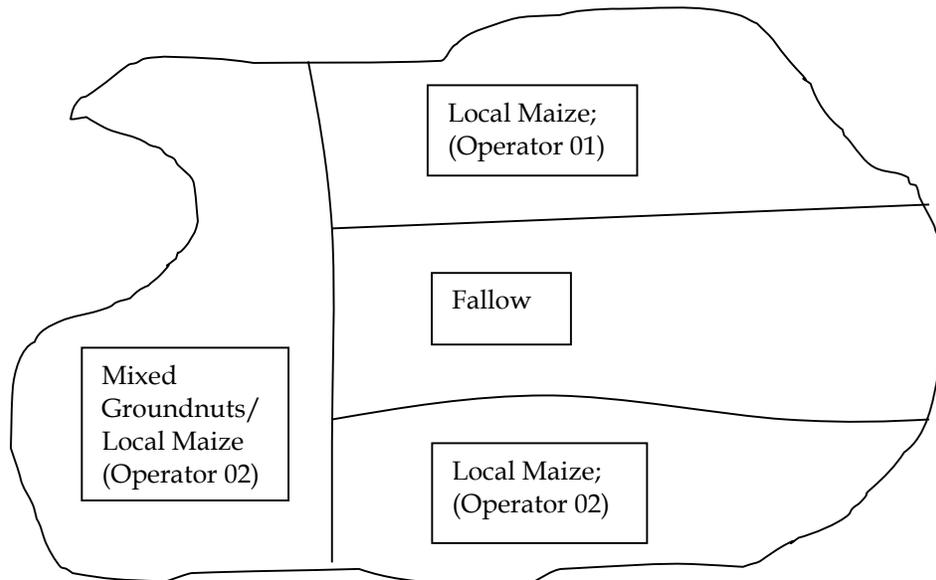
Example 2: The 1st piece of land has an area of 3.0 acres, and is planted only with local maize. The land is divided into two equal portions by a river that is 2 meters in width. Both sides are managed by James, the son to the head of household.

Explanation: First, we identify that there are two parcel as the land is split by a river that is more than one metre wide. The 1st parcel is managed by a single operator – hence, the management system is uniform and consistent throughout this piece of land. The parcel is also pure-stand, planted only with local maize. Hence, the same cropping arrangement is seen throughout. These features along with the fact that the plot is continuous would qualify the parcel as containing a single plot. The same can be said for the 2nd parcel, so each of the 2 parcel contains 1 plot.

Example 3: The *parcel* has an area of 1.0 acre, and is divided by a path 0.5 meters in width. It is mixed-stand, intercropped with hybrid maize and beans in its entirety, and managed only by Elizabeth.

Explanation: The parcel is managed by a <u>single operator</u> – hence, the <u>management</u> system is <u>uniform</u> and <u>consistent</u> throughout this piece of land. The parcel is mixed stand, with hybrid maize intercropped with beans. The same cropping arrangement is seen throughout the parcel which can also be considered <u>continuous</u>, as it is divided by a path that is only 0.5 meters in width, i.e. <u>less than 1 meter</u>. Hence, there is only <u>1 plot</u> in this case.

<u>Example 4</u>: The *parcel* has an area of 1,000 square meters, and is an undivided piece of land, managed by Abraham. Approximately ½ of the *parcel* is mixed-stand, intercropped with hybrid maize and beans with pumpkin planted along the edges. The remaining portion of the *parcel* is cultivated with oriental/burley tobacco.

Explanation: The PARCEL is managed by a <u>single operator</u> – hence, the <u>management</u> system is <u>uniform</u> and <u>consistent</u> throughout this piece of land. It is also continuous. So far, these features would qualify the PARCEL as a single plot. However, the cropping arrangement is not consistent throughout; ½ is cropped with hybrid maize, beans and pumpkins, whereas the other half is cultivated with oriental/burley tobacco. Since there are <u>two unique mixture of crops</u> planted <u>in different halves of the PARCEL</u>, we can conclude that it is made up of <u>2 plots</u>.

<u>Example 5</u>: The *parcel* has an area of 1 hectare, and is pure-stand, planted only with groundnuts. Approximately ¼ of the *parcel* is managed by Moses, while the rest is managed by Abraham.

Explanation: The parcel can be assumed to be continuous, and the same cropping arrangement (pure-stand groundnuts) is witnessed throughout. So far, these features would qualify the parcel as a single plot. However, there are <u>two different operators</u> on <u>two different portions</u> of the parcel. Hence, the <u>management</u> system is <u>not uniform</u> and <u>consistent</u> throughout, implying that the parcel is made up of <u>2 plots.</u>

<u>Farmer Estimation of PARCEL & PLOT Areas</u>

We ask the farmer to estimate the area of all PARCELS, and all PLOTS in each PARCEL. The respondent can choose the appropriate area unit to report the area of the PARCEL and PLOT. You **MUST** encourage them to estimate the area in acres, hectares, or square meters, if possible.

- PARCEL and PLOT area can be recorded with two decimal places. If the farmer reports 1. acre, enter '1.00' and select 'ACRES' for the unit:

AREA		UNIT
_0_ _0_ _0_ 1 . 0 0		ACRES

- Many smallholders are likely to report areas in acres and/or fractions of acres, and probably not more detailed than ¾, ½ or ¼ of an acre. You **MUST** convert the fractions to decimals as follows: ¾ = 0.75, ½ = 0.50, ¼ = 0.25, and fill in the areas with two decimals. You MUST make sure that the decimals are correctly entered in order to avoid data entry errors.

Note the following conversions and use them where appropriate:

1 acre ≅ 4000 m² ≅ 0.4 hectares

1 hectare = 10,000 m² ≅ 2.5 acres

- If any local area measurement unit is used, it **MUST** be converted into acres and selected in this field. The following guidelines can be used:

  - An acre is a measure on the ground of approximately 70 yard x 70 yard or ¾ of a standard football field;
  - By casually walking round a square of 50 steps by 50 steps, one covers an area of approximately ¼ or 0.25 acres;
  - An area measuring 22 yard x 22 yard covers 0.1 acres; and
  - An area measuring 16 yard x 16 yard covers 0.05 acres.

The farmer-reported estimates of PARCEL and PLOT areas will be complemented by GPS-based measurement of PARCEL and PLOT areas. This is covered in detail in APPENDIX A.

Now let's go through the individual questions.

Q01: What is the total area of all your land holdings? Note that the TOTAL land area owned by the household includes both arable and non-arable lands. The UNIT of measurement should also be provided.

Q02a: Of all the households land holding, what is the total area of the land that is arable? Here we solicit for the land holding of the household that is arable. An arable land is one that is cultivable or being used for crop production and includes fallow land. **Note** that the household's arable land cannot be more than the total land holding of the household. Similarly, the UNIT of measurement should be provided. It is advised that the units chosen here should be consistent with the unit selected in Q01.

Q02b: This question is necessary to act as consistency check on number of PARCELS to be listed in the subsequent section. You must therefore establish the total number of parcels that the household own or have access to.

Beyond Q02b, each row of this module on the questionnaire represents **one PARCEL**.

You **MUST** ask the respondent to list ALL PARCELS owned or accessed by the household (regardless of whether they cultivated the PARCEL). In addition, ask them to list PARCELS that the household does not own but that were cultivated by the household, during the agricultural season 2016/2017. According to the PARCEL definition provided above, you **MUST** obtain a list of all PARCELS owned/ not owned but cultivated by household members before moving on to the questions about EACH PARCEL. Names of PARCEL **MUST** be distinct *AND* include location. Try to solicit PARCEL names that are used by the household to identify those PARCELs. The list

of these PARCELS must be recorded on the PARCEL FLAP and used to answer the rest of the questions from this section to section AG4.

The PARCEL owned by the household may be cultivated, left fallow, covered with a forest, or wholly/partly used for grazing livestock, or rented to someone else. Hence, if a survey household does not farm but does control agricultural land, AG1, AG2, AG3 and AG4 **<u>MUST</u>** be administered.

Q03: Please provide a written description and the location of the PARCEL. The description should be detailed, such that it would be easier for you to identify and distinguish each PARCEL in the future. Use landmarks and physical demarcations where possible.

Q04: What sector type is this PARCEL? If option 7 is selected, please specify the other sector with enough details. For options other than Communal (4), skip to question 6, otherwise, continue to question 5

Q05: Given that the response to Q04 is Communal land (code 4), this question asks for the person(s) in the household under whose name(s) the land was registered with the community heads/leaders. Here you should refer to the household roster for the IDs of the person. Please select UP TO TWO applicable member(s) from the household roster.

Q06: How many plots do you have in this PARCEL? EACH PLOT will be listed separately but this question asks you to report the total number of PLOTS found on EACH PARCEL based on your discussions with the farmer, and in accordance with the PARCEL vs. PLOT definitions provided in the previous sections of this manual.

AG2: PARCEL DETAILS

The first column contains an instructional question for the interviewer, based on the response provided in AG1 Q04. If the response to AG1 Q04 is code 4, then this question is YES and the interviewer should SKIP to the NEXT PARCEL and consequently, next section. If the answer however is NO, then proceed to the next question. Please do not ask this question to the respondent.

Q01: This question establishes whether any of the household members are owner(s) of the PARCEL.

If No Skip to Q3

Q02: Who in your household is/are the owners of the PARCEL**?** Here, refer to the list of household members provided in the household roster under section HH1. UP TO TWO IDs of the persons in the household who own the PARCEL should be copied here. **Enumerators are to record 97 if the PARCEL is owned by the entire household.**

Q03: Which non-household member(s) owns/own this PARCEL? Here a RELATIVE is someone that has blood relations with the members of the household either matrilineal or patrilineal. Moreover, a SPOUSE LIVING ELSEWHERE refers to the wife/husband of the household head or a member of the household, who is currently residing outside the household, based on our working definition of a household.

Q04: Do you or any other household members have an OWNERSHIP DOCUMENTATION that verifies the Rights of Occupancy to this [PARCEL]? Such a document ensures that the household owns the PARCEL legally and can use those documents as collateral or sell the land. *If No skip to Q7*

Q05: What type of OWNERSHIP DOCUMENTATION does your household have for this [PARCEL]? This question seeks for the type of ownership documentation for PARCEL. For other types of documentation, enumerators should specify.

Q06: Under whose name did you acquire OWNERSHIP DOCUMENTATION for this plot? This question establishes the ownership status of the PARCEL in terms of the persons in the. Here the list of members of the household will be displayed and the interviewer is supposed to select UP TO THREE applicable members from this list.

