

Strictly Confidential



REPUBLIC OF ZAMBIA

CROP FORECAST SURVEY 2004/2005

AND

POST HARVEST SURVEY 2003/2004

(For small and medium scale holdings)

INTERVIEWER'S INSTRUCTION MANUAL

**MINISTRY OF AGRICULTURE AND COOPERATIVES
(DATABASE MANAGEMENT AND EARLY WARNING UNIT)**

in conjunction with

**CENTRAL STATISTICAL OFFICE
(AGRICULTURE AND ENVIRONMENT DIVISION)**

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INTRODUCTION

1.1: Background and Purpose

In earlier years in 1978/79 agricultural season, the agricultural survey was called the Agricultural and Pastoral Production Survey, later renamed in 1982/83 as the Early Warning and Agricultural Survey to encompass the Crop Forecasting and Post-Harvest stages of the agricultural season during which period the two different types of surveys were conducted. However, in 1985/86 the two types of surveys were renamed the Crop Forecasting Survey and Post- Harvest Survey, respectively. The two surveys continue to be known as such.

The purpose of the Crop Forecast Survey is to obtain crop forecast data for 2004/2005 agricultural season. The estimates obtained are on area planted to crops, realised production, quantity and variety of seed, quantity and type of fertilizer used, sales, area under cassava, area under mature cassava and carryover stocks. The reference period for this information is the agricultural season starting 1st October 2004 ending 30th September 2005. It is very important for the interviewer to check which time period the questions refer to. The Post Harvest Survey will be used to collect area planted to crops, actual crop production and sales in the 2003/2004 agricultural season.

1.2 Scope and Coverage

These surveys will cover the whole country. The surveys will be conducted in the same SEAs that were covered for the 2003/2004 Crop Forecast and the 2002/2003 Post Harvest Survey.

1.3 Sample Design

A sample of 410 Standard Enumeration Areas (SEAs) was drawn using probability proportional to size sampling scheme. The measure of size of the SEAs is the number of agricultural households located within each SEA on the area sampling frame as per the 2000 Census of Population.

Following the 2000 Census of Population and Housing among whose objectives was the creation of a sampling frame for agricultural surveys, a frame of agricultural SEAs has been set up and this frame will be used to collect data during the subsequent Post-Harvest and Crop Forecast Surveys.



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from previous Post-Harvest and Crop Forecast Surveys, rates for minor crops such as rice, cotton, soya beans, etc were far from being satisfactory. Because of this, redesign the frame in order to address the situation.

1.4 Survey instrument

The Crop Forecast Survey Instrument will focus on the current agricultural season's (2004/2005) crops under cultivation, area planted, area already harvested and expected to be harvested, reasons for poor harvests, seed variety and quantity used to plant, quantity of fertilizers used, expected total production and sales for the season. The Post Harvest Survey instrument will focus on the previous agricultural season (2003/2004) crop production and sales.

PERFORMANCE OF ACTIVITIES

(a) Importance of Interviewer Performance

Field interviewers are the eyes and ears of the data collection team. The interviewer serves as a link between those who analyze and use the data and the respondents who furnish the data. The information collected in any survey is only as good as the interviewers working on the survey. Quality depends on all interviewers following the same procedures. Only when the same techniques have been used for all interviews can the data be effectively analyzed and interventions confidently implemented.

(b) Ethics and Rules of Conduct of Interviewers

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 someone else. Respondents should be told that the information they provide will be used in statistical form only and that their names will not be associated with their answers when the data are analyzed.

Things You Must Do

- You must introduce yourself on every visit and explain to the respondent the reason for your visit before starting the interview.
- You must read and intensively study your manual to become thoroughly familiar with its contents in order to do your work efficiently.
- 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, since, if the interviews are 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 made.

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/MACO to work on this survey can be allowed to see the information you collect, nor must you discuss such information with anyone.

or permit any unauthorized person to assist you with
how intelligent they are, they will not have had the
training you have or the authority to participate in interviewing.

- You must not combine with the survey work 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.

(b) List of Basic Duties and Responsibilities

You, the interviewer, are the key to the success of the survey. You alone have a 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 survey 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 persons sampled in the SEA
- Ensure that all survey materials are looked after properly and returned to the supervisor after the survey exercise is over
- Perform any other functions which the supervisor may assign from time to time
- Keep all information received completely confidential.

At times you will find that the actual situation in the field will make your job somewhat difficult. For example, you may run out of pencils or your bicycle may break down 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. If you are temporarily out of pencils, for example, borrow one from a friend; or if your bicycle breaks down, consider another form of transportation until you are able to have it repaired.

It will be up to you to find temporary solutions to the problems you face until a more permanent solution is found.

(c) Timeliness of the submission of questionnaires

Prompt submission of the questionnaires is absolutely crucial for timely processing. If submission of the forms is delayed, it will be impossible to process them on a timely basis. The value of the data for planning and decision-making is directly related to its timeliness.

3.1 Preparing for the interview

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

a) Reviewing the Interviewer's Manual

This includes reviewing the general interviewing procedures, the specific field procedures and the question-by-question instructions.

b) 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. Stumbling through the questionnaire (losing your place, shuffling papers, etc.) can disturb the person being interviewed.

c) 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.

d) Appearance and Behaviour

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

3.2 Establishing a good 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 with whom 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.

3.3 Using the survey questionnaire and asking the questions

The goal of the interview is to collect accurate information 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.

serve the following rules:

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.

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 questionnaire. 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. If the respondent does not seem to understand the question, simply repeat it. In order that the information from the questionnaire can be put together, each question must be asked in exactly the same way to each respondent.

