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1996

# Manual for RiskMap Field Enquiry and Data Analysis

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# **Manual for RiskMap Field Enquiry and Data Analysis**

(Draft Version)

September 1996

by William Moseley and Julia Earl

SAVE THE CHILDREN FUND UK

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## **I. Introduction**

This manual has been put together based on the experience of the two authors in collecting and analysing information as part of phase III of The Save the Children Fund (UK)'s RiskMap Project. The manual has been designed to accompany a week long training course in which participants learn how to collect data from key informants as well as how to analyse and write up a report based on the information that has been collected. A separate training course and/or user's manual is necessary in order to understand how to operate the RiskMap Software Package for analysing vulnerability to hunger. Funding for this manual came from the British Overseas Development Association (ODA) as part of a grant to institutionalize the RiskMap approach in the Binga and Kariba Districts of Zimbabwe. We would like to express our thanks to the Save the Children Fund (UK) programme in Zimbabwe as well as the GOZ Department of Social Welfare for their interest in and support of the RiskMap Project.

## **II. Background on the SCF(UK) RiskMap Project**

The SCF(UK) RiskMap Project was begun in March 1992 at the suggestion of the Director of the FAO Global Information and Early Warning System (GIEWS) with European Community (EC) funding. The initial aim of the project was to devise a methodology for introducing economic and social information into the calculation of local food deficits, in order to go beyond the conventional food balance approach which looks only at national production, food stocks, population and consumption data. This method does not always take account of how food production varies across a country, nor of how people in different areas gain access to food. Thus, on some occasions, the risk of hunger in a given area has been exaggerated, whilst on others, acute dangers of certain groups have been masked by a picture of overall sufficiency. Respecting these limitations, an approach has been developed which centres on the question of how people survive and on the economic and social connections that enable them to do so. Sources of information include existing documentation combined with 'key informant'<sup>1</sup> data. The approach has been translated into a computer program called RiskMap which seeks firstly to make information (of a type normally available only to the 'expert' or found in the 'grey' literature of agencies or in archives) easily available to the average user; and secondly, to allow the user to manipulate a basic set of this information in order to estimate the possible effect on food supply of a particular event or events affecting the specific population.

The project is currently in its third phase of EC funding. By the end of 1996, the project will have revised and improved the RiskMap software and developed a database for 15 African countries. This database will include six countries from the SADC (Southern African Development Community) region: Angola, Lesotho, Malawi, Mozambique, Tanzania and Zimbabwe. In Zimbabwe, the ODA has provided separate funding to institutionalize the RiskMap approach at the District level in Binga and Kariba.

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<sup>1</sup> Individuals who are well placed to know about the functioning of a rural economy. The best key informants have a grounded understanding of local peculiarities as well as a picture of the broader context. These persons could be village leaders, extension agents, traders, retired civil servants living at the village level, etc.

### **III. A Preliminary Explanation of Basic Concepts**

In this section a few basic concepts underlying the RiskMap approach are explained as background to a more detailed discussion of the interview format.

Household Food Economy: Economy is “the management of the income, expenditure, etc of a household, business, community or government.”<sup>2</sup> A household food economy therefore regards the management of production, distribution and consumption of food within a household. In other words, the household food economy is the system of food production, food resources management, food purchases and the cash income to fund these. It is possible to model these systems to the extent that food consumption is governed by some basic nutritional principles. Also, the range of strategies for acquiring food and income in a specified rural area are often limited. Household food economy analysis is distinct in its focus on the management of food resources and food production. However, it overlaps with more conventional economic analysis when addressing food purchases and the cash income required to buy them. (In simple terms, household food economy examines how rural people feed themselves.)