Q07: Why have you or any other household member <u>NOT</u> acquired an OFFER LETTER or OWNERSHIP DOCUMENT that verifies the Rights of Occupancy to this [PARCEL]? This question intends to understand why the household has not acquired ownership documentation or offer letter that verifies the ownership status of PARCEL. The appropriate code for the main reason should be selected from the list of options, and for other reasons not specified enumerators are to specify.

AG3: PLOT ROSTER

This section is to be administered to the most knowledgeable household member regarding the household farm operations, who may be assisted by farm managers and labourers within the household. In the absence of someone knowledgeable about the household farming operations, the manager of each PLOT should respond for their respective PLOTs. **Each row** of the section on the questionnaire represents a **single plot on a parcel**. Once PLOTS are listed on the PLOT FLAP, all questions in this section should be asked per PLOT, starting with the first PLOT on PARCEL ONE, before moving to the next PLOT. Please do not ask questions row-wise.

Q01a and Q01b. Please list all PLOTS on all PARCELS that you or anyone in your household owned or cultivated or had access to since the beginning of the agricultural season 2016/2017. All the PLOTS-Parcel combinations should be listed first on the FLAP before proceeding to the rest of the questions.

According to the PLOT definition described earlier of this manual, you **MUST** obtain a list of all PLOTS owned or cultivated by household members before moving on to the questions about EACH PLOT. Thus, names of PLOTS **MUST** be distinct *AND* include location, linked to the parcel listed earlier. Try to solicit PLOT names that are used by the household. For instance "pigeon peas by path to Presbyterian church." If the household grows the same crop on two PLOTS, you must have two different names. For example, "Emmanuel's maize plot nearby the river" and "James' maize plot close to the hill"

Q02: What is the area of the [PLOT]? Ask the farmer/owner/manager of the PLOT to give you the estimated size of the PLOT and second, the corresponding UNIT. Note that this question is about farmer's recall and not the GPS estimates of the PLOT. Don't forget to write leading zeros where appropriate.

Q03: Does any of the decision marker(s) for managing this [PLOT] live in the household? This question establishes whether or not the main decision maker(s) for PLOT is (are) a member(s) of the household or a non-household member(s). Note that the main decision maker(s) can be the manager, owner, the head of the household, the spouse of the head, any other person in the household, someone external to the household, or a combination of these. Decisions include what to plant, when to weed, when to apply fertilizer, etc. Decisions for PLOT include what to plant,

when to plant, when to weed, when to apply fertilizer and other chemical inputs, renting out plots, sharecropping, etc. *If No skip to Q5*

Q04: Who in the household makes decisions for managing this [PLOT]? If the main decision makers for PLOT are members of the household, then all the names of the household members will be displayed and you select UP TO TWO from the household roster

Q05: Which non-household member(s) makes decision for managing this [PLOT]? Only one option should be chosen for the non-household members category.

AG4: PLOT DETAILS

You **MUST** ask the questions in this module for **EACH PLOT** identified in the previous module, **one plot at a time**. Preferably, the manager of PLOT should respond for his/her PLOT. Otherwise, the person most knowledgeable about the farming operations of the household should be made to respond for this section.

If a household has more than one plot, you **MUST** start with the first plot and ask all possible questions. When finished, you **MUST** move to the next plot, and again go through the entire module.

Q01: Is one of the decision maker of this plot answering for this plot? The question aim to link the manager of PLOT provided in the previous section to the one who is responding to the questions on PLOT for this section. *If Yes Skip to Q3*

Q02. Who is the person responding for this [PLOT]? If the any of the managers provided in Q04 of the previous section is not responding here, then Q02 asks for the person in the household responding for the questions on PLOT for this section. If possible, questions concerning an individual plot should be asked to the individual(s) who makes decisions for this plot. *Do **NOT** assume this person will be the household head.*

Q03: In what capacity does your household use [PLOT]? This question establishes the ownership status of the PLOT or the capacity in which the household uses the PLOT. It also captures the means by which the PLOT was acquired by the household. If the plot was acquired by more than one means, please ask for the main means of acquisition. Note that this question is not interested in whether land has title deeds or not or whether money change hands or not. The real interest is how the present owners or controllers, **NOT** their parents or grandparents, got the access to that piece of land. Please probe so as to select the right option for this question.

Owned by the household *is the situation where the household has full ownership to the PLOT. There are several ways through which a household can claim ownership of PLOT – outright purchase w/out title, family inheritance, gift from another person/household, etc.*

Rented plot *is when a plot owner gives a plot to another person for a period of time on agreed amount. We can have two types of rented plots – rented in or rented out.*

Sharecropping *refers to when plot owner agrees to give out his/her land to a farmer/household for farming operation on the basis of sharing the proceeds from the farm with the farmer/household after the harvest. The produce is shared based on an agreed proportion.*

Moved in without Permission: *This occurs if the household does not own, rent or sharecrops the PLOT, but instead occupies it without the knowledge of the owner. This also refers to illegal occupants/operators of PLOT.*

Q04 – Q09: RENTING IN LANDS

These questions solicit information on those PLOTS that are *rented in* by the household. *Renting in* is the situation where the household rents a plot from another household for farming purposes. It normally applies to those households that do not own personal lands or have insufficient lands and therefore resorts to external sources for farming lands. An agreed amount is paid by the rentee to the landlord

Q04: Since the beginning of this agricultural season 2016/2017, how much have you or other members of the household paid, in <u>CASH</u>, for renting this [PLOT]? Write the total amount (USD) paid in cash for *renting in* each PLOT e.g. **200**.

Q05: Since the beginning of this agricultural season 2016/2017, how much have you or other members of the household paid, <u>IN-KIND</u>, for renting this [PLOT]? Payment in-kind for *renting in* each PLOT must be converted and valued in USD. For example **5 bags of maize valued at USD 150, then** 150 should be recorded here.

Q06: Who in the household has use rights or negotiated the contract for this [PLOT]? UP TO TWO IDs from the household roster should be entered here.

Q07: Which other non-household member(s) has/have use rights/ negotiated the contract for this rented [PLOT]? Select the other non-household member that have the use right/negotiated the contract for this rented in PLOT. Only one response is allowed here.

Q08: How was the rental agreement established for this rented [PLOT]? The question solicit information on how the *renting in* contract for PLOT was established. A contract can be entered into either formally in a written form or unwritten, or informally with or without a witness.

Q09: What type of rental agreement was made for this [PLOT] with the landholder? The question solicit information on the actual type of rental agreement. The type of renal agreement can be cash payment, sharecrop or temporary land exchange, among others.

Q10 – Q12: USE OF PLOTS
This sub-section concerns the current use of PLOTS, specifically for this agricultural season 2016/2017. This section is particularly important as it influences subsequent sections of the PLOT PARCEL combinations.

Q10: Since the beginning of this agricultural season 2016/2017, did anyone in the household cultivate this [PLOT]? We are interested in knowing whether or not the plot was cultivated by any member of the household since the beginning of the agricultural season 2016/2017. If the PLOT was given out to a non-household member to cultivate this agricultural season, then the response should be NO. *If NO SKIP to Q20*

Q11: What was the main use of the [PLOT]? For those PLOTS that were not cultivated this agricultural season 2016/2017, this question enquires about the main use of the PLOT. A list of possible uses is provided and the interviewer should record the *MAIN* use of the PLOT.
For options 4 – 7, skip to Q20. For options 2 and 3, however, skip to Q13 and Q19 respectively

Q12: How many years was [PLOT] left fallow? This question is restricted to only PLOTS that have NOT been cultivated this agricultural season and have also been left fallow. The number of years that the PLOT has been left fallow should be recorded and should not be greater than 5 years. *Fallow land is land used for cultivating crops which been left idle. A 0000\0 idle period is five years since a prolonged rest before re-cultivation may result in it being reclassified into permanent meadows and pastures.*

Q13 – Q18: RENTED OUT

These questions gather information on uncultivated PLOT(S) that was (were) *rented out* this agricultural season 2016/2017. *Rented out* PLOTS are those uncultivated plots owned by the household, but rather, gave it out to another household for an agreed amount over a specified period of time.

Q13: What was the size of the [PLOT] *rented out* this agricultural season 2016/2017? Record the size and unit of the plot that was *rented out* by the household this agricultural season 2016/2017.

Q14: How much was your household paid in cash for the rental of this [PLOT]. Therefore make enquiries for the amount received in cash for the rental of this [PLOT] in USD. If for instance the household received 125 dollars and 50 cents, then record 125.50 in space provided

Q15: How many months did this cash payment for the rental of this [PLOT] cover? Record the number of months that the rental payment in Q14 cover here. If more than a year, record the month equivalent. For instance one and 6 months should be recorded as 18 months.

Q16: What was the value in USD, of any IN-KIND payment you received for the rental of this [PLOT]? IF NONE RECORD "0" and go to Q18. ROUND UP TO THE NEAREST DOLLAR.

Q17: How many months did this in-kind payment for the rental of this [PLOT] cover? Enquire for the period that the payment in-kind in Q16 covered and record in Q17 in terms of number of <u>months</u>.

Q18: here, ask for the duration of the *rented out* contract in <u>completed years</u>. Thus, if the duration is less than one year, write 0, less than two years, enter 1, in that order. If the respondent is not able to provide the duration, please put 99.

SHARECROPPING

Sharecropping is a tenure system where a land owner allows a person ("share cropper") to use the land in return for a share of the crop produced on the land.

These questions concern PLOTS that the household gave out to non-household members for sharecropping purposes, and the main decision maker for the contract. As in the previous questions concerning contractual arrangement, note the different forms of contract that could be applicable here. If the main decision maker is a member of the household, then select UP TO TWO from the list of household members those who made the sharecrop decisions in Q20, otherwise provide the other non-household members for making the decision in Q21.

Q19: How was the sharecropped out agreement established for this [PLOT]?

Q20 – Q24: IRRIGATION

This subsection concerns irrigation on PLOT. First, we explore whether the PLOT is irrigated (Q20), and the main source of water for irrigation on PLOT (Q21).

Next in **Q22**, we identify the different irrigation technologies that the household has adopted for irrigating PLOT this agricultural season 2016/2017. Please note the following definitions for the different technologies in this question:

A *treadle pump* is a low-cost, simple manual pump. It has two pistons placed side by side and a chain or rope which passes over a pulley that connects the two pistons together so that when one piston is pushed down, the other comes up. Each piston is connected to a treadle. A suction or intake pipe connects the pump to the water source. At the end of this pipe is a non-return valve that only allows water to enter the pipe and stops it from flowing back.

Motorized pumps are water lifting devices that are propelled by either diesel, petrol or electricity. An example of a motor pump is the radial flow pump commonly known as centrifugal pump.

