REPUBLIC OF ZAMBIA

LIVESTOCK AND AQUACULTURE CENSUS - 2017

2016/2017 AGRICULTURAL SEASON

(Household)

INTERVIEWER'S INSTRUCTION MANUAL

Central Statistical Office
Ministry of Fisheries and Livestock

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CHAPTER 1: INTRODUCTION

Background and Purpose

Zambia's agriculture sector mainly comprises crop, livestock and fish production. Much of the comprehensive information that is available regarding the performance of the sector is on crop production. There has been very scanty and irregular information on the actual contribution of livestock, fisheries as well as honey to the national economy. The Government of Zambia through the Central Statistical Office (CSO) undertakes various types of censuses and sample surveys to produce detailed official statistics on various sectors including the agriculture sector. With respect to the agricultural sector, about two large agricultural surveys have been conducted since independence. The first one was done in the 1970/1971 agricultural season whereas the second was undertaken in the 1991/1992 agricultural season. Both Censuses were undertaken on a large sample basis using sampling frames derived from the immediate past Population and Housing Censuses. Thus, sampling frames derived from the 1969 and 1990 Population and Housing Censuses were used to sample Enumeration Areas (EAs) for Agriculture surveys undertaken in subsequent years.

It should be noted that these two agricultural surveys generated comprehensive fisheries and livestock statistics for Zambia. From 1992 until now- 2017 there has been no comprehensive agricultural survey and hence no comprehensive livestock, fisheries and honey production statistics available to properly inform agricultural policy formulation and development programming. Further, it should be noted that the available Livestock and fisheries statistics are extracted from the Post-Harvest Survey (PHS) every year. However the PHS does not give comprehensive livestock statistics due to the following reasons:

- The sampling frame used is tailored to crops and thus the majority of households interviewed are crop producing and not livestock keeping. This makes the livestock statistics extracted from the PHS unreliable and incomplete, and

- The Multistage sample design methodology that the PHS uses does not provide for a known and Equal Probability of Selection Method (EPSEM) for well-established livestock and fish farmers since these farmers constitute a rare population; hence the PHS samples may not be fully EPSEM in respect to livestock and fish farmers.

In the face of scanty and incomprehensive Livestock statistics for over twenty-five years now, there is a need to conduct a Livestock Census in order to facilitate effective policy formulation and implementation in the sector.

Justification

As explained in the background, the general situation as far as Livestock, fisheries and honey statistics are concerned is that there is no reliable and consistent data base. The existing statistics are scanty, unreliable and irregular. The unreliable livestock, fisheries and honey statistics, though indicative, are more likely to misinform policy formulation and programming, and can result in wrong or inadequate interventions in the fisheries and livestock sub-sectors. Thus, a need has arisen to generate reliable and accurate baseline information on livestock and fisheries production through conducting a large scale comprehensive livestock and fisheries sample survey. There is need to use internationally

accepted statistical methodologies such as the ones promoted by the FAO to generate useful statistics on livestock, fisheries and honey production in Zambia.
It is envisaged that results of the livestock and fisheries survey will in turn help in measuring the true contribution of livestock and fisheries production to the Zambian economy. Results of the 2017 survey will be validated by the results from the 2020 census of housing and population, which will include few questions on livestock and fisheries production.

Objectives

The agricultural sector in Zambia contributes a very significant proportion to the Gross Domestic Product (GDP). According to the 2010 Re-based GDP estimates, agriculture including Livestock contributes about Ten percent (10 %) to total GDP per annum. 'Guess' estimates indicate that Livestock contributes about Thirty-five percent (35 %) to agriculture GDP. A lot of transformations and developments have taken place in the Livestock sub-sector since 1991/1992 when the livestock and fisheries agricultural survey was last conducted thus prompting the government to update benchmark economic indicators in the Livestock and fisheries sub-sector. The following objectives will be achieved by conducting a large sample survey of Livestock and fisheries;

- Provide comprehensive benchmark data on the Livestock and fisheries sector of the economy which will include a complete and comprehensive list of farmers categorised by small, medium and large scale.

- Measure the Gross Value Added (GVA) and other indicators of the Livestock and fisheries, as well as their contribution to the economy.

- Strengthen the data generation capacity of the Central Statistical Office and Policy, Planning and Information Department (PPID) in the Ministry of Livestock and Fisheries in the area of Livestock and fisheries Statistics.

- Enhance the analytical capacity of staff at the CSO and Ministry of Fisheries and Livestock through training of staff in Livestock Statistics, Livestock Economics, Sample Survey Design and Management.

- Provide a quasi-sampling frame for use in subsequent and regular annual Livestock and fisheries surveys. This frame will nonetheless be updated using detailed information from the 2020 census of housing and population.

- Provide information which can be used to update the Farmers' Register.

- Provide statistics which can be used to determine the deficit or surplus status of the different types of livestock raised in Zambia, and

- Provide a basis for determining the export potential of the country with regard to livestock and fish products.

Methodology

Coverage and Target Population

The proposed 2017 Livestock and Aquaculture Census will cover all household population in both rural and urban parts of Zambia that are engaged in livestock, fisheries and honey production on a sample basis. The design for the survey calls for a representative probability sample that is large enough to produce reliable estimates at national, province, rural and urban, and district levels. Overall, a representative probability sample of at least 250,000 households will be covered from 2,062 Enumeration Areas (EAs). Specifically, this sample size will ensure that the survey results can be relied upon to make generalizations at national, provincial, location (Rural/urban) and district levels. The results of this survey will be validated during the Census 2020, which shall include a few questions on livestock, fisheries and honey production.

Sample Design Specification

Ultimate cluster sampling method was be used in the selection of the sample. This means that clusters or EAs were be selected and covered on 100% basis. The advantage of this is that the cost of listing the households in order to draw a sample at second stage is cut. The method is also appropriate for covering of rare characteristics of the population because of covering a larger sample. Ultimately, the probability of finding Livestock-raising, and fish farming households is increased.

During the selection of clusters, 2010 census information was be used to stratify EAs by agricultural activity (livestock raising or fish farming). This was be done in order to ensure that all areas where live-stock raising is the predominant activity are well represented in the survey. This approach is similar to what is done in the crop forecast and post-harvest surveys where certain crops are identified for special attention in the sampling frame because of their importance and localized geographic distribution in order to ensure their representativeness in the sample.

Survey instruments

Each enumerator will be provided with the following:-

(a) Survey questionnaires
(b) Pencils and erasers
(c) A pencil sharpener/razor blade
(d) A notebook
(e) T-shirt
(f) A map of your work area
(g) Stickers
(h) Samsung Tablet with accessories
(i) A letter of introduction
(j) Carrier bag
(l) Power bank

CHAPTER 2: DUTIES AND PERFORMANCE OF INTERVIEWERS

IMPORTANCE OF YOUR WORK AS AN ENUMERATOR

The livestock and aquaculture census is an important national undertaking. As an Enumerator, your work is of great significance in the chain of events, and your responsibility is heavy. Without your conscientious attention to detail and a sense of devotion, it will not be possible to conduct the census successfully.
The data you will collect from respondents will be processed using the most appropriate information technology. As an original data collector, the quality of information to be derived from this data is very much dependent on what you collect from the respondents. After the data has been collected and found to be erroneous at the processing stage, it is not only an expensive venture to go back and make corrections from the source but could prove to be impossible, since the original respondents may no longer be at the location you visited. It is, therefore, important to note that your position is a very important one.

LEGAL POWERS

The livestock and aquaculture census is being carried out under the provisions of the Census and Statistics Act, Chapter 127 of the Laws of Zambia. All people residing in Zambia, except foreign diplomats accredited to Zambia (i.e. only those attached to Embassies and High Commissions), are required by this Act to provide the necessary information. However, willing co-operation of the people is most important if the Census is to be a success. You must show great courtesy so that you can get the co-operation of the people. Sometimes you may come across some persons who may be reluctant to be enumerated. When every effort to persuade them to provide the necessary information has failed, and they persist in refusing to answer questions, then the matter should be reported to your Supervisor. Do not take the law into your own hands by threatening people with possible prosecution.

CONFIDENTIALITY OF CENSUS INFORMATION

You and all other Census officials are required to take an Oath of Secrecy, in the presence of a Magistrate or a Commissioner for Oaths. If it is found that anyone has shown the Census documents, or in any other way has disclosed the information contained in them to any unauthorised person, he/she will be liable to prosecution under the Census and Statistics Act, Chapter 127 of the Laws of Zambia. In the course of your work, do not leave the Census questionnaires issued to you in any place where an unauthorised person may have access to them.

As an interviewer, it is your responsibility to **keep completely confidential** anything you learn and observe during an interview. Never disclose any facts about anyone you interview to any unauthorized person(s) outside the survey process. Respondents should be told that the data they provide will be used for statistical purposes only.

Things You Must Do

- You must read and intensively study your manual to become thoroughly familiar with its contents in order to do your work efficiently.
- You must introduce yourself on every visit and explain to the respondent the reason of your visit before starting the interview.
- You must ask the questions in exactly the same way to each respondent and in the same order in which they are presented in the questionnaire. This will enable the interviews to be comparable. The question order needs to be standard from respondent to respondent.
- You must make every effort to write legibly, and keep the documents you are working on clean and free from damage.
- You must attend to all 'call-backs' as early as possible, and must be punctual in keeping all appointments.