Food Economy Zone (FEZ): A food economy zone is a geographic area or group of people wherein the overwhelming majority of households can be said to gain their food and cash income through the same methods. The population of each FEZ is subdivided into three socio economic types: rich, mode and poor. Within a FEZ, any two households in the same socio economic strata should attain food and cash income through the same methods and in roughly the same proportions.<sup>3</sup> FEZs are often discrete geographical units, but in some cases several different FEZs may occupy the same area (e.g. fishing people living in the same geographical area as agricultural people). It is also not necessary that a FEZ be connected geographically. For example, differing land tenure systems in the same area (e.g. communal and commercial) may mean that areas with basically the same food economy are split up from one another. Despite being geographically separated, the individual areas may be part of the same FEZ.

#### Food Self-Sufficiency

Food self-sufficiency has typically been used to describe a situation at the national level wherein a country produces enough grain to satisfy its domestic food needs. A country would not be food self-sufficient if it must typically import food crops in order to satisfy its own food needs. While less frequently used at the household level, a household would be food self-sufficient if it typically produces enough grain to satisfy all of its annual food needs.

#### Food Security

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<sup>2</sup>Webster’s New World Dictionary, 1988. Simon and Schuster, New York, NY.

<sup>3</sup> Clark, Paul. 1996. RiskMapping Report, Kenya - Turkana District, SCF(UK). Mimeo London.

A common definition for food security is “Physical and economic access for all people at all times to the basic foodstuffs that they need.”<sup>4</sup> (This definition includes the concepts of availability of adequate food supplies, stability of the supplies in local markets and access of all households and individuals to these supplies.<sup>5</sup> The key difference between food security and food self-sufficiency, is that food security encompasses both food purchase and own food production. Even though a household may not grow enough crops to satisfy its own needs, the household is food secure if it earns enough income to purchase its necessary food requirements. To cite a well known national case, Japan is not food self-sufficient but it is certainly food secure. The RiskMap programme is concerned with food security and not food self-sufficiency.

### Household

A household is a group people (who are typically related) who often share a common pot of food and combine a portion of their financial and food resources together. Depending on the culture and area in question, households may either be extended (including grandparents, two brothers and their families, etc) or nuclear (parents and their children). In some instances, a household may be split into two units with the wife living in one area and the husband in another. The key question as to whether or not these two units constitute a single household is the degree to which these two parts put together food and financial resources to support one another and raise children. In food security terms, one is particularly concerned with the degree to which the two units systematically help one another in difficult years. Although legally married, two completely autonomous partners who fail to aid one another in bad years would not be considered a single household in food security terms. The case of polygamous households is related to this discussion. The degree to which a husband provides support to his co-wives will determine whether all of the wives and their children belong to one large household or whether each wife (except the one currently with the husband) is ultimately a female head of household with her own children.

Female-Headed Household: A female-headed household is one in which the woman head (mother, aunt, grandmother, sister, etc.) acquires the food and income needed to maintain that household without any assistance from a male partner (husband, boyfriend, father, etc.). A female-headed household may be led by a widow, the oldest sister of orphans, a married woman whose husband is no longer present or contributes to the household, a co-wife in a polygamous household a single mother or any of a variety of circumstances similar to these.

Risk: The risk of an event is the likelihood of that event occurring within a defined period of time. Areas "at risk" of drought are those where failure of the rains is a relatively common occurrence.

Vulnerability: Households (or areas) are said to be vulnerable to an event if they have relatively little capacity to withstand its effects. Households vulnerable to drought, for

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<sup>4</sup> Definition developed by the 1983 Committee on World Food Security.

<sup>5</sup>"Food Security Information Systems: Concepts and Issues," FAO, Rome, July 1996, pp. 1-2.

example, have limited alternatives to replace the crops or livestock production they have lost.

**Baseline Vulnerability:** The fundamental vulnerability of a community to food insecurity during normal years must first be understood in order to conduct future analysis. Therefore, the objective is to understand how families obtain food and cash income in a "normal" year, and how these sources of income might change in a "bad" year.<sup>6</sup> This information provides the baseline. This baseline information or data provides the context within which an analysis may be made of current or future food insecurity. The purpose of this manual is to provide sufficient guidance in order to compile a database on baseline vulnerability.