Sprinkler irrigation is a way of applying irrigation that is similar to natural rainfall. It can be used on many crops, soils and geographic conditions.

Micro (drip) irrigation includes a number of technologies, where water is applied only to part of the field surface. It can save on water and improve crop yield. The costs of purchasing, operating and maintaining the equipment are high.

Q20: Is this [PLOT] irrigated?

Q21: What is the source of irrigation water on this [PLOT]?

Q22: What systems of irrigation are on this [PLOT]? List up to two.

Q23: Is the irrigation on [PLOT] year round. This seeks to establish possibility of farming during the dry season.

Q24: Who manages the irrigation system that is used on this [PLOT]? Here, we establish the management structure of the irrigation system on PLOT for the agricultural season 2016/2017. If the irrigation system is owned and managed by the household, then option *self/household managed* should be selected. A *farmer community* managed irrigation system is one that is owned by a farmer cooperative with which someone in the household is a member of the cooperative and therefore benefits from such irrigation structure. In some places, an organization or agency can setup irrigation structures for use by members of a particular community. In that case, the management of such irrigation facility is in the hands of such an *agency*. Finally, *community managed* irrigation facility is one that is owned and managed by the community, in which members of the community have access to that facility at low or no cost.

Q25 – Q27: SOIL TYPE AND QUALITY

Q25: What is the predominant soil type of this [PLOT] This question seeks for the type of soil predominantly found on [PLOT]. For **option 6 (other specify),** the response must be written out clearly in the subsequent sub-question, Q27_Oth.

 Note:

Sandy Soil – the soil is very porous to water with colour brown having tiny granite.

Clay Soil – the soil is heavy, muddy and thick when wet. It also looks brown/red in colour having capacity of retaining water. But the soil is very hard to dig during dry season.

Mainly mixture of sand and **clay** – the soil looks brownish in a mixture of sand and clay soil colours.

Forest Soil (rich clayey loam) – the soil is commonly found where forest grows.

Loamy Soil – the soil looks blackish in nature which is very fertile for agriculture. It is a mixture of sand, clay and silt with organic composition.

Q26: What is the soil quality of this [PLOT]? This is to find out the individual's subjective assessment of the quality of the soil on this [PLOT]. Read the list of options to the respondent and wait for a response.

Q27: What is the slope of this [PLOT]? The respondent should estimate the slope of the plot. Read the list of options to the respondent and wait for a response. If water does not readily drain from the plot, it is flat. Steep and hilly plots will be somewhat difficult to cultivate because of the slope. Note that many important farming areas of the country will not have any steep or even moderately steep slopes.

Q28 – Q35: EROSION AND CONSERVATION

Soil erosion is the wearing away of a fields top soil by the natural physical forces of water, wind or through forces associated with farming activities such as tillage.

Erosion control and conservation agriculture is important for optimal agricultural production. The objective of this subsection is to examine the erosion control measures that the household

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have in place to prevent such problems from occurring on PLOT. Moreover, the subsection identifies some of the water harvesting facilities that the household has in place for conducting such on PLOT. The cost implications of such erosion control and water harvesting structures are also explored.

Q28: Since the beginning of the agricultural season 2016/17, were there any problems with erosion on this [PLOT]?

Q29: What was the main cause of these erosion problems on [PLOT]?

Q30:   Have you invested in soil and water erosion control structures on this [PLOT]?

Q31: What erosion control facility is currently on this [PLOT]? List two main facilities.

Q32: When was the erosion control investment made for this [PLOT]?

Water harvesting definition
Water harvesting is the collection of runoff for productive purposes.

Q33:   Do you have water harvesting facility on this [PLOT]? *If No Skip to Q36*

Q34: What water harvesting facility is currently on this [PLOT]? Select a maximum of two.

Q35: When was the water harvesting investment made for this [PLOT]? Answer for the two facilities recorded in Q36.

36 – Q40: TREES

The presence of trees on PLOT or at the borders of PLOT can serve as an indication for the fertility level of the soil on PLOT. The questions in this sub-section serve to know whether trees are

currently growing on PLOT or along its borders, as well as the number of trees that were removed from PLOT during the past agricultural season.

Q36: Are there any trees on the border this [PLOT]?

Q37: What is the main tree species growing on the border of this [PLOT]?

Q38: How many trees were <u>REMOVED</u> in the <u>2015/16</u> agricultural season from this [PLOT]? (including those on the border).

Q39 – Q46: COVER CROPS AND CROP RESIDUES

This sub-section seeks information on crop residues and cover crops from previous agricultural season that were left on PLOT after harvest of the main crop. The use of crop residues and cover crops from previous agricultural season is also explored. Cover crops and residues on PLOT from previous agricultural season have implications for the proceeds expected from current agricultural season, and hence other agricultural outcomes.

Q39: Did you cultivate this [PLOT] during the <u>2015/16</u> agricultural season? Ask for the cultivation status of PLOT during the past agricultural season by the household or someone else. *If No Skip to Q45.*

Definition of a cover crop
Cover crops are crops grown during dry season or as intercrops to provide a soil cover, improve soil fertility and produce feed and food.

Q40: At the end of the previous agricultural season (before planting season for the 2016/2017 agricultural season), did you have cover crops remaining on the [PLOT]? *If No Skip to Q42.*

Q41: What type of cover crop was left on [PLOT] from the previous agricultural season? If more than one type of cover crop was left on PLOT, please record a maximum of three cover crops.

Q42: What did you do with the crop residues on this PLOT after the previous season's harvest?

Please note that **Q43 – Q44** concerns residues and not necessarily cover crops. Residues include crop parts that were left on PLOT after harvest.

Q43: In what month during the previous agricultural season (2015/2016) was crop residue burned. This question is asked only for those plots on which the residues were burned.

Q44, What fraction of the [PLOT] was covered by the residues after harvest? This question seeks for the proportion of the PLOT that was covered by the residues after the harvest of the previous agricultural season's output.

Q45 – Q49: LAND PREPARATION

Here we intend to explore additional soil conservation and agricultural practices that the household has undertaken on the applicable plots with respect to land preparation for the current agricultural season 2016/2017. The methods of land preparation and the means (in terms of implements used to conduct these activities) of preparing the land is explored. Moreover, we are able to establish whether the manager practices crop rotation or continuous cropping on PLOT, which has implications for productivity.

Q45: How did you prepare land for planting on [PLOT] for this agricultural season 2016/2017?

Q46: What implement did you use to prepare land for planting on [PLOT] during this agricultural season 2016/2017? List a maximum of two implements.

Q47: For how long have you been using the [PRACTICE MENTIONED in Q46] on this [PLOT]?

Q48: What crop did you plant on this [PLOT] in the agricultural season 2015/16? Record the crop code using the available crop codes.

Q49: What crop do you intend to plant on this [PLOT] in the agricultural season <u>2017/18</u>? The question tries to establish whether farmers are practicing crop rotation by asking their intention for the incoming season.

AG5: Agricultural Labour

The objective of this section is to collect information on agricultural labour for **land preparation and planting** this agricultural season 2016/2017. Please note that the agricultural labour information collected here covers only those used for land preparation and planting this agricultural season and not for any other activities. All other labour information will be collected during the second visit, post-harvest.

Here both household and hired labour (casual) information for land preparation and planting will be collected. For household labour, all household members 5 years and older who worked on PLOT for land preparation and planting will be selected, and then the relevant PLOT questions will be asked to the person. On the hired labour, we disaggregate it into men, women, and children under 15 years. In addition, we want to know if any of the hired labour used tractor services for land preparation this agricultural season, 2016/2017. Note that we are concerned with casual labour. Permanent labour information will be captured in a subsequent section.

Finally, we collect information on exchange labour or non-household members working on PLOT without pay. This type of labour activities can take two forms. First non-household members can come work on a household's PLOT in exchange for other services that the household might have rendered to these other households. Generally, a group of farmers agree to assist each other on their farms at different but agreed days and times. Second, other households can decide to come work on a household's PLOT for free (without pay) or to assist for no compensation.

Example
If a person works for two days in a week in a plot he or she is considered to have worked for a week. If a person works for two hours in a day in a plot he or she is considered to have worked for a day.

Q01: This question asks for the total number of household members aged 5 years and older who worked on PLOT this agricultural season 2016/2017 for **land preparation and planting**.

Q02a – Q02c: Get information on total number of weeks, days per week, and hours per day that each selected household member did the land preparation and planting activities on [PLOT].

In Q2a to 2c Ask,

A. Record the id codes from the household roster in the column for household roster identity.

B. Across how many weeks did [NAME] work on [PLOT] for land preparation and planting during this agricultural season 2016/2017?

C. During those weeks, approximately how many days did [NAME] work per week on [PLOT] for land preparation and planting?

D. During those days, approximately how many hours did [NAME] work per day on [PLOT] for land preparation and planting?

Record the information on work on each plot for each person. The questionnaire allows for up to 12 household members working on the individual plots. If for example three persons in a household worked in plot (one) in parcel (one) we expect information about the three members to be entered in the first three member columns.

Note:

Weeks should cover only weeks in this agricultural season 2016/2017. This can be a minimum of one (1) week.

Days should cover a minimum of one (1) to a maximum of seven days in a week.

Hours can be a minimum of one (1) to a maximum of Fourteen (14) hours in general per day.

*NOTE: It must be made clear to the respondent that the work time must be specific to each plot. We should avoid situations where the response seem to indicate that the respondent is working on multiple plots simultaneously which is impossible. Perhaps they might be working every day on two plots but spend 5 hours each day working on one plot and 5 hours each day on the other. This should **not** be recorded as 10 hours worked per day on both plots.*

*Again, it must also be made clear that the individual listed actually worked on the plot. We must avoid situations where respondents list their children as working full time on the plots; however the children only accompanied their parents to the field **but did not perform any land preparation and planting related work on PLOT**. In this case, the children should not be listed – only members that actually performed work on the plot.*

Q03: This is a filter question questions for hired labour. Hired labour are non-household members who work on the household's plot for pay. Note that here we are referring to hired casual labour instead of permanent labour. If the response to either of these questions is NO, then subsections HIRED CASUAL LABOUR and EXCHANGE LABOUR (NHIMBE) will be skipped.

Q04 – Q15 is about HIRED LABOR (casual) for land preparation and planting activities at different levels of disaggregation, this agricultural season 2016/2017. Record information for each plot on "the number of days, hours per day, payment per day, number of men hired to work" for hired casual labour. Similar questions are repeated for hired women, and children under 15 years. Note that Q04 – Q07 have been repeated in Q08 – Q11 and Q12 – Q15 for women (15 years and above) and children (under 15 years) respectively. Here we will be able to distinguish whether men, women and children under 15 are paid differently for performing same activities at same time.