You are solely responsible for all documents issued to you in connection with the survey, and you must ensure that they are secure at all times. Remember that absolutely no one not employed and sworn-in by CSO/MFL to work on this survey can be allowed to see the information you collect, nor must you discuss such information with anyone.

Things You Must Not Do

- You must not solicit or permit any unauthorized person to assist you with your census work. No matter how intelligent they are, they will not have had the training you have or the authority to participate in interviewing.
- You must not combine census work with any canvassing for personal gain, church, political party or any other organization.
- You must **NEVER** become involved in religious or political discussions while you are on the job.

List of Basic Duties and Responsibilities

You, the interviewer, are the key to the success of the survey. You alone have direct influence on the accuracy of the data collected. Since it is more practical and economical to concentrate on collecting accurate data than correcting inaccurate data after collection, you must make every effort to become familiar with this census and follow its instructions carefully.
It will be of utmost importance that you:

- Attend the training course and all other scheduled meetings.
- Study this manual very carefully and remember the main points that are explained here.
- Become fully familiar with the questionnaire.
- Complete all the data collection activities as required.
- Review each completed questionnaire for accuracy and completeness.
- Submit completed questionnaires to your Supervisor as promptly as possible.
- Enumerate all the Households in the EA.
- Ensure that all survey materials are looked after properly and returned to the supervisor after the survey exercise is over.

- Perform any other Survey related functions which the supervisor may assign from time to time.
- Keep all data received strictly confidential.

At times you will find that the actual situation in the field will make your job somewhat difficult. For example, your tablet may have no or low charge temporarily. It is very important that you do not allow these obstacles to stand in your approach to this job. You should seek common-sense solutions to the kind of difficulties you are sure to encounter. Ensure the tablet is fully charged all the time or carry a power bank
It will be up to you to find temporary solutions to the problems you face until a more permanent solution is found.

Timeliness of the submission of questionnaires

Prompt submission of the completed questionnaires is absolutely crucial for monitoring progress, backing-up data files and timely processing. The value of the data for planning and decision-making is directly related to its timeliness.

Census Reference Period

The reference period for this exercise will be from 1st October, 2016 to the survey date except for Crop and Fodder production where the past agriculture season (1st October, 2016 to 30th September, 2017) shall be the reference period.

CHAPTER 3: GENERAL INTERVIEWING PROCEDURES

Preparing for the interview

There are four important steps that must be taken before you visit the household.

Reviewing the Interviewer's Manual
This includes reviewing the general interviewing procedures, the specific field procedures and the question-by-question instructions.

Reviewing the Questions on the Survey Questionnaire
Before you begin interviewing, practice using the questionnaire to build up your confidence. A successful interview requires an interviewer who fully understands the survey questionnaire and can use it easily and correctly. Losing your place, shuffling papers etc., can disturb the person being interviewed.

Organizing Survey Materials
Be sure you know what survey materials you need and that you have them with you before going into the field to interview.

Appearance and Behaviour
The first thing a respondent notices about the interviewer is his/her appearance. It is important to create a good impression by being polite, neat and courteous.

Establishing a good working relationship

A comfortable relationship between the interviewer and the respondent is the foundation for good interviewing. The person's impression of you during your visit will largely determine the atmosphere during the interview. If you seem bored, uninterested or hostile, the respondent will probably act in a similar way.
Remember that persons tend to react favourably if they think the interviewer is someone they will enjoy talking to. This means that you have to impress the respondent as being someone who is friendly and understanding. Through your behaviour you can create an atmosphere in which the respondent can talk freely.

Using the survey questionnaire and asking the questions

The goal of the interview is to collect accurate data by using the questionnaire and following standard interviewing practices. To reach this goal, the interviewer needs to understand the survey questionnaire, including how to ask the questions, how to follow the instructions in the questionnaire and how to identify the various types of questions.
When asking the questions, observe the following rules:

Remaining Neutral
You must maintain a neutral attitude with the respondent. You must be careful that nothing in your words or manner implies criticism, surprise, approval, or disapproval of either the questions asked or the respondent's answers.

You can put respondents at ease with a relaxed approach and gain their confidence. The respondent's answers to the questions should be obtained with as little influence as possible by the interviewer. Another interviewer should be able to obtain the same answers as you would have obtained.

The questions are all carefully worded to be neutral. They do not suggest that any answer is preferable to another. When a respondent gives an ambiguous answer, never assume what the respondent means by saying something like `Oh, I see, I suppose you mean... is that right?' If you do this, very often the respondent will agree with your interpretation, even though it is not correct.

Asking Questions in the Order Presented

Never change the order of the questions in the questionnaire. The questions follow one another in a logical sequence, to change that sequence could alter the intention of the question. Asking a question out of sequence can affect the answers you receive later in the interview.

Asking Questions as Worded

Do not change the question. Each question must be asked in exactly the same way to each respondent. If the respondent does not seem to understand the question, simply repeat it. If it is clear that a respondent does not understand a question after you have repeated it using the original language, you can rephrase it in simpler or colloquial language. However, you must be careful not to alter the question.

Sometimes, respondents will ask you to define words in a question or explain some part of a question. When this occurs, refer to the `General concepts and definitions' in Chapter 4 of this manual where all the important words and terms are defined.

Avoid Showing the Questions to the Respondent

Respondents can be influenced by knowing what questions are coming next or by seeing the answer categories that are not asked together with the questions.

Instructions in the questionnaire

In addition to the questions you must ask, the questionnaire also contains instructions for you the interviewer. These instructions must be followed closely as they are there to enable you to use the questionnaire correctly.

'Skip' Instructions

`Skip' instructions usually are written out. You must follow the `Skip' instructions with care, so that you do not skip questions, which should have been asked. Likewise, it is important that you skip to the correct question when necessary. If you are careless, you may skip some questions incorrectly and miss some essential questions. When questions are not asked because of a `Skip' instruction, leave the response boxes blank. The questionnaire has a good example of an important skip pattern.

EXAMPLE: Question LP14 on page 2.

INTERVIEWER: Did this livestock type suffer from any disease between 1st October, 2016 and now?

1 = Yes

2 = No →skip to LP18B.

Question-specific Instructions

In addition, there are `question-specific' instructions for you in the questionnaire. These instructions usually alert you to a consistency check that has to be made at the time of the interview, or tell you how to record an answer. All these instructions are in **bold** and ***italicized***. E.g. the statement in LSD04 (page 1) 'Enumerator: ask for all persons born in 2005 or before (12 years and above)' is an instruction to you.

Probing

Probing and Why It Is Necessary

Probing is the technique of questioning by the interviewer to obtain a full, complete and relevant answer. An answer is probed whenever it is not meaningful or is incomplete, that is when it does not adequately answer the question.

In everyday social conversation, people normally speak in vague and loose terms. Therefore, it is understandable that respondents may at first answer questions in a way, which is not clear or specific. It is essential, however, to encourage respondents to express themselves more precisely and in very specific terms.

Respondents sometimes miss the point of a question. They will provide an answer of a kind but they do not answer the question. It is easy to be misled by a respondent who is talkative and gives a detailed response which is beside the point and irrelevant. In most cases, respondents give an irrelevant answer because they have missed an important word or phrase in the question. Sometimes respondents will think that they are answering a question when all they are doing is simply repeating an answer, which was already given, or repeating parts of the answer. A respondent can talk a great deal and still be merely repeating the already given answer in different words. Probing therefore, has two major functions:

- To motivate respondents to expand upon or clarify their answers;
- To make the respondent answer precisely so that irrelevant and unnecessary information can be eliminated.

Probing must be done without introducing bias or antagonizing the respondent. Respondents must never be made to feel that you are probing because their answer is incorrect or unacceptable.

Understanding the Intention of the Questions

The kind of probe to use must be adapted to the particular respondent and the particular answer given. There are some general types of probes that are frequently used but the most important point is to avoid getting into the habit of using the same

probe. Instead, you must seek to understand what the intention of each question is, so that you will always know in what way a particular answer falls short of being satisfactory. The probe, then, should be devised to meeting this gap. This will require skill, tact and persistence.

Neutral Probing Methods

It is always very important to use neutral probes. By `neutral', we mean that you must not imply to the respondent that you expect a particular answer or that you are dissatisfied with an answer. The reason for probing is to motivate the respondent to answer fully or precisely without introducing bias. Bias is the distortion of responses caused by the interviewer favouring one answer to another.

EXAMPLE of a biased probe: Question LP02 (page 2, Table 2.1)

LP02: How many cattle were raised on 1st October, 2016?
ANSWER: 80 or 90 cattle.

IMPROPER PROBE: Oh, you mean 90 cattle?
(This improper probe is pushing the respondent to say 90 cattle when it may be 80 cattle)

PROPER PROBE: Was it 80 or 90 cattle?

Some respondents have difficulty putting their thoughts into words. Others may give unclear or incomplete answers; still others may be reluctant to reveal their attitudes. You must deal with such factors and use procedures that encourage and clarify responses. The following kinds of probes might help you obtain more accurate responses.

Repeat the Question

When the respondent does not seem to understand the question, when he/she misinterprets it, unable to make up his/her mind, strays from the subject, the most useful technique is to repeat the question.

An Expectant Pause

The simplest way to convey to a respondent that you know he has begun to answer the question, but that you feel he/she has more to say, is to be silent. A pause - often accompanied by an expectant look or a nod of the head - gives the respondent time to gather his/her thoughts.