In some unusual cases, the respondent may simply not be able to understand a question. If it is apparent 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 when doing this.

Sometimes, respondents will ask you to define words in a question or explain some part of a question. When this occurs, consult the 'Specific Data Collection Procedures' in Chapter 5 of this manual. All the important words and terms are defined there. If a word is not defined, tell the respondent to answer using his or her own definition. Say, 'Whatever it means to you - just answer that way.'

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.

As you must ask, the questionnaire contains instructions. The instructions are for you to use the questionnaire correctly and must be followed closely.

`Skip'= Instructions

`Skip' instructions usually are written out. You must read 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 CSS3 (PHS)

INTERVIEWER: Does the household have any of this last season's crops from own harvest in storage now?

1=Yes

2=No→next crop

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 **boldface** and italicised. E.g. the statement in CF12 '**Enter "0" if they did not apply**' is an instruction to you.

3.5 Probing

(a) 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 complete, 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 full and detailed response - a response, however, which is quite 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.

I think that they are answering a question when all they are giving an answer, which was already given, or repeating parts of an answer. Some people can talk a great deal and still be merely repeating the same words in different words.

Probing therefore, has two major functions:

- § To motivate respondents to expand upon or clarify their answers;
- § To make the respondent's answer precise 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.

(b) 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 useful 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 ingenuity, tact and persistence.

(c) 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 CF15

CF13: How much of this crop will you harvest?

ANSWER: 50 or 60 bags.

IMPROPER PROBE: Oh, you mean 60 bags?

(This improper probe is pushing the respondent to say 60 bags when it may be 50 bags!)

PROPER PROBE: Was it 50 or 60 bags?

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

Following kinds of probes might help you obtain more

When the respondent does not seem to understand the question, when he misinterprets it, when he seems unable to make up his mind, or when he strays from the subject, the most useful technique is to repeat the question just as it was asked the first time.

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 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 thoughts.

Repeating the Respondent's Reply

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

Neutral Questions or Comments

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

- § Repeat question
- § Anything else?
- § Any other reason?
- § How do you mean?
- § 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.

(d) Asking For Further Clarification

In probing, it will sometimes be useful to appear slightly puzzled by the respondent's answer and intimate 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 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 any number of things. For instance,

- § The respondent does not understand the question and answers 'I don't know' to avoid saying he does not understand.

- thinking the question over and says 'I don't know' in order to give himself time to think.
- be trying to evade the issue, or he 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 is the case. Do not immediately settle for a '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 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 a "don't know" before accepting it as the final answer, but be careful not to antagonize the respondent or force an answer if he says again 'I don't know'.

(e) When to Stop Probing

You should stop probing when you have a clear, 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.

3.6 Controlling the Interview

While it is important to maintain a pleasant, 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 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 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.

...tly and obtaining clear answers is only part of your job.
...ng the answers given by the respondents.

(a) Legibility

It should be obvious to you that all the entries you make in the questionnaire must be legible. If your Supervisor cannot read an entry, the questionnaire will be returned to you for correction. When this happens, much time will be wasted. Since you must spend a great deal of time to go to a household and obtain the information in the first place, why not take care in recording information so that no one else will have difficulty in reading it later.

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 on diskettes for computer processing.

(b) Recording information in the proper place

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.

Recording Fractions

In most cases, only whole numbers (for example: 4, 6, 7, 15, 21, etc.) will be recorded since this is the kind of information usually required. Sometimes, however, the respondent might provide you with an answer in fractions. This is especially the case with area. For example, if the respondent tells you that he has 2 1/2 hectares of cropland, which he cultivated during the 2003/2004 agricultural season, make sure that when you record his answer, you convert it to decimal numbers. That is, change the fraction ^{1/2} to 0.5 and record 2.5 hectares. Never record a fraction, always convert it.

Commonly used fractions and their decimal equivalents
at tenth.

$$50 \quad 3/4 = 0.75$$

$$1/3 = 0.33 \quad 2/3 = 0.67$$

3.8 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.

3.9 Ending the interview

It is important that you leave the respondent with the idea that you are grateful for his or her co-operation. 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.

CONCEPTS AND DEFINITIONS

It is important that you acquaint yourself with the general concepts and definitions used for this survey before embarking upon the fieldwork.

Definitions

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 one person give all the information. A respondent may consult any other member of the household on different items in the questionnaire.

Agricultural Household

is a household in which at least one member is engaged in an agricultural activity.

Household

consists of all members of one family who are related by blood, marriage, or adoption, including other persons, such as house-help or farm labourers, if any, who normally live together in one house or closely related premises and take their meals from the same kitchen and have one person they regard as the household head. It may also consist of one member.

Household Member

A **household member** is:

1. Any individual who in the last 12 months has lived with the household for at least six months regardless of whether they have intentions to stay or not;
2. An individual attending school away from home;
3. Newly born babies;
4. Individuals who are newly wedded-in;
5. Individuals who have stayed for less than six months but have come to stay with the household.

A **non-household member** is:

1. An individual who may have left the household with no intention of rejoining the household;
2. Individuals who are married away.
3. All other household members who do not meet the criteria for household membership

Adult member

refers to persons who are 12 years or older

Agricultural Activity

is the growing of any crop and/or raising of livestock, raising of poultry and/or fish farming.

Household Head

is a person who is considered to be the head by the members of the household. The husband, in a matrimonial household is usually taken

of the household. In his absence it is the wife or the eldest member of the household who assumes responsibility of household head.

usually cultivated with one crop at a time. In some cases, a number of different crops (mixture) may be grown in a single field at the same time e. g sorghum between groundnuts rows, or groundnuts between maize rows.