Q04: Enquire for the total number of days that hired men (15 years and older) were involved in land preparation and planting activities on each PLOT during this agricultural season. Note that this question might be difficult to answer especially if the household hires different persons at different times. Please probe and help the respondent to estimate if need be.

Q05: Ask the number of hours that hired men usually work on PLOT in a day. Here again, probe for the hours that hired men usually spend on the PLOT in a day as this question might be difficult to answer. Moreover, be careful to refer to a particular PLOT especially if multiple persons are hired in a day and they spend different hours working on different PLOTs.

Q06: Ask how much is usually paid **per day** to **all men** hired for land preparation and planting for this agricultural season 2016/2017 in USD. This is how much the farmer usually pays per day to all the hired men.

> For example: On **Plot 1,** five men were hired for <u>7 days</u> and paid $100 per day **each,** then the TOTAL **DAILY** payment by the farmer is $500 (5 men X $100 per day). Therefore, 500 should be recorded for Q07.

> Another example: On **Plot 3,** three men were hired to work for a single day; the first was paid $50 the second $20 and the third $30. Then the amount to record in Q07 is **100.**

Q07: This question seeks information on the total number of hired *men* involved in the land preparation and planting activities on PLOT during this agricultural season. Please exclude permanent hired labour.

Q08 – Q11: Correspond to Questions 4 – 7 but refer instead to *women* (15 years or older). Refer to the notes Questions 4 – 7 above.

Q12 – Q15: Correspond to Questions 4 – 7 but refer instead to *children* (under 15 years old). Refer to the notes Questions 4 – 7 above.

Q16: This is a filter question for exchange labour. Exchange labour refers to non-household members working on PLOT without pay or in exchange for services rendered by the household.

Q17 – Q25 is about EXCHANGE LABOR for land preparation and planting activities at different levels of disaggregation for the 2016/2017 agricultural season. Note that **Q17 – Q19** have been repeated in Q20 – Q22 and Q23 – Q25 for women and children respectively.

Q17 – Q19: First, we want to know if any *men* from other households worked on PLOT *without pay* or in the form of *exchange labour* and establish the total number of men from other households that worked on PLOT without pay or in the form of exchange labour **(Q17)**.

Q17 Asks for the number of men (exchange labour) that worked on the plot without pay for land preparation and planting during the agricultural season 2016/17.

Q18 Establishes the number of days that men from other households worked on PLOT without pay for land preparation and planting this agricultural season 2016/2017. If exchange labour worked on PLOT at different days, please ask for the cumulative number of days.

Q19: Here we ask for the number of <u>hours</u> per day did men from other household **usually** work on PLOT without pay for land preparation and planting this agricultural season 2016/2017.

Questions 17 to Q19 on "number of persons, days and hours" are similarly asked for women in Q20 – Q22 and for children in Q23 – Q25.

Tractor Services and Animal Drawn Implements

Q26 – Q31: These questions concern the use of **tractor** services and **animal drawn implements** for **land preparation** this agricultural season 2016/2017. The source of the tractor services, and the total cost of the tractor services are also explored. We ask for the reasons, if any, why the household did not use tractor services for land preparation on PLOT this agricultural season 2016/2017. Given that households use animal drawn implements for land preparation, this section also concerns the use of these services as well as the cost incurred for this items on PLOT this agricultural season 2016/2017.

AG6: Field Crops

This section collects information on crops planted by the household in terms of the planted area and the expected output/sales. For the crops planted, the information is collected at the PARCEL, PLOT and CROP levels, while for the expected sales, the information is captured at the CROP level. The application has been designed in such a way that only crops indicated as planted will be activated under the expected sales subsection.

Planted Field Crops: a practice of growing plant/crops that has leaves and roots, especially one that is smaller than a tree e.g. Maize, Beans, Groundnut, Onion, etc.

RESPONDENT: *Should be someone who is knowledgeable about the farming activities of the household* preferably farmer, owner or manager of PLOT

Q01: Seeks for the cropping method employed to plant CROP on PLOT this agricultural season 2016/2017. Please note the following definitions for the different possible cropping methods:

MONO-CULTURE: is the agriculture practice of growing a single crop in a [PLOT] at a time

INTER-CROPPING: is the practice of sowing a fast growing crop with a slow growing crop so that the fast growing crop is harvested before the slow growing crop starts to mature e.g. Maize and Cowpeas.

Q02: For those crops that were intercropped, find out the percentage of the PLOT area that is planted with the [CROP] since this agricultural season 2016/2017. This is especially important when doing crop level productivity analysis, so as not to attribute the entire PLOT area to a given CROP while the CROP is not in a pure stand.

Q03 – Q05: These questions determine the timing of planting, which is important for productivity analysis. The time when the SEEDs for CROPs were planted on [PLOT] have implications for harvested area and also the total output obtained.

Q03 has two components – month and year of planting. Record month and year of planting. The year should be recorded as four digits.

In **Q04**, we want to know the respondent's personal assessment of the time of planting when the rain started. *Onset of the rain season is when there is adequate moisture to sustain germination of seeds in that area regardless of time rains fall.*

If the respondent feels he/she planted late at the onset of the rains this agricultural season, then **Q05** asks for the reasons why they planted late this agricultural season.

Q06: This question asks for the expected output of CROP to be harvested from PLOT this agricultural season 2016/2017. Please provide quantity and the UNIT of measurement. For the response "other specify" , then indicate the other UNIT used.

AG7: Seed Acquisition

Definitions of seeds

- **Hybrid seed** is seed produced by cross pollinated plants.

- **Certified seed** is one that has been approved for sale and planting by the appropriate seed certification authority such as the ministry of agriculture.

- **Improved seed** is seed that has some traits added to it by a farmer but not yet certified.

This section collects information on all SEEDS used for CROPS (field) that were planted on all PLOTs in a PARCEL for the 2016/2017 agricultural season. Please note the three roster levels. First we select the PARCEL, followed by PLOT and then the CROP. Once this is done, the rest of the questions will be asked to the respondent, who is preferably, the owner or manager of the PLOT, but also any person most knowledgeable about the household's farming operations can respond.

Note, however, that PURCHASED seed is captured at the CROP level instead of the PARCEL, PLOT and CROP levels. This is necessary to allow for easy collection of the PURCHASED seed information and minimize some of the complications that come with it.

First, all the possible crops cultivated in Zimbabwe have been listed together with their codes on the last page of the questionnaire as well as in the appendix to this manual. The interviewer should write the crop name and corresponding code for the CROP that is planted on PLOT within the respective PARCEL.

Q01: What type of planting material was used for [CROP] on [PLOT] since the beginning of this agricultural season 2016/2017? This is a filter question that asks whether any planting materials was planted (seed, tubers and cuttings) on the PLOT this agricultural season 2016/2017. The response categories are, seeds, cuttings and tubers. If no seed was used for CROP on PLOT this agricultural season, then the section ends for that CROP on PLOT, otherwise, the rest of the questions will be asked.

Q02 – Q04 is about the type of seed used on PLOT and whether or not the seed is certified by the appropriate certification authority. **Q02** asks whether the type of seed used or planted since the beginning of this agricultural season 2016/17 is hybrid, improved, traditional/local. A single answer is required and the interviewer is instructed to read the options to the respondent.

Q03 asks about whether the seed used for [CROP] on [PLOT] since the beginning of this agricultural season 2016/2017 was CERTIFIED or not.
This question is asked only for *hybrid* or *improved* seed.

Q04: **Ask**, What is the total quantity of [CROP] seeds used on this [PLOT] this agricultural season 2016/2017? The quantity is measured using different units of measurement are used both standard and non-standard measurement units. The measurement units are, kilograms, grams, gallons, cups, 50 kg bag, 90 kg bag, bagidhi (20 L bucket), small tswanda, medium tswanda, large tswanda and other specify.

SEEDS FROM PREVIOUS HARVEST/CARRY-OVER SEEDS

Q05 – Q08: These questions concern seeds from PREVIOUS HARVEST or CARRY OVER and the rationale for using such seeds.
Q05 Ask, Did you use any <u>SEEDS FROM PREVIOUS HARVEST</u> or any <u>CARRY-OVER SEEDS</u> for [CROP] on this [PLOT]? This is a yes and no question. Since it is a common practice for households to keep seeds from previous harvests for subsequent use in planting, it is important that we explore seeds from this source.

 Q06 What was the quantity of the <u>SEED FROM PREVIOUS HARVEST</u> for [CROP] that you used on [PLOT] this agricultural season 2016/2017? In this question, we ask for the quantity of the seed used from precious harvest, and the UNIT of measurement is to be specified.

Q07. Ask, Why did you choose to use the <u>SEED FROM PREVIOUS HARVEST</u> <u>OR</u> <u>CARRYOVER</u> SEED for [CROP] that you used on [PLOT] this agricultural season 2016/2017? This question requires information on, the rationale behind the household's decision to use of seeds

from previous harvest or carryover seed for planting this agricultural season. The various response categories explain the reasons for using seed from previous harvest or carryover seed.

Free Seed

Questions Q8–Q12, solicit information on seeds used on PLOT that are obtained for FREE irrespective of the source.

Q08. Ask, Did you use any <u>FREE SEED</u> for [CROP] on this [PLOT]? Again this is a yes and no question.

Q09. Ask, What was the quantity of the <u>FREE SEED</u> for [CROP] used on [PLOT] this agricultural season 2016/2017? This question asks for the quantity of the seed used that is obtained for free, and the UNIT of measurement is specified both for standard and nonstandard measurement units.

Q10. What was the main source of this <u>FREE SEED</u> for [CROP] used on [PLOT] this agricultural season 2016/2017? The main source of the free seed that is used on PLOT is solicited in this question. The response categories include; Government/Extension Officers, NGOs, Agricultural Input Dealer, Fellow Farmer, and Other Specify.

Q11. Did you receive this <u>FREE SEED</u> used for [CROP] on [PLOT] this agricultural season 2016/2017 as part of the following government programs? Choose all that apply from the following; Presidential Input Support Program, Vulnerable Input Support Program and Other (specify).

Q12. Ask, What was the main mode of transportation used to bring the <u>FREE SEED</u> for [CROP] on [PLOT] since the beginning of the agricultural season 2016/2017? This question solicits information on the main means of transporting the free seeds to the farm/plot is asked in **Q10**.