Repeating the Respondent's Reply

Simply repeating what the respondent has said as soon as he/she has stopped is often an excellent probe.

Neutral Questions or Comments

Neutral questions or comments are frequently used to obtain unbiased, clearer and complete responses. The following are examples of the most commonly used probes:

Repeat question
Anything else?
Any other reason?
Any other?
Could you tell me more about your thinking on that?
Would you tell me what you think?
What do you mean?
Why do you feel that way?
Which would be closer to the way you feel?
These probes indicate that the interviewer is interested and they make a direct request for more information.

Asking For Further Clarification

In probing, it will sometimes be useful to appear slightly puzzled by the respondent's answer and indicate with your probe that it might be you who failed to understand. For example, `I am not quite sure I understand what you mean by that - could you please tell me a little more?' This technique can arouse the respondent's desire to co-operate with someone he/she thinks is trying to do a good job.

It should not be overplayed however; otherwise the respondent will get the feeling that you do not know when a question is properly answered. Occasionally, a respondent will give an `I don't know' answer.

This can mean a number of things. For instance:

The respondent does not understand the question and answers `I don't know' to avoid saying he/she does not understand.

The respondent is thinking the question over and says `I don't know' in order to fill the silence and to give himself time to think.

The respondent may be trying to evade the issue, or he/she may feel that the question is too personal and does not want to hurt the feelings of the interviewer by saying so in a direct manner.

The respondent really may not know, or may not have an opinion or attitude on the subject.

Try to decide which of the above the case is. Do not immediately settle for an `I don't know' reply. If you sit quietly, but expectantly - the respondent will usually think of something to say. Silence and waiting are frequently your best probes for an `I don't know' answer. You will also find that other useful probes are, "well, what do you think?' or `I just want your own ideas on that'. If you feel that the respondent has answered `I don't know' because he/she was afraid of admitting ignorance, you should say that there are no right or wrong answers to the questions and that you just want the respondent's answer or opinion.

Likewise, if you think the respondent says `I don't know' because a question is too personal, you should remind the respondent that the survey information is confidential.

Always probe at least once to obtain a response to an "I don't know" before accepting it as the final answer, but be careful not to antagonize the respondent or force an answer if he/she says `I don't know' again.

When to Stop Probing

You should stop probing when you have a clear and relevant answer. However, if at any time the respondent becomes irritated or annoyed, stop probing that question. We do not want the respondent to refuse to complete the rest of the interview.

Controlling the Interview

While it is important to maintain a pleasant and courteous manner in order to obtain the respondent's co-operation, you must also be able to control the interview so that it may be completed in a timely and orderly fashion. For example, when answering questions, the respondent may offer a lengthy explanation of problems or complaints. In this situation, you must be able to bring the discussion to a close as soon as possible so that the interview may continue. Politely, tell the respondent that you understand what he/she is saying but that you would like to complete the interview. If necessary, you may try to postpone any outside discussion by saying `Please, let's finish this interview first and we can talk about that later'.

In some cases, the respondent may start to provide information about some aspect of his/her farm that is covered at a later time during the interview. Again, you must control the interview by telling the respondent that you must ask other questions first and that he should wait until later to provide information on that particular aspect.

Recording the Answers

Asking the questions correctly and obtaining clear answers is only part of your job. Equally important is recording the answers given by the respondents.

Legibility

All the entries you make in the questionnaire must be legible. If your Supervisor cannot read an entry, the questionnaire/s will be returned to you for correction thereby wasting more time.

All responses that require written words should be clearly printed in block letters rather than script. All numbers should be clearly written so that one number is not confused with another. Remember that the numbers will be used in both hand and computer calculations. If they are not legible, mistakes will be made in hand calculations and in entering the numbers for computer processing.
There are basically two types of responses required in the questionnaire i.e., writing words and recording numbers

Writing words

In some cases, you are required to write in the questionnaire; this may be the name of the head of the household, the village/locality name, or comments concerning the problems encountered.

To avoid the difficulty of reading script, you should print all words in block letters.

Recording numbers

Special care must be taken when entering numerical responses because they will be used in calculations and some will be key-punched directly from the questionnaire for computer processing. Special care should be taken with some numbers such as a '1' and a `7', a `4' and a `7', or an `8' and a `9', which can be misinterpreted.

Interviewer comments/calculations

The only kinds of entries that should be made in the spaces provided for answers are names or numbers. If any other notes or explanations are necessary or if you must do some arithmetic, use the spaces around the table or below the questions. Do not make any comments or calculations inside a space provided for an answer. If you require more space for comments/ calculations, use any available space on the page with reference to the item number on which the comments/calculations are being made. The use of the spaces around the table for comments or calculations is very important.

If you have any problems of any kind in obtaining the information that is required, make a note explaining it in the open space available on that page.

An important phrase to remember is `When in doubt, write it out'. If you cannot understand what a respondent means, write out his response in the open space. This will be of great use to your Supervisor and to office staff in trying to resolve any problems in the questionnaire. Any arithmetic should also be done in the open space. When making a comment in the open space, always indicate the question to which the comment relates. If there are several parts to the question such as 1.1, 1.2, etc., be sure to indicate the part also of the question referred to.

Ending the interview

After all the questions have been asked, thank the respondent and mention that his or her co-operation has been most helpful in providing the information for the survey. Also inform the respondent that you may possibly be returning to collect more information.

CHAPTER 4: GENERAL CONCEPTS AND DEFINITIONS

The country is divided into 106 Districts. Each District is divided into Census Supervisory Areas (CSAs), and each CSA into Standard Enumeration Areas (SEAs). Each SEA is so defined that the number of people in the area will approximately range from 300 to 500 in rural areas and from 600 to 800 in urban areas. In this regard, there will be about 2062 Standard Enumeration Areas for the purposes of this survey.

STANDARD ENUMERATION AREA (SEA)

It is a geographical area assigned to an enumerator for the purpose of conducting a census or survey count. It is usually demarcated just before the census of population and housing taking in to account the workload an enumerator is expected to cover. This is given a one digit code. Note that due to the time that has elapsed from the last census of population and housing, these areas are no longer standard.

Working as a group you will be assigned an enumeration area in which you will do the enumeration work for the Census. Your Supervisor will assign this area to you as a group and will also provide you with a map or a sketch showing boundaries of your enumeration area and explain major features of this area in order for you to properly identify the boundaries. For you to cover your area in an orderly manner, you must follow the instructions given by your Supervisor carefully.

Since the co-operation of the people is an essential factor in the success of the Census, your Supervisor will sometimes introduce you to the local, traditional and political leaders and other influential persons in the area to solicit their co-operation.

Census Supervisory Area (CSA):

This is a grouping of standard enumeration areas and is meant to be assigned to one supervisor during census enumeration. It is designed to comprise two to three SEA's in rural areas and three to five SEA's in urban. It is given a two digit code e.g. CSA 01, 02 or 20.

HOUSEHOLD

For the purposes of the Census, a household is defined as "a group of persons who normally live and eat together". These people may or may not be related by blood, but make common provision for food or other essentials for living and they have only one person whom they all regard as head of the household. Such people are called members of the household if they normally live and eat together even if they do not sleep under one roof. There could also be situations where people live under one roof but have separate cooking and eating arrangements. Such persons should be considered as separate households. There can also be a one member household where a person makes provision for his/her own food or other essentials for living. Such a person is the head of his/her household.

Shared Accommodation: If two or more persons/families share accommodation such as sharing one apartment or house or even non-residential accommodation such as a classroom, and share the cost of food and/or other items, they are to be considered as one household. But if they do not make common provisions for food they are to be considered as separate households.

Polygamous Households:

Example 1:

A man married to several wives each living with her children in separate houses or group of houses should be regarded as separate households if each wife cooks and eats meals separately. In this case, even if they sometimes eat together, the fact remains that the wives are running separate households. Therefore, treat them as different households. Assign the husband as head to only one wife - most senior wife.

Example 2:

A man married to several wives each living with her children in a separate house or group of houses should be regarded as one household if all those wives cook and eat together.

2.3 USUAL HOUSEHOLD MEMBER

A usual household member is one who has been living with the household for at least six (6) months. He/she may or may not be related to the other household members by blood, marriage, or may be a house-helper or farm-labourer. A usual household member normally lives together with other household members in one house or closely related premises and takes his/her meals from the same kitchen.

The following people regard the housing unit as their home or usual place of residence and should be counted as usual household members:

a. **Persons** whose usual place of residence is the place where the household lives and are present at time of the enumerator's visit.

b. Other categories of usual members of the household include persons whose usual place of residence is the place where the household lives, but are absent at the time of the Enumerator's visit, e.g.:

   i) Persons temporarily away on vacation, business or pleasure trip or any other purpose within the country who are expected to be back within six months or abroad without the rest of the household and expected to come back;

   ii) Students who usually go to their respective households during weekends

and during holidays;

iii) Persons working elsewhere who usually go home to their respective households at least once a week;

iv) Patients confined in hospitals for any duration; and Convicts and detainees.

c. Lodgers of the household who are working, looking for work or studying, and who do not go home at least once a week;

d. Employees of household - includes servants who eat and sleep with the household and who do not go home at least once a week;

e. Persons (other than those in a, b or c) whose usual place of residence is elsewhere, but who have been away from their usual residence for more than six months;

f. Persons found in the household who have no usual place of residence elsewhere;

g. Persons found in the household who are not certain of being enumerated elsewhere;

h. Citizens of foreign countries who have resided or expected to reside in the country for more than one year from date of arrival;

i. Newly born babies and newly wedded persons.