**Participatory Rural Appraisal (PRA) Techniques:** A collection of techniques designed to help illiterate informants fully express their understanding of a situation. PRA is founded on the concept that research may be conducted in a participatory rather than extractive format. It also views the research participants as (the most) knowledgeable informants while researchers are facilitators and not experts. If done properly, use of these techniques should engender a sense of pride in informant's knowledge. While the RiskMap process does not involve the full PRA approach, it uses a variety of PRA techniques in its village level interviews.

#### **IV. The Key Informant Interview Process**

RiskMap delineates food economy zones and develops profiles for these zones based on information garnered through conversations with key informants as well as from published studies and official sources of data. As such, individuals compiling a database on baseline vulnerability for the RiskMap system will have to master the key informant interview process. The authors of this report would be the first to admit that the process of interviewing key informants is more craft than science. While certain research philosophies have emphasized that the interviewer should be a passive collector of information, the authors believe that the interviewer is an integral part of the process. As such, the interviewer should not be afraid to cross-check answers with previous responses, to question an answer if it does not make sense, to re-phrase a question if it appears not to have been understood. Therefore, the conduct of a key informant interview is a skill that must be developed over time.

##### **A. Who is a Key Informant?**

In the world of information about poor, rural populations, a "key informant" is someone who is consulted because it is believed he or she has sufficient knowledge of a group or given population, or can usefully describe a subject area (e.g. local market patterns).

Depending on the information required, key informants can be found at any level: village, district, provincial or national. They may be government workers or NGO (Non-Governmental Organization) employees, teachers, representatives from village organisations (farmers' union, womens' union), traditional leaders, traders or religious leaders.<sup>7</sup>

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<sup>6</sup>Reference is made to "normal" and "bad" years within the relatively recent past.



### B. General Advice on Interviewing Civil Servants and NGO Employees

Two important groups of individuals that one should try to interview during the RiskMap data collection process are civil servants and NGO employees. These types of key informants often fall into two groups: 1) those who work in the field and have a grounded understanding of a specified geographical area and the people who live there, and 2) individuals who are higher up in an organization with a general understanding of a large zone but lack information on the specifics of a smaller area. The first type of key informant is ideal for doing a lengthy interview in which one tries to develop a full profile for a zone. The second type of key informant is more suited to a general discussion about suitable boundaries for potential food economy zones. While it is not always the case, one would typically try to have a series of general discussions to set out the potential boundaries for food economy zones before one begins more lengthy interviews to develop profiles for these zones. It is, however, important to constantly cross check the validity of a FEZ by asking each new key informant if they agree with the boundaries that are being proposed and the defining characteristics of that FEZ. Civil servants whom we have typically found to be the most helpful are those working for the agricultural, natural resources, forestry and fisheries ministries. However, one should not limit themselves to these services as many other types of civil servants often have very valuable experience as well. For example, school teachers and health workers who have been stationed in an area for several years often know a great deal about how local people are living. When interviewing civil servants it is often helpful to ask where they have previously worked or what part of the country they are from. If a person has recently arrived at their current post, it is possible that he/she would know more about another area where he/she has worked or lived longer than their current post. In this case, it may be appropriate to interview them about that area. If they have lived at their current post for more than a year then they may be interviewed about this area. A full profile interview will typically take between 1.5 to 2 hours. The length of the interview will often depend on how quickly the key informant grasps the concepts (and feels at ease with the interview format) as well as how accomplished the interviewer has become in delivering the questions.