AG 8: Purchased Seeds

Q01 – Q12: These questions are meant to capture information on seeds that the household **purchased** for use on PLOT this agricultural season 2016/2017. Recall that the information collected here is at the CROP level rather than PARCEL and PLOT levels.

Q01 Ask, Did you purchase any of the seeds for [CROP] that you used this agricultural season 2016/2017? This is a yes and no question.

Q02. Ask , What was the quantity of the purchased seed for [crop] that you used this agricultural season 2016/2017? We ask for the quantity of the purchased seed that the household purchased for CROP, and the UNIT of measurement both standard and none standard units.

Q03.Ask, What was the value in USD of the <u>PURCHASED SEED</u> that you used for [CROP] since the beginning of the agricultural season 2016/2017? The **total value** of **purchased seed** purchased for CROP since the beginning of this agricultural season 2016/2017 is captured.

Q04 to **Q08** solicit information on the financing of the purchased seed for the current agricultural season.

In Q04 Ask, Did any household member pay for these purchased seeds? **Q04** is a filter question, establishing whether the person(s) who financed the purchases (are) member(s) of the household.

Q05. Who in the household paid for this <u>PURCHASED SEED</u> used for [CROP] this agricultural season 2016/2017? If a household member financed the purchases either fully or partially, then we want to know this person in **Q05**. Specify person identity from the household roster and list up to two household members.

Q06. Ask, Which other non-household member(s) paid for the purchased seeds used for [CROP] this agricultural season 2016/2017? The response categories are; spouse living elsewhere, relative, non-relative and none.

Q07 Ask, How did you finance this <u>PURCHASED SEED</u> used for [CROP] this agricultural season 2016/2017? The response categories are, paid in full with own funds, purchased on credit/loan, part own funds, part on credit/loan and paid in kind.

Q08 Ask, How much did you pay up-front for this <u>PURCHASED SEED</u> that you used for [CROP] this agricultural season 2016/2017? This information should be provided for both cash and in kind payment. Place a zero if nothing was paid.

Q09. Ask, Where did you buy most of the <u>PURCHASED SEED</u> for [CROP] that you used since the beginning of this agricultural season 2016/2017? The information on the place of purchase should be indicated such as fellow farmer, from relatives, from agro input dealers, government extension office, farmer organization or co-operatives, retail shops and other (specify).

Q10 Ask, What is the distance from the farm to the place where the seed for [CROP] was bought for this agricultural season 2016/2017? Distance is measured in kilometres. *If the distance is given in metres, please convert metres to Km to up to decimal places. 1000 metres is equivalent to one KM.*

Q11. Ask, What was the main mode of transportation used to bring the <u>PURCHASED SEED</u> of [CROP] for use since the beginning of the agricultural season 2016/2017? The response categories include, on foot, wheelbarrow, own bicycle/animal cart/push cart, motor bike, own/relative car, truck/bus/minibus, boat and other specify.

Q12.Ask How much did you pay for transportation in total to acquire the PURCHASED SEED used for [CROP] since the beginning of the agricultural season 2016/2017? This question captures the total amount of money used for transportation costs for seeds. INCLUDE ALL TRIPS FROM AND BACK TO YOUR FARM. This information refers to all CROPS and not specific to one crop.

AG9: Expected Sales for Field Crops

Q01 – Q03: This block of questions concerns expected SALES of the field CROP planted on PLOT. In addition, the interviewer should be careful asking these questions since they refer to a future occurrence. It may be difficult for respondents to answer these questions, but encourage them to provide their best estimates.

Q01: This is a filter question about the household's expected decision to sell CROP harvested this agricultural season. Note that this question concerns individual CROPS harvested from different PLOTS. It does not link CROPS to PARCELS and PLOTS. Note that this is a hypothetical question, the response of which will not necessarily be tantamount to the actual future decision of the household.

Q02: Seeks to find out how much the respondent intend to sell of the expected harvest of [CROP]. Record quantity and select the appropriate unit of measurement.

Q03: This question is about how much revenue you expect to receive from the anticipated CROP sales in USD. Note that this is not expected profit, but instead total expected value of sales.

AG10: Tree/Permanent Crops

This section collects information on tree/permanent crops currently cultivated by the household. The information is captured at the household CROP level, without making reference to any particular PARCEL or PLOT.

Planting Tree Crops: can be described as perennial or permanent crops that generate income for many years. Examples of these tree crops are Tea, Coffee, Lemon, Orange, Cashew, etc. Many tree crops can last over one hundred years and even be inherited from generation to generation.

Q01: Which TREE/PERMANENT crops does your household cultivates? This question allows the respondent to provide the list of tree/permanent crops that household currently grows, regardless of the number of trees on holding.

Q02: Are the trees part of a [TREE/PERMANENT CROP] orchard or plantation? This is a filter question to distinguish plantation/orchards from tree crops that are growing individually on a PLOT or PARCEL. If the tree/permanent CROP is part of a plantation or orchard, then we will be interested in such things as the area, total number of trees and expected output and sales.

Q03: What was the total land area of covered by the [TREE/PERMANENT CROP] orchard/plantation? This question is asked for orchard/plantations only. Record the QUANTITY and select the appropriate UNIT from the listed options. For Example, if the farmer has 50 acres of oranges in his orchard, then 50 will be entered under QUANTITY and ACRES will be selected under UNIT.

Q04: How many plants/trees for the [TREE/PERMANENT CROP] do you have? We are interested in knowing how many plants/trees (TREE/PERMANENT CROP) the individual owns irrespective of the year in which it was planted. The number of plants/trees should be written. You can help the respondent quantify the number of plants/trees.
IF THE FARMER DOES NOT KNOW, RECORD '999'.
Q05: In what year were most of these [TREE/PERMANENT CROP] planted on [PLOT]. The answer should be printed in four digits as in previous similar questions.

Q06: How many [TREE/PERMANENT CROP] were planted since the beginning of this agricultural season 2016/2017? This is concerned with the number of plants/trees planted by the household since the beginning of this agricultural season 2016/2017.

Q07: What was the last completed (Harvest) production period for the [TREE/PERMANENT CROP] This question concerns the most recent **completed** production cycle for the TREE/PERMANENT CROPS. Record the start and end month and year should be in four digits.

Q08: Were there any losses of [TREE/PERMANENT CROPS] before the last completed harvest? Recorded in **Q07.** *If No Skip to Q10.*

Q09: What was the main cause of loss of the [TREE/PERMANENT CROPS]?

Q10: How much [TREE/PERMANENT CROP] did you harvest during the last completed harvest production period? Record the QUANTITY and UNIT code from the production codes provided.

AG11: PERMANENT HIRED LABOUR

Definition of Permanent Labour: **r**efers to persons whose services are utilised regularly and continuously during the agricultural season for agricultural activities on the holding for a period Not less than six months.

The objective of this section is to collect information on permanent hired agricultural labour that the household has this agricultural season 2016/2017. Permanent hired labour are non-household members who are permanently hired to work on the household's plot or to care for the household's livestock for pay. Their work agreement might not have a specific termination period and does not depend on seasonality of agricultural activities unlike casual labour discussed in AG5. Moreover, permanent labour should have been employed at least SIX MONTHS prior to the interview date

Please note that our focus here is agricultural labour and it is different from person(s) who is (are) hired by the household to perform primarily its domestic tasks, such as cooking, cleaning, etc.

Q01: Asks whether the household has hired anybody permanently to work on crop and livestock activities this agricultural season 2016/2017. If the household has no permanent hired labour, then the section ends; otherwise, the rest of the questions will be answered.

Q02: This question seeks for the total number of hired men the household has since the beginning of this agricultural season. If none, record zero (0).

Q03: Given that the household has men worker(s), the question asks how much the household usually pays per month to all men hired for the agricultural activities this agricultural season 2016/2017 in USD. This is the total amount the household usually pays per month to all the hired men.

➢ For example: There are five men are hired and paid $200 per month each, then the TOTAL MONTHLY payment by the household is $1000 (5 men X $200 per month). Therefore, 1000 should be recorded for Q03.

➢ Another example: There are three men are hired to work; the first is paid $250 the second $200 and the third $150. Then the amount to record in Q03 is $600.

Q04 –Q06, Q09-Q11 and Q14-Q16 are questions that seek to estimate how much of the hired labour's work time is spent on various activities in terms of share of their total work time. Note that these questions might be difficult to answer especially if the household hires persons to perform multiple tasks simultaneously. Please probe and help the respondent to estimate if need be. The questions ask about the share of work time dedicated to crop farming activities and about the share of work time dedicated to livestock production activities. If the hired labour work on any tasks other than crop and livestock activities, for example collecting firewood and fetching water record the share of such activities in respective questions for men, women, and children. Note that the total of the percentages should not exceed 100% but can be less than 100%.

Q04. Ask, What is the percentage of time that Men spent working on farming activities?

Q05. Ask, What is the percentage of time that MEN spent working on livestock production activities.

Q06. Ask, What is the percentage of time that MEN spent working on other activities such as collecting firewood, fetching water, etc?

Q07- **Q11**: Correspond to Q02 – 06 but refer instead to women. Refer to the notes Q02 – 06 above.

Q12 – **Q16**: Correspond to Q02 – 06 but refer instead to children below 15 years. Refer to the notes Q02 – 06 above.

AG12: Animal Holdings

In this section, all information about animal holdings and production of the household is collected. Animal holdings mean animal(s) owned by a person or jointly owned with another member of the household. Note that the reference period for this section is **1ˢᵗ of January to 31ˢᵗ of December 2016**. Please do not confuse the reference period here with that of the previous sections.

RESPONDENT: This section should be asked to the most knowledgeable member of the household for example the Owner or caretaker of animals.

Q01: Ask whether a member of the household raised or owned any of the listed ANIMALS. **ASK FOR ALL ANIMALS FIRST COLUMN-WISE BEFORE MOVING TO NEXT QUESTION**. **AFTER COMPLETING QUESTION 1 COLUMNWISE, THE REST OF THE QUESTIONS MUST BE COMPLETED ROW-WISE.**

Note:
o   **CALF:** This is a male or female cattle less than 1 year old.
o   **HEIFER /TSIRU/TOKAZI/ITHOKAZI:** This is a female cattle over one year and has not yet given birth.
o   **COW/MHOU/INKOMOKAZI:** This is mature adult female cattle that has given birth.
o   **STEER/ JON'OSI /IJONGOSI:** This is a male cattle over one year which has been castrated.
o   **BULL/BHURU/HANDIRA/INKUNZI/:** This is a male cattle over one year which has not been castrated.

Q02: If an ANIMAL was selected in Q01, ask for the number of [ANIMAL] owned by the household on 1 January 2016, either at farm or away and record it.