2.4 HEAD OF HOUSEHOLD

This will be the person all members of the household regard as the head. He/she is the one who normally makes day-to-day decisions governing the running of the household. In cases of the one member households, the member will be the head of the household. REMEMBER A PERSON DOES NOT BECOME THE HEAD OF A HOUSEHOLD SIMPLY BECAUSE HE/SHE IS THE MAIN RESPONDENT.

Qualified Respondent:
is an adult member of the household who is knowledgeable about agricultural and other activities of the household. A child is not a suitable respondent. It is not necessary that all the information be given by one person. A respondent may consult any other member of the household on different items in the questionnaire. Knowledgeable female members are encouraged to also participate as respondents.

Adult member:
Refers to usual members of the household who are 12 years or older.

Agricultural Household: is a household in which at least one member is carrying out some agricultural activity (defined below).

Agricultural Activity:	is the growing of any crop and/or raising of livestock, raising of poultry and/or fish farming.
Agricultural Season:	Zambia's agricultural season starts from 1st October of a given year to 30th September of the following year.
Agricultural chemicals:	Refers to chemicals used in growing of crops, fish and rearing of livestock e.g. herbicides, pesticides, lime, vaccines, drugs etc.
Herbicides:	Chemicals used to destroy weeds e.g. round-up (Glyphosate) a chemical used in the ZamWipe.
Holding:	Is all land wholly or partly operated for agricultural purposes such as growing crops, fish farming and/or raising livestock and/or raising poultry for production under single technical management.
Tillage Method:	refers to land preparation activities just before planting such as, ploughing, ridging (by hand or plough), potholing, zero tillage etc.
Conventional hand-hoeing:	A tillage method where a hand hoe is used to turn the soil in the field.
Pot-holing	A land preparation method of digging holes for water harvesting. These holes serve as water collecting devices.
Planting basins:	this is a land preparation practice where the crop is planted in planting holes or basins. This practice does not involve use of plough or conventional plough.
Zero tillage:	a land preparation method where the land is left undisturbed, with the exception of planting stations.
Ploughing:	this is a land preparation method that involves turning the soil with a plough.
Ripping:	this is a form of minimum tillage where land is left undisturbed, with the exception of planting lines, which are ripped with a ripper.

Ridging:	this is a form of land preparation that involves making ridges with a ridger or hand-hoe.
Bunding:	a form of land preparation that involves making mounds, with hand-hoe.
Chitemene System:	This is a form of land preparation on virgin fields where trees/branches are cut and heaped in one place and then burnt. The burnt area is the only area to be planted.
Irrigation:	supplying of water to crops through artificial means and not being dependent on rain as a supplier of water. This can be done through sprinklers, furrows and other methods.
Drip irrigation:	this is a type of irrigation where drops of water are directed to a specific plant.

<u>Crops:</u>

Maize	production should be recorded in dried grain. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.
Rice	production should relate to "unthreshed" (which has not been de-husked) or "threshed" (which has been de-husked) units for paddy or polished, respectively. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.
Sorghum	production should be recorded in threshed grain form. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.
Millet	production should relate to "unthreshed" and "threshed" units for unshelled and shelled millet, respectively. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.

Irish/sweet	Potatoes production should be recorded in any one of the units represented in the code list. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.
Fodder crops	Crops including grass that are grown specifically for feeding animals.

Livestock and Poultry

Livestock:	includes all animals that are used/may be used for food and agriculture such as cattle, pigs, goats, sheep and poultry.
Poultry:	includes chickens, ducks, geese, pigeons, guinea fowls, rabbits, turkeys and quails.
Livestock Production:	all activities pertaining to the raising of all types of livestock.
Livestock Management:	all activities pertaining to the control and organization of livestock production.
Livestock Activity:	is the raising of livestock, raising of poultry and/or fish farming.
Watering point:	is a source of water for animals to drink e.g. boreholes, rivers, lakes
De-worming:	is administration of drugs in order to remove worms from an animal.
Vaccine:	A chemical substance administered to an animal to prevent it from suffering from a particular disease.
Vaccination:	this is administration of vaccines in order to prevent diseases.
Castration equipment:	equipment used to castrate animals i.e. Burdizzo.
Branding equipment:	equipment used to mark animals permanently.

Veterinary equipment:	equipment used in veterinary operations and these include castrators, needles and syringes.
Poultry production:	all activities pertaining to the raising of all types of poultry.
Livestock extension:	these are support services rendered to farmers with regards to improved methods of raising livestock.
System of production:	method of raising a particular type of livestock/fish.
Semi intensive production:	Management scheme where animals are raised partially under confinement and on free range, thus depend on both the natural water and feed resources, and that provided by the one raising them.
Intensive:	Management scheme where animals are raised in confinement and all their feed and water is provided (Zero grazing).
Extensive/pastoral:	method of raising animals based on grazing on natural pastures without supplementary feeding
Traditional:	Management scheme where generally animals are raised on free range depending on natural feed and water resources, the production lands are communally owned and commonly there is unrestricted breeding. In case of cattle, goats and sheep, they are usually herded during the day and secured in housing structures.
Free range:	method of raising animals where they fend for themselves.
Backyard:	method of raising animals within the premises of the residence.
Private veterinarians:	these are practicing veterinarians not employed by government.

Handling facilities:	structures that are made to make it easy to handle animals such as crush pens, kraals, loading bays.
Controlled breeding/controlled mating:	is regulated mating of male and female animals mainly as a means to avoid certain males from mating particular females or timing the time when males and females should mate so as to have off-springs born at a desired period of the year.
Artificial insemination:	impregnating a female animal without using a live male.
Lean period of production:	Months in year when animals produce the lowest milk quantities.
Peak period of production:	Months in year when animals produce the highest milk quantities.
Supplementary feeding:	Providing animals with extra feed/water in addition to what they eat/drink from their natural feed/water resources.
Cattle:	include bulls, oxen, tollies, cows, heifers, and calves.
Bulls:	are uncastrated adult male cattle.
Oxen:	are castrated male cattle. Not all oxen are trained to pull the plough.
Tollies/steers:	are young uncastrated male cattle
Cows:	are female cattle that have given birth at least once. Include female cattle that have not yet given birth but are beyond the stage of being termed heifers.
Heifers:	are female cattle that have not yet given birth and have not reached the stage of being termed cows.
Calves:	are either male or female young cattle that are not yet weaned.
<u>Pigs</u>	
Boar:	mature male breeding pig.

Sow:	mature female breeding pig.
Gilt:	young female pigs that have not farrowed (female pig that has never given birth).
Piglet:	are either male or female young pigs that are not yet weaned.

<u>Goats</u>

Buck:	mature male breeding goat. Also known as billy goat.
Doe:	mature female breeding goat. Also known as nanny goat.
Kid:	young goat not yet weaned.

<u>Sheep</u>

Ram:	mature male breeding sheep.
Ewe:	mature female breeding sheep.
Lamb:	young sheep not yet weaned.
Donkey:	An animal which is like a horse but is smaller and has longer ears.
Cats:	A furry animal with a long tail and sharp claws usually kept as a pet.
Dogs:	A very common four-legged animal that is usually kept by people as a pet or to guard or hunt.

<u>Poultry</u>

Village chicken:	traditional indigenous chickens.
Chickens (Broilers):	exotic chickens raised mainly for meat.
Chickens (Layers):	exotic chickens raised mainly for eggs.
Guinea pig:	small furry animal without a tail.
Guinea fowl:	large speckled grey African bird that is often eaten as meat.

Pigeons:	bird usually white/grey in colour mostly kept at home.
Ducks:	these are mostly water birds, smaller in size than geese and are found both in fresh water and sea water.
Geese:	this is a large bodied water bird that is larger in body size when compared with ducks.
Quails:	A small (17cm) bird, essentially streaked brown with a white eye stripe and has long wings.
Clutch:	A batch of eggs that a hen lays for a period of time, before it sits to brood.

<u>Tick control methods</u>

Acaricide:	This is a tick-killing chemical.
Dipping:	is a method of tick control which involves the plunging of the animal into the Plunge Dip containing the acaricide.
Pour-on:	is a method of tick control which involves the applying of acaricide on the skin and hair along the back.
Spraying:	this is the application of a chemical (acaricide) using industrial or knap-sack sprayer or a spray race.
Hand dressing:	Removing of ticks using the application of tick grease from the body of an animal.
Traditional tick control:	unconventional tick control method e.g. application of herbs to control ticks.

Other Concepts and Definitions

Payment in Cash:	is payment made in cash and/or by cheque (in Zambian Kwacha). If payment is made in a currency other than Zambian Kwacha, convert to Zambian Kwacha.
Payment in kind:	is payment made not in cash or by cheque but in form of goods or services.

Animal manure:	refers to forms of livestock manure e.g., chicken droppings, cattle dung etc.
Mechanical power:	Energy to do work which is derived from machinery driven by either an engine or electricity, e.g. tractor.
Animal draught power:	Energy to do work, derived from domesticated/trained animals, e.g. oxen, donkeys etc.
Manual labour:	this is physical work done by human beings.
Hired labour:	energy to do work, obtained for temporal use, at a cost.
Household Family Labour:	energy to do work derived from household members.
Farm Gate Price	Farm gate price is the basic price of a farm produce without any transport/delivery cost. In others words the producer price.
Beehive	A structure in which bees live (or are housed): A local one is made from materials such as barks of a tree, while a modern one is made from materials such as wooden planks.
Honey Comb	A structure made of wax formed by bees in their hive for storage of honey.
Comb honey	is honey still contained in a honey comb.
Bee Wax	A natural wax produced by bees to make a honey comb.
Colonise	The act or process of occupying a beehive. For example bees living in the beehive have colonised it.
Fish farming facility:	a fish facility refers to any structure that can be used to hold or produce fish and other aquatic organisms and whose environmental conditions can easily be managed, e.g. ponds, tanks, pens and cages.