- Garden** This is land where vegetables e. g cabbage, rape e.t.c are grown. Usually this land is located in a dambo wetland or stream-bank.
- Orchard** This is land designated or allocated for growing fruit trees only. If the trees are scattered around on some undefined area, they do not constitute an orchard.

Concepts and guidelines

Crops

- Mixed beans** Include all kinds of beans except soyabeans and ground (round) beans. The quantities of production and sales should relate to dried beans in any of the units listed in the questionnaire. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.
- Seed-cotton** production and sales should be recorded in seed-cotton form in kilograms. Where the quantity is reported in bales/woolpacks, it should be converted to kilograms before recording. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to kg.
- Groundnuts** production and sales of groundnuts should relate to shelled as well as unshelled 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.
- Maize** production and sales 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 and sales should relate to "unthreshed" or "threshed" 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, sales and purchases 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.

sales and purchases should relate to "unthreshed" and units for unshelled and shelled millet, respectively. If the reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.

Soyabeans production and sales should be recorded in dried seed 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.

Sunflower production and sales should be recorded in dried seed. If the respondent reports in units other than those provided in this questionnaire, convert the reported quantities to the most convenient of these units.

Tobacco (Burley and Virginia) production and sales should relate to cured tobacco in kilograms. Where the quantity is reported in bundles/bales/packs, this should be converted to kilograms before recording.

Irish/sweet Potatoes production and sales 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.

Miscellaneous

Mixed Cropping is a cultivation practice whereby two or more different crops are grown simultaneously in the same field.

The apportionment of area under crops in mixture may be approached through asking the respondent what proportion of the field would be covered by each crop in mixture, if these were to be planted as pure stand on parts of the field. Another way would be to ask the respondent how much seed was used for each crop in the mixture, e.g., how many pockets and of what size (kg)? how many kilograms? or how many 20 litre tins? etc. **Exception:** If cassava is grown in mixture with millet, each of the two crops should be assigned the area of the entire field. E.g. 1 lima of cassava in mixture with millet should be recorded as 1 lima of cassava and 1 lima of millet.

Area under mixed crops is the area of the field in which two or more crops are grown almost simultaneously. This area has to be apportioned to the constituent crops in proportions occupied by the crops in the field. Thus, the area under each of the crops in mixture when added together will be equal or almost equal to the area of the field.

cultural season extends from 1st October of one year to the 30th September of the following year.

seed that has been improved by research but is not hybrid seed. Examples are open pollinated varieties (OPVs). The progeny of OPVs can be used in the next seasons without loss of vigor. There are also improved varieties for sorghum, cassava and sweet potatoes.

Hybrid seed	refers to an improved type of seed whose progeny is not recommended to be used as seed. Hybrid seeds are popular with maize
Local varieties	refers to seed that is recycled season after season. Examples include varieties for groundnuts and also maize. OPVs that have been recycled become local seed varieties over time.
Crop rotation	The practice of rotating crops that use nutrients differently e.g, legumes with cereals or crops that are prone to different pest attacks
Irrigation	Supplying of water to crops through artificial means and not being dependent on rains as a supplier of water. This can be done through sprinklers, furrows and other methods
Land preparation	refers to activities such as clearing the land, tree stumping, ploughing, etc that are normally done before planting
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/ Planting holes	A land preparation practice where the crop is planted in planting holes or basins, with the latter also serving as a moisture retention device. This practice does not involve use of plough or conventional ploughing
Zero tillage	A land preparation method where the land is left undisturbed with the exception of planting stations
Ploughing	A land preparation method that involves turning the soil with a plough
Ripping	A form of minimum tillage where land is left undisturbed, with the exception of planting lines, which are ripped with a ripper (e.g. Magoye ripper)
Ridging	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 a hand hoe

Examples of livestock manure e. g chicken droppings, cattle dung

Plant manure

refers to compost manure made from crop residues, grass and soil enriching plants

NGO

a Non-Governmental Organisation (NGO) is a group of individuals in a non profit making organisation, whose purpose is to render assistance materially and in some cases financially to the under-privileged. Their main objective is alleviation of poverty and the uplifting of the living standards of the under-privileged. They rely on donor support which may be bilateral or multilateral in nature (among the donors that render such support are NORAD, IFAD, FINIDA, SIDA, DFID, etc). Their efforts are also supported by Government. Examples of NGOs are Women for Change, AFRONET, OXFAM, CARE, World Vision etc

SELECTION OF SAMPLE HOUSEHOLDS

The first step is to identify agricultural households among those listed in the SEA, i.e. households that reported having grown crops, and /or raised livestock, and/or raised chickens. Households that are non agricultural, those that are 'non-contact' and those that refused to cooperate should also be identified and indicated by writing 'NON AGRIC' 'NON CONTACT' or 'REFUSAL' in the margin against them. Put a mark in the relevant column under column 11 for households that have been identified as either 'NON AGRIC' 'NON CONTACT' or 'REFUSAL'.

The next step is to stratify agricultural households by size of cultivated land (column 7) and, in certain cases, on the growing of some specified crops (column 8), on numbers of cattle, pigs and goats raised (column 9) and on number of chickens raised (column 10). The agricultural households will be stratified into three (3) categories: A, B and C.

Category C: Area under crops 5.0 - 19.99 ha. This category will also include:

1. Households reporting any of the specified crops when only 1 or 2 households in the SEA report the specified crop(s), even if they do not qualify basing on area under crops.
2. Households raising 50 or more cattle, 20 or more pigs, 30 or more goats, and/or 50 or more chickens, even if they do not qualify basing on area under crops.