Q03: Ask the number of ANIMALS the household owned on December 31, 2016 and record it.

Q04: This question seeks the current market value of **one** of the [ANIMAL]. Though there are of different ages and sizes of the [ANIMAL], we are interested in the average sale value of the [ANIMAL]. Record the amount in USD e.g. **300.**

Q05: Ask for the person (s) in the household that is responsible for keeping the [ANIMAL]. Again, select UP TO TWO persons from the list of household names displayed for [ANIMAL]. Record '97' in the first column if it is non-household member.

Q06: Ask for the number of [ANIMAL] born between 1 January to 31 December 2016. If none, record zero (0) and proceed to Q08. This question is asked only for *young ones*. Consider all live births including those that died soon after birth

Q07: Ask for the average number of [ANIMAL] born per litter or brood between 1January and 31 December 2016. This question is asked only for young ones of pigs, rabbits and chickens (*piglets, bunnies and chicks)*.

Q08: Ask for the number of batches of broilers reared at the same time from 1 January 2016 to 31 December 2016. If zero (0), skip to question 10

Q09: Ask for the number/quantity of broilers produced/reared at one time (batch) between 1 January 2016 to 31 December 2016

Q10: Enquire for the number of [ANIMAL] *received* as **gifts** between 1 January to 31 December 2016. If none, record zero (0) and proceed to the next question.

Q11: Ask for the number of [ANIMAL] *received* as **payment for services rendered** between 1 January to 31 December, 2016. If none, record zero (0) and proceed to the next question.

Q12: Ask for the number of [ANIMAL] bought to be raise between 1 January to 31 December 2016. If none, record zero (0) and proceed to next ANIMAL.

Q13: Ask for the total value of the purchased [ANIMAL] between 1 January to 31 December 2016. Record the total amount in USD for both cash and in-kind payments. Estimate the value of payments in-kind for purchases.

Q14: Ask for the number of [ANIMAL] that were *given out* as **gifts** between 1 January to 31 December 2016. If none, record zero (0).

Q15: Ask for the number of [ANIMALS] that were *given out* as **payment for services received** between 1 January to 31 December 2016. If none, record zero (0).

Q16: Asks for the number of [ANIMAL] that were lost or stolen between 1 January to 31 December 2016. If none, record zero (0).

Q17: Ask for the number of [ANIMAL] that were *given out* as **payment for bride price (LOBOLA)** between 1 January to 31 December 2016. If none, record zero (0).

Q18: Ask for the number of [ANIMAL] sold **alive** between 1 January to 31 December 2016. If none, record zero (0) and proceed to the next question.

Q19: Determine the total value of sales of live [ANIMAL] between 1 January to 31 December 2016. Record the total amount in USD for both cash and in-kind payments. Estimate the value of payments in-kind for sales.

Total value = number of animal sold **multiplied by** unit price.

Q20: Ask whether or not the household slaughtered any [ANIMAL] between 1 January to 31 December 2016. This question is not asked for *young animals*.

Q21: Given that the household slaughtered [ANIMAL], this question seeks the number of [ANIMAL] slaughtered between January 1 to December 31 2016. Separate the number of animals slaughtered for **sale**, for household **consumption** and both for **sale and** household **consumption**. Record responses of number of any slaughtered animals under the appropriate columns. If none, record zero (0).

Q22: This question determines whether or not any [ANIMAL] died due to predation, diseases, injury, drought, etc. between 1 January to 31 December 2016. Predation is defined as the act of killing and eating of one animal by the other e.g lion, hyenas, leopards, eagles etc killing and eating livestock

Q23: If the response is 'yes' in Q22, ask for the number of [ANIMAL] that died between 1 January to 31 December 2016 due to each cause. Record the number of died [ANIMAL] due to PREDATION in **Q23A**. Record the number of died [ANIMAL] due to DISEASES in **Q23B**. Record the number of died [ANIMAL] due to INJURY in **Q23C**. Record the number of died [ANIMAL] due to DROUGHT in **Q23D**. Record the number of died [ANIMAL] due to OTHERS in **Q23E**.

AG13: Animal Cost, Production Systems and Pasture

This section captures information on pasture, cost of raising animals and the production system employed. Note that some animals are aggregated here compared to animals listed in AG13 – large ruminants, small ruminants, pigs, other poultry and rabbits. Please ensure that you ask the questions at these aggregated levels to solicit the correct response. Information on the household's ownership of pasture is collected, as well as household's use of vaccines.

RESPONDENT: This section should be asked to a knowledgeable member of the household e.g. Owner or caretaker of animals

AG 13A PASTURE

Q01 - **Q03:** These questions ask about ownership of pasture land for raising livestock between 1 January to 31 December 2016. **Q01** asks if the household grazed any livestock between January 1, 2016 and December 31, 2016?. Record the response as "Yes" or "No". If NO, **skip** to next section. Otherwise, continue with Q02.

Q02 Asks if the household owned any pasture land for raising livestock between 1 January 2016 and 31December 2016?. Record the response as "Yes" or "No". If NO, **skip** to Q04.

Q03 Ask for the total pasture land area that the household owned for raising livestock between January 1, 2016 and December 31, 2016? Record the total area in ACRES, Hectares or Square Metres.

Q04 Asks whether the size of the pasture land owned by the household for raising livestock between 1 January 2016 and 31 December 2016 was enough?. Record the response as "Yes" or "No". Note that these questions are not specific to any one ANIMAL GROUP.

Q04: Ask where the livestock usually grazed between 1 January 2016 and 31 December 2016?. The possible pastures are displayed and you are to select one. Pasture that is not listed should be recorded in other specify. Again, note that this question is not specific to any one ANIMAL GROUP.

SECTION 13B: ANIMAL COSTS & PRODUCTION SYSTEMS

ASK FOR EACH ANIMAL GROUP THAT HOUSEHOLD OWNED BETWEEN 1 JANUARY 2016 – 31 DECEMBER 2016, AND THEN MOVE TO QUESTION 2

Q01: Ask whether a member of the household made any expenses to raise any of the listed animals between 1 January to 31 December 2016.

Q02: Ask who in the household owned the [ANIMAL] between 1 January 2016 and 31 December 2016? List at most two people who owned the highest number of [ANIMAL] per Animal Group.

Q03 - Q110: These questions seek the amount spent between January to December 2016 to raise [ANIMAL GROUP] for different cost items. Record the total amount in USD for both cash and in-kind payments for each expense item paid to raise [ANIMAL GROUP]. Respondents should estimate the value of expenses paid in-kind in USD.

Q03 Ask for the amount of money spent on **animal feed including salt**.

Q04 Asks for the amount of money spent on **vet services including vaccination, deworming, and medicine**.

Q05 Ask for the amount of money spent on **transport of animal to farm**.

Q06 Ask for the amount of money spent on **maintenance of pens and stables**.

Q07 Ask for the amount of money spent on **transport of animal feed**.

Q08 Ask for the amount of money spent on **commission on sale of animals**. Commission also includes, veterinary permits, police clearance and Rural District Council levies.

Q09 asks for the amount of money spent on **compensation for damages caused by animals** e.g. livestock feeding on neighbour's crop

Q10 asks for the amount of money spent on **other related costs to raise each listed animals**.

PRODUCTION SYSTEM

Q11: This question asks about the main production system used to raise [ANIMAL GROUP] between January 1 to December 31 2016. The possible production systems are displayed and you are to select one.

Q12 - **Q13:** These questions ask about dipping done for any [ANIMAL GROUP] between 1 January and 31 December 2016. These questions are asked only for *cattle* and *goat/sheep*.

Q12 Ask whether dipping was done for [ANIMAL GROUP]. Record the response as "Yes" or "No". If it's a 'No' skip to question 14

Q13 Ask whether the dipping was enough for raising [ANIMAL GROUP].

Dipping sessions - Cattle are dipped once a week in summer and once in two weeks in winter

Examples of Dipping methods are:

- The **plunge dip** - the animal is completely immersed in the dipping compound.
- **Spray races -** the animal walks through a race where it is sprayed with the dipping compound
- **Hand spraying** - the dipping compound is applied to each animal with a hand-operated spray
- **Hand dressing or spot treatment** involves treating the sites where ticks commonly occur. Tick grease, oil or dipping compound can be used.
- **Pour-ons** are dipping compounds which are applied on the back of the animal. They are easy to use, but can be expensive compared to other options.
- **Injectable compounds** - they are injected into the animal and they work through the blood.

Q14 How many of your [ANIMAL GROUP] were vaccinated between 1 January 2016 and 31 December 2016? If none, record '0' and go to the next animal group. Separate the number of *adult animals* vaccinated and the number of *young animals (calves, chicks, kids, piglets, bunnies)* vaccinated. If none, record zero (0).

Q15: Ask for the main diseases the animals were vaccinated against. Select UP TO THREE types of disease from the list. Disease that is not listed should be recorded in other specify.

Q16 Ask for the total amount of money spent on hired labour for all livestock related activities between 1 January 2016 and 31 December 2016?

AG14: Agriculture Product and By-product

ASK FOR ALL ITEMS BEFORE MOVING ON TO NEXT QUESTION

RESPONDENT: This section should be asked to a knowledgeable member of the household e.g. Owner or caretaker of animals

Q01 Ask whether any member of the household produced any [PRODUCT] from your farm and/or livestock between 1 January and 31 December 2016. Ask for all items before moving on to next question

Q02: Ask for the number of months between January to December 2016 that the household produced the [BY- PRODUCT]. Record the number of the months. E.g. for three months, record **3**. The response should <u>never</u> be more than 12 (it can only be 12 or less).

Q03a: Ask for the average monthly production of [BY- PRODUCT] between 1 January to 31 December 2016. Record the **<u>average</u>** quantity **<u>per month</u>** in **Q3a** and select the corresponding unit code.

Q03b. Ask, for the total quantity of [BY-PRODUCT] collected during these months indicated in Q2?

Q04: Ask whether or not the household sold [BY- PRODUCT] between 1 January to 31 December 2016. Record the response as "Yes" or "No". If the household made any sales, proceed to the next question. If no sales of the [BY- PRODUCT] were made between 1 January to 31 December 2016, skip to Q10 for *honey*; otherwise skip to the next [BY- PRODUCT].

Q05: Ask for the quantity of [BY- PRODUCT] sold between 1 January to 31 December 2016. Record the total quantity and the appropriate unit from the list.

Q06: Ask for the total value of sales of [BY-PRODUCT] between 1 January to 31 December 2016. Record the total amount in USD after adding cash amounts and estimated value of in-kind payments.