Fish farming: all activities relating to the raising of fish in water reservoirs e.g. in ponds, tanks, cages etc.

Fingerlings: Small fish (seed) from 5g to 10g grams stocked for rearing/production.

Stocking of fingerlings: Stocking of fingerling is the 'planting' of the fish seed (fingerlings). The initial number of fingerlings put in a fish farming facility.

Table-size fish: fish weighing between 250g and 500g and is ready for consumed. Sometimes fish can be consumed below 250g and should be treated as table size.

Fish species

	English Name	Scientific Name
1.	Green headed bream	Oreochromis Machrochi
2.	Three spotted bream	Oreochromis Andersonii
3.	Red breasted bream	Tilapia Rendalii
4.	Nile Tilapia	Oreochromis Niloticus
5.	Carp fish	Cyprinus Carpio
6.	Cat fish/ Bubble fish	Clarius garrerpenus
7.	Tanganyika bream	Oreochromis Tanganyikae

Sex reversed fingerling: an artificially manipulated female fingerling administered with a male (androgenic) hormone in order to induce male characteristics. This prevents reproduction and makes the fish grow faster.

Single ingredient feed: Single ingredient is basically one component of the feed, e.g. maize bran only.

Commercial complete feed: A commercial complete feed is a feed that supplies all necessary ingredients (protein, lipid, carbohydrates, fats, vitamins and minerals) necessary for optimal growth. This is applicable in intensive systems, indoors systems or confined in cages and cannot feed freely on natural feeds.

Monoculture **is t**he culturing (keeping) of single fish species in one fish farming facility.

Polyculture is the culturing (keeping) of two or more fish species in one fish farming facility.

Length of production cycle: Length of production cycle is period from stocking to harvest. In Zambia, the aquaculture production cycle usually ranges between 3 to 12 months.

Fish facility management is caring for fish and fish farming facilities both stocked and un-stocked.

Fish pond: A fish pond is an artificial structure used for the culturing of fish. It is made with the objective of creating the best environmental conditions for the fish growth. This is the most commonly used facility among small scale fish farmers in Zambia. A fish pond can either be earthen, concrete or semi concrete.

Concrete ponds are sometimes referred as tanks especially when they are small in size. In cases where seepage is high in earthen ponds, plastic sheets or pond liners are used to reduce it.

Cages: Cage refers to the type of culturing facility consisting of a framed net open at the top and floating on the surface, or when completely enclosed, the cage is kept below the water surface by adjustable buoyancy or suspending from the surface. In Zambia, the culture of Nile tilapia and Tanganyika bream at high densities in floating cages is

practiced on Lake Kariba and Tanganyika. Recently cage fish farming has commenced on Lake Bangweulu and Mweru.

Cage culture offers several important advantages. The breeding cycle of tilapia is disrupted in cages, and therefore mixed-sex populations can be reared in cages without the problems of recruitment and stunting. Eggs fall through the cage bottom or do not develop if they are fertilized.

Tanks:

Tanks are made from different kinds of material and shapes. Tanks can either be concrete, fibre or even glass depending on the use. Tanks can be rectangular, circular or even oval in shape.

The most durable tank materials are concrete and fiberglass.

Tanks

Dam: A dam is a barrier built/created to stop or restrict the flow of water or underground stream. Reservoirs created by dams can be used for fish farming.

Weir: A weir is a barrier across a river or stream that alters the flow and usually affects the vertical height.

Other definitions

Dambo: A shollow depression or a small valley that is either permanently or seasonally water logged.

Wetland: An area that is waterlogged with slow moving water throughout.

Swamp: An area of vegetation that is susceptible to flooding.

CHAPTER 5: DATA COLLECTION PROCEDURES

Approaching a Household

The interviewer is expected on the onset to identify himself/herself by name and explain the purpose of the visit, the confidential nature of the interview, and the expected time the interview will take. The purpose of the interview is to collect data which when processed will provide information, which will assist policy makers plan and make better decisions. The interviewer is not expected to make promises. Just stick to the purpose of the interview. The interviewer can mention that he/she is merely the eyes and ears of Government.

Identification information

Once the cluster number is entered in the menu application and the questionnaire is opened items 2 through 8 will automatically be pre-filled with identification particulars associated with that cluster.

10. Village/Locality Name
Enter the name/locality name in the space provided.

11. Household Serial Number
Enter the serial number of the household in the three boxes provided.

12. Name of the Household Head
Write the name of the head of household in the space provided.

13. Contact Mobile Phone Number (Where available)
Enter the contact phone number of the head of household in the space provided. In case the head of the household has no contact phone number, record the phone number of any member of the household. If not available, enter -9.

14. Global Positioning System (GPS) Coordinates
Enter the GPS coordinates as recorded by the tablets. The coordinates should be taken at the main household whenever possible.

15. Name of Main Respondent
Identify the household head but if the head is not there, the interviewer with the help of household members should identify a qualified respondent who is knowledgeable and can answer questions. Record the name, starting with the family or second name, the name of the main respondent if this person is different from the head of the household.

16. Response Status
Record the response status for the questionnaire by using the following codes:-

1. Continue

2. No household member at home or no competent respondent
3. Entire household absent for extended period of time
4. Postponed
5. Refused: i.e., the household refused to co-operate.
6. Non-contact: i.e., for some reason, no responsible adult member was available during the period of the survey. The Supervisor has to ensure that all non-contact households are revisited and enumerated during the course of the survey.
7. Other

Select the appropriate response status code.

The interviewer should report to the supervisor all response status entries other than 'complete' and the supervisor should investigate all such cases. Final entries of the response codes other than 'complete' should be done only after the supervisor has completed his/her follow ups.

17. Assignment Record

Write your name against 'Enumerator' and the date on which you completed the interview against `Date Completed'. Leave the spaces for `Supervisor' blank. The Supervisor will complete this part. For CAPI, the assignment record is automatically done in the electronic questionnaire.

SECTION 1: DEMOGRAPHIC CHARACTERISTICS OF HOUSEHOLD MEMBERS

This is part of the questionnaire that captures basic information of household members. The CAPI system will take you through all the questions of one household member before moving on to the next member. This order of questioning helps improve recall for the respondent.

Table 1 Enumerator: find out the names of all the usual household members. Always start with the household head when listing.

MEM: Pre-entered

Name: Find out from the respondent, the names of all the members of the household and enter the names, starting with the head of the household. Enter the surname first.

LSD01: Enter the sex of the household members. If you can observe the sex, you should record the response without asking. Indicate the sex of each of the household members by entering the sex code in the space provided. Enter code '1' if the member is male, or code '2' if female.

LSD02: Ask about the member's relationship to the household head. Enter the appropriate response code. The codes for possible answers are listed at the bottom of the table. There is need to probe further to ascertain the exact relationship to the household head. ***Enumerator***, '1' is pre-entered

in the first row for the household head. As much as possible attempt to enter the spouse second and then rest of the household members in order of age starting with the eldest.

LSD03A: Find out the year in which this person was born. Record the year in four digits, e.g., 1996.

LSD03B: **Find out the month in which this person was born.** Select the appropriate month code.

LSD04: Ask for persons born in 2005 and before only (12 years and above). Find out from the respondent the current marital status of each adult household member. For those household members who are married, establish whether they are married monogamously or polygamous. Enter the appropriate response code.

LSD05: Ask for persons born in 2012 and before only (5 years and above). Ask what highest level of education the member completed. For example, a member who is attending Grade 10 will have completed Grade 9. We are interested in knowing the course level that has been completed. We are not counting the number of years spent at school. Enter the appropriate response code. For students at college/university, use codes 15 and 16 respectively.

Enumerator: In a number of cases, wrong information for this question is entered. For instance a six year old child may be recorded to have completed secondary school education. Therefore, level of education (LSD05) and age (LSD03) should be checked and confirmed.

Household member's participation in agricultural activities

Enumerator: Ask about household members' participation in agricultural activities for all persons born in 2005 or before (12 years and above).

LSD06: Find out if the household member participated in Crop production from 1st October 2016 to date? Enter "1" if yes and enter "2" if no.

LSD07: Find out if the household member participated in Livestock/poultry production (cattle, sheep, pigs, goats, donkeys, horses, rabbits, and poultry) including dogs and cats from 1st October 2016 to date? Enter "1" if yes and enter "2" if no.

LSD08: Find out if the household member participated in Fish farming from 1st October 2016 to date. Enter "1" if yes and enter "2" if no.

LSD09: Find out if the household member participated in Bee keeping from 1st October 2016 to date. Enter "1" if yes and enter "2" if no.

SECTION 2: LIVESTOCK PRODUCTION AND HEALTH

In this section, we are interested in capturing the type of livestock the household was/is raising and the type of housing used among other things. It is important to understand who owns these livestock and how the stock levels change/changed over the reference period (1st October 2016 to date).