Category B: Area under crops 2.0- 4.99 ha. This category will also include households reporting any of the specified crops, when 3 to 5 households in the SEA report the specified crop(s), even if they do not qualify basing on area under crops.

Category A: All the remaining agricultural households with area under crops less than 2.0 hectares.

Stratification Procedure

When stratifying households, start with category C.

households that reported area under crops (column 7) of 2.0 to 4.99 hectares and put a mark (x) in category C column under column 11 in the row of each of such households.

2. Identify the households that reported any of the specified crops (column 8). Count such households. If there are only 1 or 2 such households, include them in Category C by putting a mark (x) in category C column under column 11 in the row of these households.
3. Using column 9, identify households that reported raising 50 or more cattle, 20 or more pigs, 30 or more goats and treat these in the same manner as explained in '2'.
4. Using column 10, identify households that reported raising 50 or more chickens and treat these in the same manner as explained in '2'.

Category B

1. Identify households that reported area under crops (column 7) of 2.0 to 4.99 hectares and put a mark (x) in category B column under column 11 in the row of each such household.
2. Identify households that reported any of the specified crops (column 8). Count such households. If there are 3 to 5 such households, include them in Category B and put a mark (x) in category B column under column 11 in the row of each of these households.

NOTE: if there are more than 5 households in an SEA reporting any of the specified crops, these households will not automatically be included in category 'C' OR 'B' but stratification will be based only on area under crops.

Category A

First critically check the stratification of households in category C and B and when you are satisfied that everything is in order, all the remaining households have area under crops of less than 2 hectares, are among the more than 5 households reporting any of the specified crops, and have reported raising less than 50 cattle, less than 20 pigs, less than 30 goats and less than 50 chickens. All such households belong to category A. Put a mark (x) in category A column under column 11 in the row of each of these households.

Serial Numbers, within each category, following where you put (x). The sampling serial numbers will sequentially be assigned, starting with '1' in each category. In addition assign serial numbers to 'NON AGRIC' households in the appropriate column in col. 11 and then do the same for 'NON CONTACT' and 'REFUSAL' households in the 'NON CONTACT' column.

- NOTE: (a) The sum of the last sampling serial numbers in categories A,B and C must be equal to the total number of agricultural households listed in the SEA.
- (b) The sum of the last serial numbers in col. 11 must be equal to the last household serial number in the SEA.

Summary of Households Listed in SEA

- Column 1.** Gives the categories as allocated to households in Col. 11 of the Listing Book. Note that 'Non-Contact includes refusals.
- Column 2.** Enter, against each category, the serial number assigned to the last household in the category (Col.11).

Enter the sum of categories A,B,C and 'Non Agric' against 'SUB-TOTAL'. This will give the number of households that gave complete response during listing.

Add 'Non Contact' to 'Sub-Total' and enter the result against 'TOTAL'. This gives the total number of households in the Sea i.e it should be equal to the serial number assigned to the last household listed.

- Column 3.** Complete this column by distributing 'Non - Contact' households among categories A,B,C and 'Non Agric' proportionately. To proportionately allocate number of 'Non - Contact' household to Category A, divide the number of households entered for Category A by the 'Sub-Total and multiply the result by the number entered for 'Non-Contact'. Enter the rounded whole number in this column against Category A. Follow the same procedure for Category B,C, and 'Non-Agric'. Add the entries and enter the sum against 'Sub-Total'. This

... to the one entered against 'Non-Contact' in Col

Column 4. For Category A, add the number in Col.2 to that in Col.3, and enter the result in Col4. Follow the same procedure for Categories B,C and 'Non-Agric' to complete this column. Add the entries in the column and enter the result in the 'TOTAL' row. This total must be equal to the 'TOTAL' entry in Col 2.

Columns 5,6,7. Completing of these columns is explained under 'Sample households Selection'. Sample households will be selected from categories A,B and C under Col. 11 of the Listing Book. This means that the sample will be drawn only from agricultural households that gave complete response during the listing exercise.

Sample Household Selection

The total sample size in each SEA is 20 households. Where all the three categories have adequate numbers of households (10 or more) listed, the sample households distribution will be, C-10, B-5 and A- 5.

In cases where there are shortfalls in category C, include all households in this category and allocate the difference from 20 equally to categories B and A. if the differences from 20 cannot be equally allocated to the two categories, allocate category B one (1) more sample household than category A

Where there is no household in category C, allocate 10 sample households to category B, and 10 to category A.

Where there is no household in category C and less than 10 in category B, include in the sample all those in B and increase the allocation in category A to make up for the shortfall from the required number of 20 sample households.

Where all households in an SEA fall in category A, select all the required 20 sample households from that category

Examples of Sample Distribution

Households Listed			Sample Distribution		
<u>A</u>	<u>B</u>	<u>C</u>	<u>A</u>	<u>B</u>	<u>C</u>
51	22	15	5	5	10
70	22	2	9	9	2
100	14	1	9	10	1
102	12	0	10	10	0
111	7	0	13	7	0
89	0	0	20	0	0

Systematic Sampling Procedure

The allocated number of sample households to each category will be selected independently using the following procedure:

1. Divide the total number of households listed in the category by the number of households to be selected (according to sample allocation) to give the Sampling Interval (SI). Calculate this to two (2) decimal places.
2. From the table of random numbers, get a random number (RS) between '1' and the SI, inclusive. The random number obtained will give the first household that will be in the sample.
3. Add the SI to the random number (RS), and the integer part of the sum will give the second household to be in the sample.
4. Continue with the procedure, adding SI to each successive sum until you have all the allocated sample size for the category.
5. Put a circle round each sampling serial number (column 11), in the listing book, corresponding to the numbers you have worked out for each category. The sampling serial numbers circled will indicate the households selected for the sample.

to the 'LIST OF SELECTED HOUSEHOLDS' sheet, the household serial numbers (column 2) of the selected households.