Q07: We are interested in the distance from the dwelling of the household (farm gate) to the place where most of the [BY-PRODUCT] was sold. The distance should be recorded to the nearest kilometres.

Q08: Ask which member(s) of the household was responsible for taking [BY-PRODUCT] to the market and negotiating sales. Here the list of members of the household will be displayed and the interviewer is supposed to select UP TO TWO applicable member(s) from this list.

Q09: Ask which member(s) of the household makes decisions on the use of earnings from [BY-PRODUCT] sales. Here the list of members of the household will be displayed and the interviewer is supposed to select UP TO TWO applicable member(s) from this list.

Q10 - Q11: These questions are asked only for bee keeping between 1 January to 31 December 2016.

Q10 Asks about the number of beehives owned by the household. Select the appropriate type from the list.

Q11 Asks for the number of beehives the household has for producing honey.

See pictures of the three types of beehives.

Picture 1: Kenyan Top Bar Bee Hive

Picture 2. Traditional Bee Hive

Picture 3: Langstroth Bee Hive

Q12. Ask for the number of beehives that were colonised between January 1, and 31 December, 2016.

Q13 Seeks the number of times the household harvested honey between January 1, and 31 December, 2016.

AG13: Agricultural Capital

This section captures information on the agricultural capital possessed by the farming household. The possession include tractor, plough, trailer, planter, sprayer, etc., and are important in measuring farming household welfare and standards of living. It is also important to determine how advanced the capacity for agricultural production of the household is.

Respondent: The main respondent is the head of the household and/or an adult household member currently living in the household.

FOR QUESTION 1, ASK FOR ALL CAPITAL ITEMS COLUMN-WISE THE REST THE QUESTIONS ROW-WISE.

Q01: Ask whether any member of the household owned or used any of the listed [ITEM] since the beginning of this agricultural season 2016/2017. Record the response as "Yes" or "No" against each listed items. Items(s) owned that is/are not listed should be recorded in other specify. For others specify, be sure to provide the description of the item.

Q02: Ask for the person(s) in the household who USED [ITEM] in the household since the beginning of this agricultural season 2016/2017 regardless of ownership. LIST UP TO THREE applicable member(s) in order of frequency of use.

RECORD '97' IN THE FIRST COLUMN IF USED BY ALL HOUSEHOLD MEMBERS

RECORD '98' IN THE FIRST COLUMN IF NO ONE USED CAPITAL ITEMS.

Q03: This question seeks to determine the number of working [ITEM] that are *owned* by the farming household AT THE BEGINNING of this agricultural season 2016/2017. If the household owns none, record zero (0) go to question 5.
NOTE: The item must be in good working condition. If the item is not functioning, it should be excluded.

Q04: This question seeks to determine the period of time IN YEARS that the household has been in possession of the item. If the item was purchased less than past 12 months ago, then record zero (0).

- IF MORE THAN ONE, CONSIDER THE NEWEST
- IF LESS THAN ONE YEAR, RECORD '0'
- IF DON'T KNOW, RECORD '99'

Q05: This question seeks to determine whether or not the farming household has *obtained* any [ITEM] since the beginning of this agricultural season 2016/2017.

If 'NO' go to question 7a

Q06: This question seeks to determine the number of [ITEM] that were *acquired* by the farming household since the beginning of this agricultural season 2016/2017.

Q07A: If the response in question 3 is Zero (0), select 'yes' and skip to question 12. If 'No' proceed to the next question.

Q07B: Who is (are) the person(s) that own(s) this [ITEM]?

- RECORD '97' IN THE FIRST COLUMN IF OWNED BY ALL HOUSEHOLD MEMBERS
- RECORD ID FROM HH ROSTER
- LIST UP TO 4 PERSONS

Q08: Ask the respondent how much they would receive if they <u>sold one of ITEM in its current state</u>.
NOTE: This question refers to the value of a SINGLE UNIT OF ITEM. That is, if the household owns 3 ploughs, the current sale value of A SINGLE plough should be reported. If the household

owns more than one of a particular item, the current sale value of THE NEWEST ITEM should be reported.

Q09: This question seeks to determine whether or not the farming household has *disposed* any [ITEM] since the beginning of this agricultural season 2016/2017. If NO, skip to Q12. Otherwise, continue with Q10.

Q10: Ask the number of [ITEM] that have been *disposed* by the farming household since the beginning of this agricultural season 2016/2017.

Q11: Determine the total value received for [ITEM]. Record the total amount in USD. Add cash amounts and estimated value of in-kind payments.

Q12: This question seeks to determine whether or not the farming household has *rented in* any [ITEM] since the beginning of this agricultural season 2016/2017. If NO, skip to Q16. Otherwise, continue with Q13.

Q13: Ask the number of [ITEM] that are *rented in* by the farming household since the beginning of this agricultural season 2016/2017.

Q14: Ask the number of days the household *rented in* [ITEM]. Record the response IN DAYS.

Q15: Determine the total value paid by the household to *rent in* [ITEM]. Record the amount in USD. Add cash amounts and estimated value of in-kind payments.

Q16: This question seeks to determine whether or not the farming household has *rented out* any [ITEM] since the beginning of this agricultural season 2016/2017. Record the response as "Yes" or "No". If NO, skip to NEXT ITEM. Otherwise, continue with Q16.

Q17: Ask the number of [ITEM] that are *rented out* by the farming household since the beginning of this agricultural season 2016/2017.

Q18: Record the total value received by the household by *renting out* [ITEM] since the beginning of this agricultural season 2016/2017. Record the amount in USD. Add cash amounts and estimated value of in-kind payments.

Q19: Ask the number of days the household *rented out* [ITEM] since the beginning of this agricultural season 2016/2017. Record the response IN DAYS.

Section 16: Food Security

In addition to food consumption information collected in the main PICES, we would like to know more about the coping strategies implemented by households and food access for the past twelve months. This section is divided into two main categories, the coping strategy index and food access. The Coping Strategy Index enumerates all consumption-related coping strategies commonly used by a population. Four general categories of coping strategies are measured as shown below:

a) Dietary change (e.g. eating less preferred but less expensive food etc.);

b) Increasing short-term food access (borrowing, gifts, wild foods, consuming seed stock etc.);

c) Decreasing numbers of people to feed (short-term migration etc.);and

d) Rationing strategies (mothers prioritising children/men, limiting portion size, skipping meals, skipping eating for whole days etc.

Respondent: Individual primarily responsible for the preparation of food
Direct Informants: Individual primarily responsible for the preparation of food
At the beginning of this section, a reminder to the respondent concerning the objective of the survey may be necessary. The respondents may be thinking that exaggerating answers may enable them to receive a certain service/product as to have a positive impact on their living standards.

Q01: The question is divided into parts (a) to (j) and the interviewer is to enter in each of the cases the interviewer should provide a YES/NO answer. A YES response should be provided even if only one member of the household experience the case in the past 30 days**.** Conversely, a NO response should be provided if no one in the household experience the specified case.

Q02: This question asks whether a household consistently consumes same meals every day. The question further wishes to know whether under five children eat the same number of meals compared to those above 5 years. As such, if all the members of the household consume the same number of meals every day then both columns will have the same number, while the opposite will

be true if the household members have different number of meals a day served to individuals in different age categories.

Q03: This question asked whether a household has been faced with a situation when it did not have enough food to feed its members in the last 12 months.

Q04: The months in the year in which the situation referred to in question 3 are displayed under this question and the interviewer is to select all the months mentioned by the respondent when the household has been faced with the situation when it did not have enough food to feed the household.

Q05: The possible causes of the situation referred to in question 3 are displayed in a box to the right of the page and you are to record UP TO THREE in order of importance as per the respondent ranking. e.g. if floods/water logging is the most possible cause, select FLOODS/WATER LOGGING as the first reason; inadequate household food stocks due to lack of farm input, option INADEQUATE HOUSEHOLD FOOD STOCKS DUE TO LACK OF FARM INPUTS should be select as second reason; and food in the market was very expensive, FOOD IN THE MARKET WAS VERY EXPENSIVE must be selected as the third reason.

Section 17: Dietary diversity

In addition to food consumption information collected in the main PICES and the level of household food security explored in section 16, we would like to know the level of household dietary quality. The series of questions will be asked to determine that certain foods/food groups were eaten by the members of the household. This helps us to see whether or not the household has an access to a variety of foods and whether or not its members have an adequate nutrient intake. The food items/groups listed in this section can be categorized into 9 main food groups: cereals, starchy tubers and roots; legumes and nuts; meat, fish, poultry and eggs; vegetables (including green leaves); fruit; oils and fats; milk and dairy products; and sugar/sweets. Data is collected on the number of days in the last 7 days a household ate specific food items. A seven day recall period is used to make the Food Consumption Score as precise as possible and reduce recall bias.

Q01 - **Q02:** Ask the number of meals taken by the members of the household who are aged 5 years and above yesterday and record the number in **Q01**. Follow up by asking if this number is the usual number of meals taken by these members per day and record the response in **Q02**.

Q03 - **Q04**: Ask the number of days that the members of the household consumed any sadza, mahewu, maize, maize porridge, rice, sorghum, millet, pasta, bread or other cereals IN THE PAST 7 DAYS and record the number in **Q03**. Note that the number cannot exceed 7 here. If none, record zero (0). Given that someone in the household consumed any sadza, mahewu, maize, maize porridge, rice, sorghum, millet, pasta, bread or other cereals, ask whether it was consumed YESTERDAY in **Q04**.

Note that Q03-Q04 are repeated as the following:

Q05 - **Q06** for consumption of potatoes, sweet potatoes, yams, plantains, cassava, or any other type of tuber

Q07 - **Q08** for consumption of beans, peas, groundnuts, peanut butter or cashew nuts

Q09 - **Q10** for consumption of vegetables (leaves or root)

Q11 - **Q12** for consumption of <u>fruits</u>

Q13 - **Q14** for consumption of <u>beef, goat, pork, chicken, rabbit, game</u>

Q15 - **Q16** for consumption of <u>eggs</u>

Q17 - **Q18** for consumption of <u>fish/kapenta</u>

Q19 - **Q20** for consumption of <u>milk, yogurt or any other dairy products</u>

Q21 - **Q22** for consumption of <u>sugar, honey, soda, juice, candy, or any other sugary foods or drinks</u>

Q23 - **Q24** for consumption of <u>oils, fats, margarine or butter added to food or used for cooking</u>

Q25 - **Q26** for consumption of <u>tea, coffee, salt, any type of spice, or tomato sauce (condiments).</u>

SECTION 18: USE RIGHTS

This section applies to small scale commercial farms only and it ids to be asked THE HEAD OF HOUSEHOLD. This section concerns Landholding owned by the household, and whether the household has the right to dispose off the Land or use it as collateral without external resistance. Please note that in Zimbabwe the land tenure system allows use of land as bankable collateral security in Small Scale Commercial Farming Sector.