2.1 Find out if the household raised any Livestock from 1st October 2016 to date. If the response is 'Yes', enter code '1' in **HH01**. If the response is 'No', enter code '2' and go to Section 3.

Table 2.1 Livestock Production and Housing

LP01: Ask the respondent whether the household raised any of the listed types of livestock during the reference period. If the response is 'Yes', enter code '1'. If the response is 'No', enter code '2' and go to the next livestock type.

LP02: Find out how many of the specific livestock type the household raised on 1st October 2016. Record the number. Enter '0' if none were raised.

LP03: Find out how many of the livestock type the household is raising now. Record the number. Enter '0' if none were raised and go to LP08.

LP04: Find out the main purpose of raising this livestock. Select the appropriate response from the codes list provided.

LP05: Find out how many of the specific livestock type referred to in LP03 are female. Record the number.

LP06: Find out how many of the livestock in LP03 belong to the members of this household. Record the number. Some of the livestock raised by the household may not belong to the household. Enter '0' if none belong to members of this HH and go to LP08.

LP07: From the total number of livestock owned by the household in LP06, find out how many are owned by female members of the household. Record the number. If none, enter '0'.

LP08: Ask the respondent how many of the livestock type were purchased/bartered-in from 1st October 2016 to date.
Enter '0' if none.

LP09: Find out how many of the livestock type were born from 1st October 2016 to date.

LP10: Find out how many of the livestock type were received as gifts during the reference period. Enter '0' if none. Note: these gifts include animals received as Lobola.

LP11A: Find out how many of the livestock type were slaughtered for sale from 1st October, 2016 to date. Record the number. Enter "0" if none. Note that the number slaughtered should only be recorded for animals raised by the household and not those bought specifically for slaughtering.

LP11B: Find out the total value in Zambian kwacha of the slaughtered livestock from 1st October, 2016 to date.

LP12: Find out how many of the livestock type were bartered out/ exchanged live during the reference period. Record the number. Enter "0" if none.

LP13: Find out how many of the livestock type were given out as gifts from 1st October, 2016 to date. Record the number. Enter "0" if none. Note: these gifts include animals given out as Lobola.

LP14: Find out if any of the livestock type was affected by any disease from 1st October to date. Enter code "1" if yes. Enter code "2" if no and skip to LP18B.

LP15A: Find out what main disease affected this livestock type from 1st October, 2016 to date. Select the appropriate response from the list of diseases provided.

LP15B: Find out if the disease reported in LP15A was confirmed by a veterinary expert. Enter code "1" if yes and enter code "2" if no.

LP16A: Other than the disease mentioned in LP15A, find out what other disease affected this livestock type from 1st October 2016 to date. Select the appropriate response from the list of diseases provided.

LP16B: Find out if the disease reported in LP16A was confirmed by a veterinary professional. Enter code "1" if yes and enter code "2" if no.

LP17: Ask if the affected livestock type/poultry received any conventional treatment from 1st October 2016 to date. Enter code "1" if yes and enter code "2" if no.

LP18A: Find out how many of the livestock type /poultry were lost due to disease from 1st October 2016 to date. Record the number. Enter '0' if none.

LP18B: Find out how many of the livestock type /poultry were lost due to theft from 1st October 2016 to date. Record the number. Enter '0' if none.

LP18C: Find out how many of the livestock type /poultry were lost due to accidents from 1st October 2016 to date. Record the number. **Note:** Accidents include incidents such as animal bitten by a snake, hit by a vehicle, overdose of medicine.

LP18D: Find out how many of the livestock type /poultry were lost due to other causes from 1st October 2016 to date. Record the number.

LP19: Find out how many of the livestock type /poultry were sold live for cash from 1st October 2016 to date. Record the number.

LP20: Find out the total value of sales of the livestock type/poultry sold live. Record the amount in Zambian kwacha.

LP21: From the livestock slaughtered in LP11A find out how many skins/hides were sold. Record the number. This question should only be asked if the answer in LP11A is greater than 0. Enter "0" if none and go to LP23.

LP22: Find out the TOTAL value in Zambian Kwacha for the skins/hides sold in LP21. Record the total amount.

LP23: Find out from this household, what the major feeding practise for livestock have been, from 1st October 2016 to date. Select the appropriate response code from those provided.

LP24: Find out the main type of livestock production system used to raise the livestock. Select the appropriate response code from those provided.

LP25: Find out the major constraint faced in raising the livestock. Select the appropriate response code from those provided.

LP26: Find out the main housing system the household used for this livestock type from 1st October 2016 to date. Select the appropriate response code from those provided. If "none" skip to the next livestock type.

LP27: Find out the main materials used for the roof. Select the appropriate response code from those provided.

LP28: Find out the main materials used for the floor. Select the appropriate response code from those provided.

LP29: Find out the main materials used for making the wall/fence. Select the appropriate response code from those provided.

Table 2.2 Livestock Management

Ask the follow up questions on livestock management practices if the household raised cattle, sheep, goats, pigs, donkeys, horses and poultry. In this section the aim is to find out the husbandry practices households are involved in. If the household did not raise the livestock type skip to the next livestock type.

2.2.1: Ask the respondent if their livestock holding is enclosed by a fence. If the response is 'Yes', enter code '1' in HH02. If the response is 'No', enter code '2'.

2.2.2: Find out if the household practices record keeping on livestock management. If the response is 'Yes', enter code '1' in **HH03**. If the response is 'No', enter code '2'.

2.2.3a: Find out if the household practices supplementary feeding for the livestock. If the response is 'Yes', enter '1'. If the response is 'No', enter '2' in **HH04A**.

2.2.3b: Find how much in total was spent on stock feed from 1st October 2016 to date. Enter the amount in Zambian Kwacha in **HH04B**.

2.2.4: Find out the main source of water for the livestock. Select the appropriate response code from those provided and enter the code in **HH05**.

2.2.5: Find out the distance in kilometres to the nearest main water source that is used for their livestock. Enter '0' if less than 1km. Enter the response in **HH06**.

2.2.6: Find out from the respondent, if the household has access to livestock extension services. If the response is 'Yes', enter code '1'. If the response is 'No', enter code '2' in **HH07**.

2.2.7: Find out the distance in kilometres to the nearest livestock extension services. Enter '0' if less than 1km. Enter the response in **HH08**.

2.2.8a: Find out what main cattle grazing system the household practises. Select the appropriate response from those provided and enter the code in **HH09A**.

2.2.8b: Find out what main Goat grazing system the household practises? Select the appropriate response from those provided and enter the code in **HH09B**.

2.2.9: Find out the main method the household uses to control livestock diseases. Select the appropriate response code from those provided and enter the code in **HH10**.

2.2.10: Find out what main method of tick control the household practices. Select the appropriate response code from those provided and enter the code in **HH11**.

2.2.11: Find out if the household vaccinated any of the livestock against any livestock diseases from 1st October 2016 to date. If the response is 'Yes', enter code '1'and if the response is 'No' enter code '2' in **HH12**. If No, skip to 2.2.13.

2.2.12: Find out from the respondent, which livestock diseases the household vaccinated against from 1st October 2016 to date. If the response is 'Yes', enter code '1'. If the response is 'No', enter code '2' in **HH13A** to **HH13L**. The diseases of interest are listed in the questionnaire.

2.2.13a: Find out who mainly treats the livestock when they are sick. Select the appropriate response code from those provided and enter it in **HH14A**.

2.2.13b: Find how much in total was spent on pest and disease control from 1st October 2016 to date. Enter the amount in Zambian Kwacha in HH14B.

Note that this question is asking for all the costs related to prevention and treatment of diseases.

2.2.14a: Ask the household if they hired any labour to help with the livestock keeping from 1st October 2016 to date. Enter code "1" if yes and enter code "2" if no in **HH15**.

2.2.14b: Find out the main type of labour the household employed for their livestock activities. Select the appropriate response from the list provided and enter the code in **HH16**.

2.2.14c: Find out the total cost of labour the household hired for keeping livestock from 1st October 2016 to date. Enter the response in **HH17A**.

2.2.14d: Find out if the household accessed Artificial Insemination (A.I) services from 1st October 2016 to date. Enter code "1" if yes and enter code "2" if no in **HH17B.**

Table 2.3 Livestock Population by Breed Type

In this section, we would like to find out the breeds of the livestock being raised by households.

Note that the total number of breeds given under a specific livestock type should be equal to the total number of the livestock type given in LP03.

LB01: Find out what cattle breeds the household is raising now. Select the appropriate response(s) from those provided.

LB02: Find out how many of each cattle breed the household is raising now. Record the Number. **LB03:** Find out what pig breeds the household is raising now. Select the appropriate response(s) from those provided.

LB04: Find out how many of each pig breed the household is raising now. Record the Number.

LB05: Find out what goat breeds the household is raising now. Select the appropriate response(s) from those provided.

LB06: Find out how many of each goat breed the household is raising now. Record the Number.

LB07: Find out what sheep breeds the household is raising now. Select the appropriate response(s) from those provided.

LB08: Find out how many of each sheep breed the household is raising now. Record the Number.

TABLE 2.4: MILK PRODUCTION AND SALES

In this section we want to find out about the household's involvement in milk production. Quantities of milk produced and sold will be recorded.

MP01: Find out if the household milked any of their livestock from 1st October 2016 to date. Enter "1" if Yes. Enter "2" if No and skip to next livestock type.