### C. Tips for Interviewing Groups of Civil Servants/NGO Employees

Interviewing a large group of civil servants and/or NGO employees often presents challenges that are not present in an interview with one to two persons. There may be a variety of opinions and therefore it may be difficult to build consensus. This said, one will often have a much stronger and more representative interview in such situations. Generally speaking, the interview is conducted in the same way that it would be done with an individual. A difference is that it is important to ask after each question if everyone is in agreement with the answers that have been put forward. In particular, the interviewer should identify members of the group who have not spoken and ask them individually to present their perspective on a given question. In a group situation, certain individuals may dominate the discussion. In such cases it is important to politely yet persistently solicit the opinion of a

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<sup>7</sup>The SCF(UK) Household Food Economy Approach to Food Security Assessment, pp. 12.

variety of members in the group.<sup>8</sup> In order to build consensus around percentage figures, we have found it helpful to write the categories (for sources of food or cash) down on a large piece of paper where everyone in the group can clearly see them. One then simply asks everyone present as a group to contemplate each category and estimate a percentage figure together. These interviews will often take longer than an interview with one or two persons.

#### D. General Advice for Village Interviews

The key difference between villagers and civil servants/NGO employees is that the former have typically received less formal education.<sup>9</sup> As such, RiskMap uses a number of PRA techniques to solicit information from these type of key informants. Rather than asking an abstract question, the idea is to materialize a question through the use of stones or drawings on the ground. The ability to see the question represented tangibly makes it easier to understand. These techniques also facilitate participation among a larger group of people as everyone can see the stones or drawing as well as the fact that active participation of the group is required to place the stones in response to a question.

It is very important for village level interviews to have an even mix of both men and women, young and old. If one finds that women are not participating in the interview then do not hesitate to politely encourage them to become more involved. If one finds that a particular individual is monopolising the discussion, diplomatically find a way to include other participants. Village level interviews should have a minimum of 6 persons and may go up to as many as 20 or 30 individuals. It is often helpful to have the headman or chief of the village involved in the interview as this will put people more at ease. Advice on how to introduce yourself to the village is detailed below. A village interview can vary in length from 2.5 to 4 hours. As before, the length of the interview will often depend on how quickly the villagers grasp the concepts as well as how accomplished the interviewer has become in delivering the questions. Remember that a short or long interview is not necessarily good or bad. If many villagers are participating (a good thing), an interview can often take a longer period of time.

#### **V. The RiskMap Interview and its Component Questions**

The purpose of this section is to present the major questions to be asked in a key informant interview as well as an explanation of each question coupled with tips on how to best solicit this information.

##### A. Introducing Yourself and the RiskMap Project

It is always important not to presume that an individual or group will be willing to speak with you. With civil servants and NGO employees is often preferable to set up an appointment before one tries to see the individual. If one is in a district for the first time, it is often

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<sup>8</sup>It is not however necessary to solicit the opinion of each and every individual following each question. What one is looking for is a good mix of participation.

<sup>9</sup>Therefore, villagers' perception of questions might vary from those of professionals with more formal education. Remember, the problem does not lie with the respondents' inability to understand the researcher, but rather with the researcher's to make him or herself understood.

advisable to see the District Administrator to explain the project before proceeding to any other individuals. Whenever possible, it is also courteous to set up appointments with villagers in advance.

Before beginning the interview, it is important to introduce yourself, explain the RiskMap project and the objectives of the interview. Civil servants and NGO employees will sometimes be concerned that they must be in a position to provide statistical information. It is important to emphasize that RiskMap is not looking for official statistics, but rather a key informants general understanding of an area.

Once one has gained permission from a village to conduct an interview, we have found it helpful to explain from the start that the villagers have nothing to gain materially from the interview (although they may find the exercise intellectually rewarding). This is important to explain as villagers are often under the impression that they may receive assistance from an NGO if they answer questions in a certain manner. Also assure villagers that their anonymity regarding specific answers will be guarded (for example, villagers may be particularly concerned about their answers regarding hunting). As the project will average the answers from several different interviews, the responses from a specific village will never be traceable in the final report.

The final point to make is that we are interviewing a group of villagers about the situation in the village or ward. While one will ask the village about the situation of the rich, mode and poor, one is not interviewing a specific household about their particular situation.