Summary of Households Listing and Sample Household Selection

Category (1)	H/H's Listed (2)	Non-contact allocation (3)	Adjusted list of H/H's (4)	Sample size (5)	Sampling interval (6)	Random Start (7)
A	91	7	98	6	15.17	7
B	47	3	50	7	6.71	3
C	7	1	8	7	1.0	1
Non agric	3	0	3			
Sub total	148	11				
Non contact	11					
Total	159		159			

Cat. A

Cat. B

Cat. C

$$SI = 91/6 = 15.17$$

$$SI = 47/7 = 6.71$$

All 7

$$RS = 7 \quad 7$$

$$RS = 3 \quad 3$$

$$7 + 15.17 = 22.17$$

$$3 + 6.71 = 9.71$$

$$22.17 + 15.17 = 37.34$$

$$9.71 + 6.71 = 16.42$$

$$37.34 + 15.17 = 52.51$$

$$16.42 + 6.71 = 23.13$$

$$52.51 + 15.17 = 67.68$$

$$23.13 + 6.71 = 29.84$$

$$67.68 + 15.17 = 82.85$$

$$29.84 + 6.71 = 36.55$$

$$36.55 + 6.71 = 43.26$$

In category A, households bearing sampling serial numbers 7, 22, 37, 52, 67, and 82 are selected. In category B, households bearing sampling serial numbers 3, 9, 16, 23, 29, 36 and 43 are selected. In category C all (7) households are selected.

6.1 Approaching an interviewee

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. The interviewer can mention that he/she is merely the eyes and ears of government.

Identification information

Items 1 through 11 will be entered on each questionnaire prior to the interview. The Supervisor should ensure that the interviewer completes all the entries.

1. Province

Write, in the space provided, the name of the province in which you are operating, and enter the province code in the box provided.

2. District

Write, in the space provided, the name of the district in which you are operating, and enter the district code in the boxes provided.

3. Constituency

Write, in the space provided, the name of the Constituency in which you are operating, and enter the Constituency code in the boxes provided.

4. Ward

Write, in the space provided, the name of the Ward in which you are operating, and enter the Ward code in the boxes provided.

5. Region

Enter the region code either '1' for Rural or '2' for Urban in the box provided.

6. Census Supervisory Area (CSA)

Your supervisor will give you the number of the CSA in which your work area is located. Enter this number in the boxes provided.

Area (SEA)

to you for enumeration. Enter the number in the box provided.

8. Village/Locality

Write the name of the village/locality in which the household is located. This is also indicated on the **LIST OF SELECTED HOUSEHOLDS**.

9. Household Serial Number

Enter the household serial number as shown on the **LIST OF SELECTED HOUSEHOLDS**, in the boxes provided.

10. Category

Indicate in which category the household's holding falls, 'A', 'B' or 'C'. This information is provided on the **LIST OF SELECTED HOUSEHOLDS**. Enter code '1' for category A, '2' for category B and '3' for category C.

11. Name of Head of Household

Write, starting with the family or second name, the full name of the head of the household you are interviewing. This is also shown on the **LIST OF SELECTED HOUSEHOLDS**. If there is a new head due to death or other reasons, cancel the old name and write the **new head's** name.

12. and 13. Age and Sex of Household Head

Find out the age of the household head and indicate the complete years in the two boxes provided. **Please do not** ask the sex of the household head where it is obvious except where the name of the head of the household who would not be present at the time is unisex, eg Mulenga, Madaliso, Mwinga etc.

14. Marital Status of Head of Household

Find out the marital status of the head of the household and enter the appropriate code in the box provided.

15. Name of Main Respondent

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

Record the response status for the questionnaire by using the following codes:-

1 - Complete Response: i.e., the interview was successfully completed.

2 - Refusal: i.e., the household refused to co-operate.

3 - Household moved out of SEA: i.e., the household established itself or settled somewhere else. If the household moved to another location within the SEA you will still cover the household. If the household moved to another CSA/SEA but is reachable, you will cover the household.

4 - 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 the interviewer visits these non-contact households at least three times during the course of the survey.

5 - Household dissolved: e.g., after divorce or death of the head of the household, the remaining members may be absorbed in other households (and in the case of a one member household, when this person dies, the household is no longer there).

Tick the response status and enter the appropriate code in the box provided.

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

16. 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

Chapter:7 (2004/2005 Agricultural Season)

We would like to know what crops the household has grown this agricultural season. What area is under crops, what variety, source and quantity of seed was used for each crop with an exception of tubers and tobacco, what the expected harvest and expected sales are, how much fertilizer was used and carryover stocks for cereals. This information is important for planning purposes.

1. We would like you to ask whether the household grew any crop including cassava this agriculture season (2004/2005). In HH01, enter '1' if the response is Yes. If the response is No enter '2'.
2. We would like you to ask whether the household grew any crop including cassava in the 2003/2004 Agriculture Season. In HH02, enter '1' if the response is Yes. If the response is No enter '2'. **If the response to both 1 and 2 is NO, end the interview. Otherwise complete the relevant sections of the questionnaire.**

Sketching Fields

This sketching is not to be done to scale. We are only interested in indicating where the fields are in relation to the homestead in the space provided. Please ensure to capture the situation as in **2004/2005**. After sketching all fields for this season, sketch all fields the household had in the 2003/2004 season.

The following steps will guide you in putting up the sketch.