MP02: Find out how on average how many animals the household milked from 1st October 2016 to date. Record the number for each livestock type.

MP03: Find out who in the household mainly milked the animals from 1st October, 2016 to date. Enter the appropriate code.

MP04: Find out from the household what the main purpose of the milk was. Select the appropriate response from list provided. Note that leaving milk without doing anything to it and it eventually turns into sour is not being regarded as processing.

MP05: Find out from the respondent, the average quantity of milk produced by each livestock type per day in **litres** during the peak period (rainy season) of production.

MP06: Find out from the respondent, for how many months were the animals milked during the peak period (rainy season) of production. Enter the number of months.

Note: If response is not given in whole months, record in decimals. The decimals will be in weeks i.e. two months one week will be 2.25 months, two and half months will be 2.5 months, and two months three weeks will be 2.75 months.
The lean period (dry season) should not be more than 7 months while the peak period (rain season) should not be more than 5 months.

MP07A: Find out if the household sold any milk from each livestock type from 1st October 2016 to date. Enter "1" if yes and enter "2" if No. If No skip to MP07D.

MP07B: Find out where the household mainly sells the milk. Enter the appropriate code from those provided.

MP07C: Find out the average quantity of milk sold per day from each livestock type in **litres** during the peak period (rainy season) of production.

MP07D: Find out where the milking is usually done for each livestock type. Enter the appropriate code.

MP07E: Find out what type of container is mainly used during milking for each livestock type. Enter the appropriate code.

MP08: Find out the farm gate price of milk (ZMW per litre) for each livestock type during the peak period (rainy season) of production. Farm gate price is the basic price of a farm produce without any transport/delivery cost.

MP09: Find out the average quantity of milk produced per day by each livestock type in **litres** during the lean period (dry season) of production.

MP10: Find out how many months each livestock type was milked during the lean period (dry season) of production. **Note:** If response is not given in whole months, record in decimals. The decimals will be in weeks i.e. two months one week will be 2.25 months, two and half months will be 2.5 months, and two months three weeks will be 2.75 months.

MP11: Find out the average quantity of milk sold per day from each livestock type in **litres** during the lean period (dry season) of production.

MP12: Find out the farm gate price of milk (ZMW per litre) for each livestock type during the lean period (dry season) of production.

Table 2.5 Egg Production and Sales

In this section we want to find out about egg production and sales in the household Information on the number of eggs produced and sold will be collected.

EP01: Find out if any of the poultry raised by the household produced eggs from 1st October 2016 to date. Enter "1" if yes and enter "2" if no. If no, skip to the next poultry.

EP02: Find out how many clutches the poultry type raised had on average from 1st October 2016 to date. Enter the number.

EP03: Find out how many eggs per clutch, the poultry type raised, laid on average in the last clutching period. Enter the number.

EP04: Find out how many of the poultry type had their clutches in the last 3 months. Enter the number.

EP05: Find out if this household sold eggs produced by this poultry type in the last 3 months. Enter "1" if yes and enter "2" if no. If No, skip to the next poultry.

EP06: Find out how many eggs produced by this poultry type the household sold in the last 3 months. Enter the number.

EP07: Find out how much the household earned in ZMW by selling eggs produced by this poultry in the last 3 months.

EP08: Find out which household member is mainly in charge of selling the eggs produced by this poultry type. Enter the appropriate code.

Table 2.6: Animal Draught Power and Manure Use

We are interested in capturing information pertaining to the household use of animal draught power and manure. The reference period for this information is from 1st October to the survey date

APM01: Find out if this household used any of its livestock type for draught power (e.g. for ploughing transport) from 1st October 2016 to date. Enter "1" if yes and enter "2" if No. If no, skip to **APM05**.

APM02: Find out what the main use of draught power from the livestock type was, from 1st October 2016 to date. Enter the appropriate code.

APM03: Find out if this household used the livestock type to provide ploughing and/or transport services to other households. Enter "1" if yes and enter "2" if no. If no, skip to APM05. Note that Crop Agriculture in the answer options includes ploughing, seeding, weeding, threshing, milling etc.

APM04: Find out how much money the household received by providing ploughing and/or transport services with each livestock type from 1st October 2016 to date. Record the amount in ZMW.

APM05: Find out if the household made any use of the dung/droppings from this type of livestock from 1st October 2016 to date. Enter "1" if yes and enter "2" if no. If no, skip to AMP07.

APM06: Find out what has been the main use of dung/droppings from each livestock type from 1st October 2016 to date. Enter the appropriate code

APM07: Find out if the household sold dung/droppings from each livestock type from 1st October 2016 to date. Enter "1" if yes and enter "2" if no. If no, skip to the next livestock type.

APM08: Find out how much this household earned from the sale of dung/droppings from the livestock type from 1st October to date. Record the amount in ZMW.

TABLE 2.7: ANIMAL REPRODUCTION AND MANAGEMENT

AB01: Find out if the household practised controlled mating or other breeding strategies (e.g. selective animal reproduction, artificial insemination) of

each livestock type from 1st October 2016 to date. Enter "1" if Yes. Enter "2" if No and skip to AB05.

AB02: Find out the main controlled mating or breeding strategy used by the household for the livestock type from 1st October 2016 to date. Enter response the appropriate code.

AB03: Find out if the household incurred any costs related to breeding for the livestock type. Enter "1" if Yes. Enter "2" if No and skip to AB05.

AB04: Find out how much in total (ZMW) the household spent on breeding for each livestock type from 1st October 2016 to date.

AB05: Find out who in the household was mainly responsible for watering each livestock type from 1st October 2016 to date. Enter the appropriate response code.

AB06: Find out how frequent the household watered each livestock type from 1st October 2016 to date Enter the appropriate response code.

AB07: Find out how much the household paid (ZMW) for water used to water each livestock type from 1st October 2016 to date. Enter "0" if household did not spend.

AB08: Find out who in the household was mainly responsible for feeding the livestock type from 1st October 2016 to date. Enter the appropriate code.

SECTION 3: BEE KEEPING (own production)

In this section we are interested in capturing information from households involved in bee keeping from 1st October 2016 to date. We would like to learn what type of beehives the household is/was using, how many beehives the household have/had etc.

3.1: Find out if any member of the household is/was involved in bee keeping from 1st October 2016 to date. If the answer is Yes, enter '1' in **HH18** and ask the questions that follow. Enter '2' if the answer is No and skip to section 4.

3.2: Find out what type of beehives the household is/was using from 1st October 2016 to date. Enter the appropriate response in **HH19**.

3.3: Find out the number of beehives the household has/had during the reference period. Enter the response in **HH20A**.

3.4: Find out how many of the beehives reported in Q.3.3 are/were owned by female members of the household. Enter the response in **HH20B**.

3.5: Find out how many of the beehives reported in Q.3.3 are/were colonized from 1st October 2016 to date. Enter the response in **HH20C**.

3.6: Find out how much comb honey the household harvested from 1st October 2016 to date. Enter the quantity in HH21A and the unit of measure in HH21B. If they didn't harvest, enter '0' and skip to 3.10.
Note: For purposes of measurement, comb honey should be collected in crushed form.

3.7A: Find out if the household sold any of comb honey harvested from 1st October 2016 to date. If the answer is 'Yes', enter '1' in **HH22**. If the answer is 'No', enter 2 and skip to **HH25**.

3.7B: Find out how much comb honey the household sold. Record the response in **HH23A** for quantity and unit in **HH23B**.

3.7C: Find out the price per unit of the quantity sold by the household in **HH23B in Zambian Kwacha**. Record the response in **HH24.**

3.7D: Find out if the household processed any comb honey harvested from 1st October 2016 to date. If the answer is 'Yes', enter '1' in **HH25.** If the answer is 'No', enter 2 and skip to Q3.10.

3.8: Find out how much beewax the household produced from 1st October 2016 to date. Enter the quantity in **HH26A** and the unit of measure in **HH26B**. If none, enter '0' skip to Q3.10.

3.9A: Find out if the household sold any of beewax produced from 1st October 2016 to date. If the answer is 'Yes', enter '1' in **HH26C** . If the answer is 'No', enter 2 and skip to Q3.10.

3.9B: Find out how much beewax was sold. Enter the quantity in **HH26D** and the unit of measure in **HH26E**.

3.9C: Find out the price per unit of the quantity sold by the household in HH26E in Zambian Kwacha. Enter the response in **HH26F.3.10:**

Find out what the three (3) major constraints the household experienced in bee keeping from 1st October 2016 to date. Enter the **most severe** constraint in **HH27A** followed by the **severe** constraint in **HH27B** and the **least severe** constraint in **HH27C**.

SECTION 4: FISH FARMING

In this section we are interested capturing aquaculture production at household level from 1st October, 2016 to date. Only the households involved in management of fish and fish farming facilities will be captured. In the household questionnaire, we are not interested in capturing communal production of fish. ***Reference period: 1st October, 2016 to date.***

4.1: **Enumerator**: Find out if the household was/has been practising fish farming from 1stOctober 2016 to date. If the response is 'Yes', enter '1' and ask the questions that follow. If the response is 'No', enter '2' in **HH28** and go *to Section 5.* ***Note: practising of fish farming means being involved in management of both fish and fish farming facilities.***

Table 4.1: **Fish Farming Facility**

FF1: Find out if the household has/had any fish farming facility from 1st October, 2016 to date. If the response is 'Yes', enter '1'. If the response is 'No', enter '2' and go to the next fish farming facility.