#### B. Question by Question Explantation of the Interview Guide

All of the questions below are the same ones that appear in the interview guide or protocol found in Appendix I. We have organised the questions below in the order that we have typically been asking them in the interview. As such, after some general introductory questions we have tended to ask all of the questions pertaining to the poor, followed by all of those pertaining to the rich and ending with all of those pertaining to the mode. We have found that key informants often have an easier time discussing the mode after the two extremes have been identified (i.e. rich and poor). In the interview guide you will notice that the questions on rich, mode and poor are often grouped together (rather than listed sequentially). This has been done so that the interviewer may cross check answers for the rich, mode and poor and more easily notice any inconsistencies during the interview. Given the different ordering of questions, the interviewer should realize that it is normal to be flicking back and forth between pages when doing the interview. Each time a question is explained, it is referenced to the question number in the interview form or protocol.

For each question below we have made suggestions on techniques that might be used to gather the information. Following each question, section (a) pertains to suggestions for a civil servant\NGO interview and section (b) for a village interview. These suggestions merely reflect the experience we have garnered ourselves and the interviewer should by no means interpret these as hard and fast rules. Once the interviewer has a firm grasp of the concepts and the questions, he/she should feel free to innovate and develop better techniques

for gathering information (we have found this to be one of the most enjoyable aspects of the process).

### *1. Basic Reference Information (Questions 1a-h)*

Most of this information can be jotted down before the interview actually begins. While such information may seem unimportant, one will be amazed by how much one can forget about a specific interview after one has conducted 20-30. There is nothing more infuriating than having a completed interview for which one cannot remember the place in which it was conducted. If one is unsure of the food economy zone with which one's interview is concerned (Question 1d), write down as precisely as possible the specific geographic area to which it refers.

### *2. Major Food and Cash Crops (Questions 2a and 2b)*

We typically begin with this question because it is an easy one to answer for most key informants.

a. For civil servants and NGO employees we simply ask them to list the major food crops that are grown in the area. Emphasize that we are initially interested in food crops as a key informant will occasionally begin listing every type of crop that is grown. One should be careful to distinguish between what is actually grown and what a government agency or NGO might recommend be grown. RiskMap concerns itself with what is actually grown. Once a list of food crops is developed, then one asks the key informant to list them in order of importance with No. 1 being the most important, 2,3, etc. Once a ranked, food crop list has been developed, then one repeats the exact same exercise for cash crops.

b. For this question, there is really no distinction in the way the question is posed to villagers or civil servants/NGOs. Be aware that villagers may also have a tendency to report what they have been told to grow by government or NGOs rather than what they are actually growing. This can be an even greater problem if you are conducting an interview with the help of a government or NGO extension agent. Villagers might also report what they wish they produced the most of as opposed to what is actually cultivated and harvested. As before, RiskMap is interested in learning what is actually grown.

### *3. Listing of Wild Foods and Their Seasonality (Question 2c.)*

a. Here one wants to learn the names of the major wild fruits and vegetables that are collected by people in the area. In most instances, civil servant/NGO key informants will be more familiar with the local name of a fruit or vegetable rather than the botanical name. Wherever possible list the local, English and botanical name. For local language names, make sure you list the name of the local language (e.g. Tonga, Shona, etc). Forestry or natural resource agents are often more likely to know the botanical names of wild plants. During the report writing stage, one can generally look up the local name in a reference book in order to list the botanical name. Once a list of wild fruits and vegetables has been developed, ask the key informant to list the months in which these fruits or vegetables would be available. Key informants will occasionally initially respond by saying that there are no wild foods available in the area. This may be true, but one should always probe for the names of any plants (even

though wild foods may not be very prominent in the area).

There is an important distinction to be made between wild foods and famine foods. Wild foods are plants that cause no physical harm to humans and will often be collected in normal as well as bad years. On the other hand, famine foods are plants that are reserved for collection in very bad years. These plants may often not be suited for human consumption and may even be dangerous. People are driven to these foods out of desperation. RiskMap is only concerned with wild foods as it does not consider famine foods to be a viable coping strategy.

b. In many instances, villagers will be better able to answer this question than civil servants or NGO representatives. As would be expected, villagers will generally only know the local names of these fruits and vegetables. As above, once a list of names has been developed ask the villagers during what months the wild foods would be available.