You should identify which direction is East or West. The North is always on the top of the page.

indicates they have grown some crops in the fields first

Step 1: Ask which crops the farmer has grown and list the crops.

Step 2: Ask in how many fields he/she grew each crop.

Step 3: Ask the direction in which each of the fields indicated in Step 2 is in relation to the homestead.

Step 4: Sketch the field in that direction and write the crop(s) grown in it.

Step 5: Assign a number to each field.

- B. Once all the fields have been identified and numbered, establish what the area for each field is. Do not ask about the area before you have identified all the fields. The respondent may not be very keen to identify all the fields for you if he/she feels concerned about such an enumeration of his/her fields. Write the area of each field against each sketch. In some instances, the respondent may not be able to give the area. Use some alternative ways to get the area.

NOTE:

If a field was in crop mixture, the area in such a field should be apportioned to the constituent crops. For example, if a field was planted with maize and groundnuts in mixture, ask the respondent what part of the area would be under maize or groundnuts, if these two crops were to be planted separately within the same field. If the respondent reports that the area of the field is 4 lima and that maize occupies $\frac{3}{4}$ of the field, then the apportionment of this area to the two constituent crops will be:-

Maize is $\frac{3}{4}$ of 4 lima

Groundnuts is $\frac{1}{4}$ of 4 lima

The area under maize is $\frac{3}{4} \times 4 \text{ lima} = 3 \text{ lima}$

The area under groundnuts is $\frac{1}{4} \times 4 \text{ lima} = 1 \text{ lima}$

Show all calculations for such fields against their sketches.

been cultivated with several crops, in Table 1.2 of
7, the area apportioned to each crop will be

considered separately under each respective crop code in the 'CROP' column.

If a crop was grown more than once during the season, indicate the number of times the crop was grown in the sketch. The area to which the crop was grown during the season should be reported by each particular crop.

In the case of cassava planted in mixture with millet, assign the entire area of the field to each of the two crops.

Question 1.1(a) MONO CROPPED FIELDS ONLY (EXCLUDE CASSAVA)

Based on the sketches you have made, summarize the data and record in Table 1.1. For each single crop field, transfer the information on the sketch to 'FIELD', 'CROP' and CF7. Ask the following questions for each field. (Maintain the field numbers assigned on the sketch).

- CF01: Ask the respondent what main tillage method was used in the field. Enter the code of the tillage method used in CF01, using the code list provided.
- CF02: Ask the respondent when tillage was done. If tillage was done before the rains enter '1'. If tillage was done during the rains enter '2'
- CF03: Ask the respondent if plant or animal manure was applied to the field. If the response is Yes enter '1'. If the response is No, enter '2'.
- CF04: Find out how much lime was applied to the field. Enter the quantity in Kgs. If lime was not applied to the field, enter '0'.
- CROP:** Enter the code of the crop grown in the field, using the crop code provided.
- CF05: Record the area of the field from the sketch.
- CF06: Record the unit of measure code for the area reported in CF5.
- CF07: Find out if the whole area of the field is harvested/expected to be harvested. If the whole area of the field is harvested/expected to

- enter the area as in CF7 and go to CF12. If not the field is harvested/ expected to be harvested, then find out how much of the field is harvested/expected to be harvested and enter the response in the column.
- CF08: Record the unit of measure used for the area reported in CF9.
- CF09: Find out the main reason for not harvesting the whole area of the field? Enter the appropriate code for the main reason using the code list provided
- CF10: Find out **what seed variety** of the crop the household used in the field. Record the variety using the code list provided.
- CF11: Find out what **quantity of seed** was planted for each crop. Record the quantity. Exclude tubers and tobacco.
- CF12: Enter the unit code of the quantity recorded in CF13, using the code list provided.
- CF13: Find out how much basal dressing was applied to the field. Enter the quantity in Kgs. If no basal dressing was applied to the field, enter '0'.
- CF14: Find out how much top dressing was applied to the field. Enter the quantity in Kgs. If no top dressing was applied to the field, enter '0'.
- CF15: Record the **quantity already harvested/expected** to be harvested of the crop grown in the field.
- CF16: Record the unit of measure used for the quantity reported in CF15. Enter the unit code as provided in the code list.

Question 1.1(b) MIXED CROPPED FIELDS ONLY (EXCLUDE CASSAVA)

Based on the sketches you have made, summarize the data and record in Table 1.1b. For each field in crop mixture, transfer the information on the sketch to 'FIELD', and by crop, to 'CROP' and CF05. Ask the following questions for each field. (Maintain the field numbers assigned on the sketch).

2. Cassava Forecast

Based on the sketches made, summarize the data for cassava in the given table. Transfer the information to **FIELD**, **CS02** and **CS03**, then ask questions CS04 to CS06 about each field under cassava (Maintain the field numbers as assigned on the sketch).

- CS01: Find out from the respondent **what variety** of cassava was planted in the field. Enter the variety code using the code list provided.
- CS02: Record the area of the field under cassava.
- CS03: Record the code of the unit of measure for entry in CS02.
- CS04: Find out from the respondent in which year most of the cassava field was planted. Enter the year code as provided at the bottom of the table in the questionnaire.
- CS05: Find out from the respondent in which month of the year most of the cassava in the field was planted. Enter the month code.
- CS06: If the cassava in the field is mature or expected to mature between 1st May 2005 and 30th April 2006. Enter '1' if the response is Yes. If the response is No enter '2' and go to next field or otherwise go to the next section.

3. Crop Forecast Sales (Exclude Cassava and Cash Crops)

This section will include all **FOOD CROPS HARVESTED** or **EXPECTED TO BE HARVESTED**, excluding cassava and cash crops such as tobacco and cotton. The information will be compiled crop-wise.