FF2: Find out how many of this type of fish farming facility is the household managing. Enter the appropriate response.

FF3: Find out how many of this type of fish farming facility belong to the household. Enter the appropriate response.

FF4: Find out the main source of water for this fish farming facility. Enter the appropriate response code.

FF5: Find out how many of this type of fish farming facility are owned by female members of the household.

FF6: Find out what main type of fish culture the household practice for this type of facility. Enter the appropriate response. **Enumerator: note that the main type of fish culture refers to the facility with the highest stocking density.**

FF7A: Find out the total area/volume of this type of fish farming facility managed by the household whether stocked or un-stocked.

FF7B: Find out the unit of measure for the fish farming facility. **NOTE:** Information should be recorded in m^2 for Ponds and Pens, for Cages and

Tanks units should of measure be recorded in m^3. For Dams for units should be in hectares and for Weir unit of measure can be in m^2 or hectares

FF8: Find out how many of this type of fish farming facility are/were stocked. Enter the number.

FF9A: Find out the total area/volume stocked from 1st October 2016 to date. **Note: If the facility was stocked more than once capture the area/volume only once.**

FF9B: Find out the unit of measure for the fish farming facility. **NOTE:** Information should be recorded in m^2 for Ponds and Pens, for Cages and Tanks units of measure should be recorded in m^3. For Dams for units should be in hectares and for Weir unit of measure can be in m^2 or hectares

FF10: Find out the total number of fingerlings stocked from 1st October 2016 to date.

FF11: Find out the average length (in months) of the production cycle of the main specie. Enter the number.

Table 4.2: Fish Farming Management

4.2: Find out the main purpose of raising fish and enter the appropriate response in **HH29.**

4.3: Find out the type of fish the household was/is producing and enter the appropriate response code in **HH30.**

4.4: Find out what main fish type (specie) was stocked from 1st October 2016 to date and enter the appropriate code in **HH31.**

4.5a: Find out the main type of fingerlings stocked and enter the appropriate response code in **HH32A.**

4.5b: Find out how much in total was spent on the purchase of fingerlings from 1st October, 2016 to date. Enter the amount in HH32B.

4.6: Find out if the household feeds/fed the fish. If the response is 'Yes', enter '1' in **HH33**. If the response is 'No', enter '2' and skip to **Q4.9.**

4.7: Find out the main type of feed the household uses to feed the fish and enter the appropriate response code in **HH34.**

4.8a: Find out the source of the feed and enter the appropriate response code in **HH35A.**

4.8b: Find out how much in total was spent on the purchase of fish feed from 1st October, 2016 to date. Enter the amount response in HH35B

4.9: Find out the quantity of fish the household harvested since 1st October 2016 to date. Enter the quantity in **HH36A** and the unit of measure in **HH36B**.

4.10: Find out the total quantity of fish the household sold from the total harvested since 1st October 2016 to date. Enter the quantity in **HH37A** and the unit of measure in **HH37B**.

4.11: Find out the farm gate price for fish per kg. Enter the response in **HH38.**

4.12: Find out if the household experienced any fish deaths in the fish facilities. If the response is 'Yes', enter '1' in **HH39**. If the response is 'No', enter '2' and skip to Q4.15.

4.13: Find out whether the household observed any signs of disease on the dead fish. If the response is 'Yes', enter '1' in **HH40**. If the response is 'No', enter '2' and skip to Q4.15.

4.14: Find out what major symptoms or signs relating to the fish diseases the household observed. Record the appropriate response code in **HH41.**

4.15: Find out if the household observe any signs of disease on the live or harvested fish. If the response is 'Yes', enter '1' in **HH42**. If the response is 'No', enter '2' and skip to Q4.17.

4.16: Find out the major signs of fish disease. Record the appropriate response code in **HH43.**

4.17: Find out if the household incurred any loss of fish after harvesting. Record the appropriate response code in **HH44.**

4.18: Find out if the household preserved the harvested fish. If the response is 'Yes', enter '1' in **HH45**. If the response is 'No', enter '2' and skip to Q4.20.

4.19: Find out if the main method household used to preserve the fish. Record the appropriate response code in **HH46.**

4.20: Find out three (3) major constraints that you experience in fish farming. Start with the most severe constraint. Select the appropriate response code and record in **HH47A, HH47B, HH47C respectively.**

SECTION 5: CROP MANAGEMENT

In this section we are interested in capturing information on maize, rice, millet, sorghum, sunflower, soya beans, groundnuts, Irish potatoes, sweet potatoes, and fodder crops produced during the 2016/2017 agricultural season. We would like to collect information on the total area planted under each crop, the main tillage method used, type and quantity of basal dressing fertilizer used, and type and quantity of top dressing fertilizer used. We would also like to find out the quantity of the crop harvested and the quantity of this harvest used as feed for livestock/poultry.

It is important to note that information should be aggregated for each given crop e.g. if the household had three maize fields the total area under maize would be the summation of the three individual maize fields the household used to grow maize.

Note: The reference period for the crop management questions is from 1st October, 2016 to 30th September, 2017.

5.1a: Ask whether the household was involved in crop or fodder crop production from 1st October, 2016 to 30th September, 2017. Enter '1' in HH48 if the response is yes. If the response is no, enter '2' and go to section 6.

5.1b Find out if the household used any crop residue from the grown crops to feed livestock. Enter '1' in HH49 if the response is yes. If the response is no, enter '2'.

Table 5.1

CM01: Find out which of the listed crops the household grew between 1st October 2016 and 30th September 2017. Enter "1" if the response is Yes. Enter "2" if the response is No and go to the next crop.

CM02: Find out the main tillage method used for the crop. Enter the appropriate tillage method code.

CM03: Find out the total area planted under this crop. Enter the quantity

CM04: Enter the appropriate unit code.

CM05: Find out the type of basal dressing fertilizer the household applied. Record the type using the code list provided.

CM06: Enter the quantity in Kgs.

CM07: Find out the type of top dressing fertilizer the household applied. Record the type using the code list provided.

CM08: Enter the quantity in Kgs.

CM09: Find out the quantity of the crop harvested and enter the quantity.

CM10: Enter the appropriate unit code from the code-list provided.

CM11: Find out what quantity of the harvested crop was used as feed for livestock and enter the quantity.

CM12: Enter the appropriate unit code from the list provided.

CM13: Find out the quantity of the by-products of the harvested crop did the household use to feed the livestock and enter the quantity.

CM14: Enter the appropriate unit code.

SECTION 6: SELECTED HOUSEHOLD ASSETS/IMPLEMENTS

We would like to establish the asset base the household has control over and how the stock level of these assets has changed in the reference period. We would also like to establish the current value of these assets. The assets of interest are identified in the first column ASSET. All non-working assets that are/were serviceable should be considered as working.

Enumerator, make sure that AST01 and AST03 are filled; they must not be left blank.

Type of assets: pre entered

Assets: pre entered

AST01: Ask the respondent if the household owned any of the listed assets under this section between 1st October 2016 and now. Enter "1" if the response is yes. If the response is no, enter "2" and go to the next asset.
AST01 should be asked on all the assets before you proceed to AST02-AST04.

AST02: Ask the respondent how many of the named asset the household had in a working condition as at 1st October, 2016. Enter the numbers reported. Enter "0" if the household had none.

AST03: Ask the respondent to give you the number of the named asset owned by members of the household that are in a working condition now. Enter the number reported. **If zero, go to the next asset.**

AST04: Ask the respondent to estimate the total value of all the asset types that are in working condition if they were to sell at the survey date. Enter the current total value in Kwacha (ZMW).

Conversion Table

Acres to Hectares

1/4	ACRE	=	0.1	HECTARES
1/3	ACRE	=	0.13	HECTARES
1/2	ACRE	=	0.2	HECTARES
2/3	ACRE	=	0.27	HECTARES
3/4	ACRE	=	0.3	HECTARES
1	ACRE	=	0.4	HECTARES
2	ACRES	=	0.81	HECTARES
3	ACRES	=	1.22	HECTARES
4	ACRES	=	1.62	HECTARES
5	ACRES	=	2.02	HECTARES
6	ACRES	=	2.43	HECTARES
7	ACRES	=	2.84	HECTARES
8	ACRES	=	3.24	HECTARES
9	ACRES	=	3.64	HECTARES
10	ACRES	=	4.05	HECTARES
15	ACRES	=	6.08	HECTARES
20	ACRES	=	8.1	HECTARES

Lima To Hectares

1/4	LIMA	=	0.06	HECTARES
1/3	LIMA	=	0.08	HECTARES
1/2	LIMA	=	0.12	HECTARES
2/3	LIMA	=	0.17	HECTARES
3/4	LIMA	=	0.19	HECTARES
1	LIMA	=	0.25	HECTARES
2	LIMA	=	0.5	HECTARES
3	LIMA	=	0.75	HECTARES
4	LIMA	=	1	HECTARE
5	LIMA	=	1.25	HECTARES
6	LIMA	=	1.5	HECTARES
7	LIMA	=	1.75	HECTARES
8	LIMA	=	2	HECTARES
9	LIMA	=	2.25	HECTARES
10	LIMA	=	2.5	HECTARES
11	LIMA	=	2.75	HECTARES
12	LIMA	=	3	HECTARES

1 hectare = 100m x 100m = 10,000sq metres

0.5 hectares= 50m x 100m = 5,000sq metres

1 lima = 50m x 50m = 2,500sq metres