*4. What is the average annual rainfall in the area? What is the average household size in the area(Questions 2d-e)*

These questions will often be posed to civil servant/NGO employees in the same manner. Question 2d: Average annual rainfall is typically only a question that civil servant/NGO key informants will be able to respond to. Do not dwell on this question as the answer will often be available from an official, published sources. The answer to this question should be expressed in terms of millimetres (mm) of rainfall per year. Question 2e: What is the average household size in the area? In other words, what number of people are found in the typical household in the area? Be aware that household size can sometimes be affected by cultural factors (e.g. polygamy). Later on in the interview, the researcher might ask if there is any difference between rich, typical and poor households or between different ethnic (tribes) or religious groups living in the same area.

*5. Establishing what is a normal year (Question 3a).*

The majority of the information in the RiskMap database is representative of a "normal year" and as such it is very important in the early stages of the interview to establish in the mind of a key informant what exactly a normal year is. In a particular area, most people will be able to cite years that were particularly bad or particularly good. For RiskMap, a normal year is an average or in-between year, i.e. a year that was not so good and not so bad. Normal refers to normal, average or in-between levels of the major sources of food and income. In most instances, one can focus on levels of agricultural production as the primary element to be considered when determining a normal year. RiskMap establishes this normal year based on the recent past, i.e. over the last 5 to 6 years.

a. For civil servants and NGO employees, one can often generally explain the concept of a normal year and many people will understand what is being sought after. One can be more thorough about establishing this concept if one is having difficulty communicating the normal year notion or if one wants to be absolutely certain that the key informant has understood. This can be done by writing out the past six agricultural seasons on a piece of paper, e.g. 95/96, 94/95, etc. One then asks the key informant to rank each year from best to

worst. The normal year will be the year that falls somewhere in the middle (ask the key informant to identify which of the years ranked from 2 to 5 he/she would consider to be the most normal or average). Once a normal year has been established, one can often refer back to this year when asking questions that pertain to a normal year.

b. In order to establish a normal year in a village level interview, one uses a PRA technique known as a "Good, Bad, Normal Year Timeline." In order to do this, one draws a long line in the dirt. One then makes 6 evenly spaced ticks. Next to each tick, one writes the years for one agricultural season. As such, the first tick would have the most recent season, 95/96, the second tick the second most recent year, 94/95, all the way back until one reaches the 6th tick with the earliest year, 90/91. Once this timeline has been drawn in the sand or dirt, one gives a pile of 20 stones to the villagers. Carefully explain to the villagers that you would like them to put the highest number of stones next to the better years (in terms of ag production or another major source of food or income, e.g. fish), the lowest number or no stones next to the bad years, and an in-between number of stones next to the average years. In some instances the villagers may not want to use all 20 stones. It is important to have them use all 20 stones so that they are encouraged to show some differentiation between years (there is sometimes a tendency to show good and bad years with little attention to a year that might fall in the middle). Once the villagers have completed the timeline exercise, it is important to ask questions about the way they have placed the stones. Verify that the year with the most stones beside it was the best year. Verify that year with the least stones beside it was the worst year. Select out some years with an in-between number of stones and ask if they would agree that these were in-between, normal or average years. Once one or two years have been identified as normal, these may be used as reference points for the rest of the interview.

**Figure A: Example of Good, Bad and Normal Year Timeline Drawn by Village**

NB: \* = 1 stone

*****	**	****	**	*	****
95/96	94/95	93/94	92/93	91/92	90/91

In the example above, 95\96 would be considered a good year, 91\92, 92\93 and 94\95 bad years, and 90\91 and 93\94 in-between or normal years.