- Crop:** Identify, from Tables 1.1 and 1.2, food crops that the household has harvested/expects to harvest and enter their Code in this Column
- CFS1:** Find out from the respondent what quantity the household expects to sell or exchange. Enter quantity in this column. Check to make sure sales and/or exchange do not exceed production.
- CFS2:** Record the unit of measure code for the quantity in CFS1

POST HARVEST - 2003/2004

Specific Data Collection Procedures

The data collection for Post harvest Survey 2003/2004 follows the same procedure as that for Crop Forecast Survey 2004/2005. However, ask questions on cassava production and harvest.

It is very important that you clearly draw the attention of the respondent to the situation as it was in the 2003/2004 agriculture season (previous season)

Make sure that you are dealing with the sketches of the fields that were cultivated in 2003/2004 only.

The questions in 4.1 - MONO-CROPPED FIELDS and in 4.2 - FIELDS IN CROP MIXTURE are similar to some of the questions in the Crop Forecast Survey questionnaire. The only difference is the reference period. In completing these questions, follow the procedure as explained in the Crop Forecast Survey manual, but with reference to the 2003/2004-agriculture season.

To collect data on cassava production, first ask how often the household harvested cassava from each field in a month. Secondly, ask what unit of measure (20ltr tin, basket etc) was most commonly used during harvesting. Thirdly, ask the respondent how many of such units can fill a standard 50kg bag of raw cassava. Finally, ask the respondent how many months in a year, they normally harvest cassava.

4.3. Crop Sales and Stocks

Crop-CSS2: These are similar to some questions in Crop Forecast Survey. Follow the data collection procedure as explained in the Crop Forecast survey manual.

CSS3: Find out from respondent whether the household still has any of LAST SEASON'S crop from OWN HARVEST or PURCHASE now i.e. on the day of interview. If the response is Yes, enter '1', if the response is No enter '2' and go to the next crop in the table

CSS4: For the households that answered 'Yes' to a crop in CSS3, find out What quantity of the crop from LAST SEASON'S HARVEST the household still has now (on the day of interview). Enter the quantity

CSS5: Record the unit of measure code in CSS5.

SECTION 5. Cassava Marketing

This section will only be completed for households that reported to have grown cassava in the 2003/2004-agriculture season (the previous season).

- 5.1:** Find out from the respondent whether the household sold or exchanged any CASSAVA from OWN HARVEST since May, 2004. If the response is Yes, enter '1' in HH03. If the response is No, enter '2' and go to 5.8.
- 5.2:** Find out from the respondent what quantity of **raw cassava** the household had sold or exchanged from OWN HARVEST during the period and record the response in HHO4.
- 5.3:** Enter the unit of measure code in HH05.
- 5.4, 5.5: Dried cassava chips.** Follow the procedure as detailed for **raw cassava**.
- 5.6, 5.7: Cassava flour.** Follow the procedure as detailed for **raw cassava**.
- 5.8:** Find out from the respondent whether the household has any **dried cassava** in storage NOW. If the response is Yes, enter '1' in HH10. If the response is No, enter '2' in HH12 and go to 5.11.
- 5.9:** If the response in 5.8 is Yes, ask the respondent what quantity of **dried cassava** the household has in storage.
- 5.10:** Record the unit of measure code in HH12.
- 5.11:** Find out from the respondent whether the household had ever run out of mature cassava in the field since May, 2004. If the response is No, enter '2' in HH13 and END INTERVIEW.
- 5.12:** If the response in 5.11 is Yes, find out which month the household run out of mature cassava in the field and enter the month code in HH14.

END INTERVIEW

APPENDIX 1

CONVERSION TABLE TO Kgs

Maize (1)

	<u>Kgs</u>
90kg bag	103
50kg bag	57
25kg bag	29
10 kg Pocket	10
20 lt. tin	17.4

Rice (3)

<u>Unit</u>	<u>Kgs</u>
90Kg bag	180
50kg bag	100
25kg bag	50
10kg packet	10
20 lt tin	30
90kg bag (unpolished)	85
50kg bag (unpolished)	47
25kg bag (unpolished)	23
20 lt. tin	14

Sorghum (2)

<u>Unit</u>	<u>Kgs</u>
90kg bag	98
50kg bag	54
25kg bag	27
10kg bag	10
20 lt. tin	16.36
90kg bag (unthreshed)	36
50kg bag (unthreshed)	20
25kg bag (unthreshed)	10.8
20kg tin (unthreshed)	4.09

Millet (4)

<u>Unit</u>	<u>Kgs</u>
90kg bag	99
50kg bag	55
25kg bag	28
10kg bag	10
20lt.tin	16.43
90kg bag (unthreshed)	40
50kg bag (unthreshed)	22
25kg bag (unthreshed)	11.2
20 lt. tin (unthreshed)	6.67

Sunflower (5)

<u>Unit</u>	<u>Kgs</u>
90kg bag	50
50kg bag	28
25kg bag	14
10kg bag	5.56
20 lt. tin	8.33

Mixed Beans (11)

<u>Unit</u>	<u>Kgs</u>
90kg bag	108
50kg bag	60
25kg bag	30
10kg bag	10
20 lt. tin	18.05

APPENDIX 2

CONVERSION TABLE TO Kgs

Groundnuts (6)

Unit	<u>Kgs</u>
90kg bag	95
50kg bag	53
25kg bag	26
10kg bag	10.56
20 lt. tin	15.8
90kg bag (unshelled)	38
50kg bag (unshelled)	21
25kg bag (unshelled)	10
20 lt. tin (unshelled)	6.4