Q01: Ask if the farmer owns any land in the Small Scale Commercial Farming Sector. The response categories are yes and no. If "no" GO TO NEXT SECTION. If yes proceed to ask the questions on collateral security.

Q02. Ask the farmer if they personally have the right to sell the landholding. Given that the main respondent for each landholding should be the owner/manager, this question is addressed directly to the respondent, asking whether or not he/she has the right to sell the landholding.

Q03: Ask if the farmer has ever used the land holding as collateral security.
Note: *Collateral Security refers to something of value given or pledged as surety for payment of a loan, a negotiation, bond etc. if there would be disappointment in fulfilment. E.g. you took a loan of 2000 USD from a deposit bank and submitted the Certificate of Ownership of your landholding as collateral security in case the loan cannot be repaid as agreed. If yes go to Q05.*

Q04: Ask if the farmer personally has the right to use this landholding as collateral. This question solicits for information to determine if the respondent has the right to personally use the landholding as collateral. The response categories are yes or no.

Q05: Ask the farmer if anyone-else in the household has the right to sell the landholding or use it as collateral
If No skip to Q7

Q06: Ask the farmer who-else in the household has the right to sell this landholding or use it as collateral. Select UP TO THREE applicable members from the household roster.

Q07: Ask the farmer which non household member(s) have the right to sell the landholding or use it as collateral. Select from the list provided. i.e. spouse living elsewhere, relative, and none.

Q08: Ask the farmer how much they would be prepared to pay for their landholding if they were to sell it today. This question seeks for the current value of the landholding and the amount must be recorded in USD e.g. $**450. 00.**

AG16: Contact Information

This section collects contact information of the household in case we need to contact the household in the future, in particular during the post-harvest.

Q01: Ask for telephone number of adult members of the household. Here the list of members of the household will be displayed and the interviewer is supposed to select UP TO TWO applicable member(s) from this list. Select the first member and record his/her phone number in

Q1a. Select the second member (if there is any) and record his/her phone number in **Q1b**.

NB: Where possible ask for contact information of TWO non-household members, (this section is optional if the respondent is willing to give the contact information).

Q02: Ask for contact information of TWO non-household members who would most likely know the household's location if the household were to move away in the next few months. Write the name of the 1st reference person in **Q02A1**, enter his/her relationship to the head of the household in **Q02A2**, record his/her phone number in **Q02A3**, and enter his/her location/address in **Q02A4**.

Note that **Q02B1-Q02B4** are repeated for the 2nd reference person.

APPENDIX A: AREA MEASUREMENT USING A GPS

When the plots are identified and a sketch map is drawn where possible, the plots are to be measured using a GPS, named Garmin eTrex Legend HCx. For each plot to be measured, you **MUST** use the sketch map for orientation. You **MUST** mark your starting point with a stick and walk clockwise along the perimeter (outline) of each plot 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 **SQUARE METERS**. You should then record the results in the questionnaire with TWO decimals.

A GPS uses the information from satellites to find the geographical position on the earth surface by longitude and latitude. 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. You **MUST** take the batteries out of the GPS when it is not in use. 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 ¼ round (= 90°) and carefully removing the rubber-lid. You close it by turning the handle clockwise ¼ round.

The GPS has five buttons, including one double button. We are mostly going to use only four of them. The GPS has two buttons on the right side, the **START** button, marked with a light bulb and the **BACKWARDS** button, marked with a cross in a box.

The GPS has two buttons on the left side, one of these is the **DOUBLE** button, marked with arrowheads pointing up and down. The other is the **MENU** button, marked with a notepad. On the front side of the unit, there is the round, rubber **POINTING** button. The **POINTING** button can be pressed in or moved around to left, right, up and down. All other buttons are only to be pressed in.

Instructions for Using the GPS for Finding the Geographical Coordinates of a Plot

Proceed to the starting point, which should be the starting corner of the plot you will measure.

Switch on the GPS by pushing and holding the **START** (marked with a bulb) button for up to 2-3 seconds or until you hear a beep or see a picture on the screen.

The GPS will then seek to acquire satellite signals and this may take up to 3 minutes. Following the acquisition of the satellite signals, the screen will display a sketch map with a triangle showing your location.

Open the menu by pressing the **MENU** (marked with a notepad) button twice. One push will give a simple menu and a second push will give the full menu.

Use the **POINTING** button to move between the various menu-icons to the **MARK**-icon and push the **POINTING** button in to open the *Mark Waypoint* page. There, you will be able to read your location in south and east coordinates.

Record the south coordinate and east coordinate on the appropriate plot roster. 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.

Press the **MENU** button twice to arrive back at the main menu and ready to do other tasks.

Instructions for Using the GPS for Measuring the Area of a Plot

You may measure the area just after taking the location.

Go to the starting point which should be a corner of the plot you will measure and mark the starting point by fixing a stick in the ground.

Switch on the GPS by pushing and holding the **START** key (marked with a bulb) for up to 2-3 seconds or until you hear a beep or see a screen picture.

The GPS will then seek to acquire satellite signals and this may take up to 3 minutes. Following the acquisition of the satellite signals, the screen will display a sketch map with a triangle showing your location.
Open the menu by pressing the **MENU** (marked with a notepad) button twice. One push will give a simple menu and a second push will give the full menu.

Use the **POINTING** button to move between the various menu-icons to the **TRACKS**-icon and push the **POINTING** button in to open the *Track Log Page.*

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 push the **POINTING** button in to open the *Area Calculation Page*.

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.

You start the area calculation by pressing the **POINTING** button. Subsequently, the text at the bottom of the screen will read *Stop*. 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 just started the area calculation.

You are to start the area 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. You **MUST** walk on the edge of the field (NOT a meter outside the field). At every corner, you **MUST** stop for 5 seconds (counting slowly 1001, 1002, 1003, 1004, and 1005) and then continue walking. You **MUST** walk all the way around the plot or parcel until you have returned to the location of the marking stick, with the GPS facing the direction in which it started the area calculation.

Check that the text below the screen still reads *Stop*. If the text does read **Start Calculation**, it means that you failed to push the **POINTING** button properly when you started. If you read Save **Calculated Track**, it means that you pushed in the **POINTING** button while you were walking. In both cases you will need to repeat the measurement by starting over again.

If the screen reads *Stop*, you may stop the measurement by pushing in the **POINTING** button and the 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 appropriate plot roster. **RECORD THE AREA IN SQUARE METERS AS IT APPEARS AT THE BOTTOM OF THE GPS.**

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. By using the **POINTING** button, you should go to (highlight) OK and push in the **Pointing** button. You will now get the sketch map on the screen with the text *Start* at the bottom of the screen, which will enable to start the next area measurement.

You **MUST** measure the area of each plot with the GPS at least twice to get a consistent value and confirm that the rotation around the plot has been completed properly.

If you lose the right position with the GPS system/menu, you are always able to back track to the main menu by pressing the **MENU** button twice. Once there, you can use the **POINTING** button to select the **TRACKS**-icon, and repeat area measurement-related steps specified above.

You switch off the GPS by pressing the START button for at least 2-3 seconds or until the screen light disappears.

Instructions for other GPS functions needed from time to time

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

1. Having a look of the track you have recorded and area measured.

2. Cleaning the stored tracks. 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.

3. Making sure to set the screen to low light in order to save batteries.

<u>**Having a look at your track**</u>

Go to the main menu by pressing the **MENU** button twice. Move to the **TRACKS**-icon and push in the **POINTING** button.

You will then open the *Tracks Log Page*. Use the **POINTING** button to move to the saved track you want to open and push in the **POINTING** button. Information for the selected track will be shown on the screen.

Use the **POINTING** button to move to the *Map Field* and push in the **POINTING** button. The map of your track will be shown at the screen and you can verify that you walked correctly.

Move back to the main menu by pressing the **MENU** button twice.

Cleaning the storage of tracks

Go to the main menu by pressing the **MENU** button twice. Move to the **TRACKS**-icon and push in the **POINTING** button.

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 Fields*. Press the **POINTING** button to erase all tracks that you have saved, including the area measurements.

Move back to the main menu by pressing the **MENU** button twice.

Set screen light to low in order to save battery

Switch on the GPS by pressing the **START** button. While the GPS is locating the satellites, press the **START** button once more and a light meter will appear. Press the **START** button again for the light to get brighter and the light meter to go one step up. Press the **START** button several times until the light meter goes down to the lowest level. Leave the GPS alone for one minute and the light meter will disappear. The light is now at the lowest level to save battery capacity.

Appendix B: Age Determination Table for the period 1 January – 31 December 2017

First Three Digits Of The Year	The age of somebody born in an identified year if his/her birthday is on or before the survey date, is the figure in the top left of a given box; if the birthday is after the survey date, the lower figure applies.									
	0	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
191	-	-	-	-	-	-	-	-	-	97
192	97 / 96	96 / 95	95 / 94	94 / 93	93 / 92	92 / 91	91 / 90	90 / 89	89 / 88	88 / 87
193	87 / 86	86 / 85	85 / 84	84 / 83	83 / 82	82 / 81	81 / 80	80 / 79	79 / 78	78 / 77
194	77 / 76	76 / 75	75 / 74	74 / 73	73 / 72	72 / 71	71 / 70	70 / 69	69 / 68	68 / 67
195	67 / 66	66 / 65	65 / 64	64 / 63	63 / 62	62 / 61	61 / 60	60 / 59	59 / 58	58 / 57
196	57 / 56	56 / 55	55 / 54	54 / 53	53 / 52	52 / 51	51 / 50	50 / 49	49 / 48	48 / 47
197	47 / 46	46 / 45	45 / 44	44 / 43	43 / 42	42 / 41	41 / 40	40 / 39	39 / 38	38 / 37
198	37 / 36	36 / 35	35 / 34	34 / 33	33 / 32	32 / 31	31 / 30	30 / 29	29 / 28	28 / 27
199	27 / 26	26 / 25	25 / 24	24 / 23	23 / 22	22 / 2 1	21 / 20	20 / 19	19 / 18	18 / 17
200	17 / 16	16 / 15	15 / 14	14 / 13	13 / 12	12 / 11	11 / 10	10 / 09	09 / 08	08 / 07
201	07 / 06	06 / 05	05 / 04	04 / 03	03 / 02	02 / 01	01 / 00	00		