Cow Peas (12)

<u>Unit</u>	<u>Kgs</u>
90kg bag	108
50kg bag	60
25kg bag	30
10kg bag	10
20 lt.tin	18.05

Soya Beans (7)

Unit	<u>Kgs</u>
90kg bag	90
50kg bag	50
25kg bag	25
10kg bag	10
20lt. tin	15

Sweet Potatoes (14)

<u>Unit</u>	<u>Kgs</u>
90kg bag	104
50kg bag	58
25kg bag	29
10kg bag	10
20 lt.tin	17.5

APPENDIX 3

CONVERSION TABLE FOR AREA ACRES AND LIMAS TO HECTARES

ACRES	HECTARES	LIMA	HECTARES
1/4	.10	1/4	.06
1/3	.13	1/3	.08
1/2	.20	$\frac{1}{2}$.12
2/3	.27	2/3	.17
3/4	.30	3/4	.19
1	.40	1	.25
2	.81	2	.50
3	1.22	3	.75
4	1.62	4	1.00
5	2.02	5	1.25
6	2.43	6	1.50
7	2.84	7	1.75
8	3.24	8	2.00
9	3.64	9	2.25
10	4.05	10	2.50
15	6.08	11	2.75
20	8.10	12	3.00

<p><u>ZAMSEED</u> 1 = Pool 16 2 = MMV 400 3 = GV 412 4 = MM 441 5 = GV 470 6 = GV 408 7 = MM 501 8 = MM 502 9 = MM 601 10 = MM 603 11 = MM 604 12 = GV 512 13 = GV 607 14 = GV 702 15 = GV 703 16 = GV 722 17 = MM 752 18 = GV 704 19 = GV 61 Yellow</p> <p><u>PANNAR</u> 20 = PAN 6363 - Chipolopolo 21 = PAN 6549 - Mr. Reliable 22 = PAN 67 - African Queen 23 = PAN 6243 - in a class of its own 24 = PAN 64 25 = PAN 6479 26 = PAN 87 27 = PAN 6573 28 = PAN 6777 29 = PAN 61 30 = PAN 6823 31 = PAN 14 - Yellow maize</p>	<p><u>D-CO</u> 32 = SC 709 33 = SC 713 34 = SC 715 35 = SC 711 36 = SC 701 37 = SC 707 38 = SC 627 39 = SC 625 40 = SC 601 41 = SC 621 42 = SC 501 43 = SC 515 44 = SC 513 45 = SC 517 46 = SC 521 47 = SC 401 48 = SC 403 49 = SC 405 50 = SC 407 51 = SC 704 - Yellow 52 = SC 706 - Yellow 53 = SC 602 - Yellow 54 = SC 604 - Yellow 55 = SC 506 - Yellow 56 = SC 206 - Yellow</p> <p><u>MRI</u> 57 = MRI 724 58 = MRI 744 59 = MRI 734 60 = MRI 651 61 = MRI 634 62 = MRI 624 63 = MRI 611 64 = MRI 614 65 = MRI 594 66 = MRI 514 67 = MRI 455 68 = Local maize</p>	<p>69 = Hybrid maize 70 = Recycled hybrid maize 71 = OPV maize</p> <p>Sorghum <u>ZAMSEED</u> 75 = KUYUMA 76 = SIMA 77 = ZSV 15 78 = WP 13</p> <p><u>SEED-CO</u> 79 = MACIA (OPV - white) 80 = NS5511 (Hybrid - brown)</p> <p>81 = Local sorghum 82 = Hybrid sorghum 83 = Recycled hybrid sorghum 84 = OPV sorghum</p> <p>Sunflower <u>ZAMSEED</u> 85 = MILIKA 86 = RECORD</p> <p><u>PANNAR</u> 87 = PAN 7369 88 = PAN 7353 89 = PAN 7351</p> <p>90 = Local sunflower 91 = Hybrid sunflower 92 = Recycled hybrid sunflower 93 = OPV sunflower</p> <p>Groundnuts <u>ZAMSEED</u> 94 = CHIPEGO 95 = MGV-4 96 = CHALIMBANA</p>	<p><u>SEED-CO</u> 97 = FLAMINGO 98 = NYANDA</p> <p>99 = Local groundnuts 100 = Hybrid groundnuts 101 = Recycled hybrid groundnuts 102 = OPV groundnuts</p> <p>Soyabeans <u>ZAMSEED</u> 103 = KELEYA 104 = MAGOYE</p> <p><u>SEED-CO</u> 105 = STORM 106 = SOLITAIRE 107 = SOPRANO 108 = SAFARI</p> <p>109 = Local soyabeans 110 = Hybrid soyabeans 111 = Recycled hybrid soyabeans 112 = OPV soyabeans</p> <p>Cowpeas <u>ZAMSEED</u> 113 = LUTEMBWE 114 = BUBEBE</p> <p>115 = Local cowpeas 116 = Hybrid cowpeas 117 = Recycled hybrid cowpeas 118 = OPV cowpeas</p>	<p>Tobacco <u>BARLEY</u> 119=Bunckett 120=BO 1 121=BO 2 122=BO 3 123=A 1 124=A 2 125=A3</p> <p><u>VIRGINIA</u> 126=HG 127=T26 128=RK326 129=T29</p> <p>Cotton 130= F135 131= Chureza 132= Ngwezi 133= CDT 1</p> <p>All other crops 134= Local 135=Improved</p> <p><u>SEED COMPANIES</u> 136=ZAMSEED 137=PANNAR 138=SEED-CO 139=MRI</p> <p>140 = Do not know</p>
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