*6. Identifying the Poorest 10% and Richest 10%* (refers to all sets of questions in the interview form dealing with the poor and rich).

In collecting its data, RiskMap looks at three segments of the population: the poorest 10%, the Richest 10% and the mode. The poorest 10% and richest 10% will be discussed in this section while the mode will be addressed later in the manual. When RiskMap examines the poorest 10% and richest 10% of the population it is by no means saying that only 10% of the population is poor or that 10% is rich. Rather, RiskMap is trying to understand the situation of the bottom 10% of households as well as that of the top 10% of households. The information for the poorest 10%, along with that for the richest 10% and mode will

eventually be put together, and through a process of linear interpolation, the computer will develop a profile for the entire population. It is often helpful to discuss the poorest 10% or richest 10% in several different ways in order to get the point across. One can illustrate the point about identifying the poorest 10% by saying that if one had 1000 families in an area, then one is interested in the bottom or poorest 100 families. For village level interviews, it is often helpful to know the number of households in the village or ward. If there were 40 families in the village, then one could ask about the situation of the poorest 4 families. When collecting information about the poorest 10%, it is important to emphasize that one is looking for the average situation of these poorest 10% rather than the situation of the poorest person in the area. In a similar vein, when one is collecting information about the richest 10%, it is important to emphasize that one is looking for the average situation of these richest 10% rather than the situation of the richest person in the area.

*7. Sources of Food & Livestock Numbers for the Poorest 10% (all elements of questions 6 (table I) and 16b-h (table V))*

Sources of food can be divided up into the following categories: 1) own farm grown food crops, 2) own farm raised milk/meat consumption, 3) self-caught fish consumption, 4) self-caught game meat consumption, 5) self-collected wild food consumption, 6) External Food Relief and Internal Food Gifts and 7) Food Purchase.

a)

i. Own Food Crops

With civil servants and NGO employees, one typically starts by asking the key informant to estimate the number of months the poorest 10% of farmers could typically feed their families for with the food crops grown on their farms during a normal year (Question 6a). Within the sources of food table, one notes the number months in the left hand side of the column under poor for "own food crops."<sup>10</sup>

ii. Own Milk/Meat Consumption

The second category is own milk/meat consumption (Question 6b1-6). This only refers to meat and milk that is produced on the households farm and consumed. This category does not include milk and meat that is purchased for home consumption. If animals raised on the household's farm are sold for cash then this is taken into consideration under sources of cash.

In order to facilitate a better answer to the question regarding own meat/milk consumption, we have generally started by asking the numbers of animals that a typical family in the poorest 10% might own (numbers of chickens, goats, sheep, cattle, pigs, etc). This information on numbers of animals should be recorded in the Assets and Savings table (Question 16b-h). Once numbers of livestock owned has been established, then may can ask how frequently a family might be slaughtering the listed animals for home consumption (e.g. a chicken every two months, a goat once a year, and no slaughtering at all of cattle, sheep and pigs). One may also ask if a family is consuming milk from its own cows and how often. The frequency of slaughter and milk consumption is noted within the sources of food table on

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<sup>10</sup>This figure is not always equivalent to the number of months of crops produced. It refers more precisely to the number of months of food consumed which that household has produced. This is due to the fact some of the total amount of crops might be sold or put in storage as food stocks.

the left hand side of the column under poor for each type of animal).

### iii. Fishing

The third food source is fishing which refers to self-caught fish consumption (Question 6c). Ask the key informant to estimate how often they think a family might be consuming fish they have caught and in what quantity.

### iv. Hunting

The fourth food source is hunting which refers to self-caught game meat consumption. If this is a source of food, ask the key informant to list the types of animals that are most commonly caught and how many days of meat the family consumes from that animal. After this, ask the key informant to estimate how frequently a family might be consuming game meat that they caught.

### v. Wild Food

The fifth food source is wild food consumption. One can often refer back to the list of wild foods that had been developed at the beginning of the interview. If poor families do eat some of these foods, try to determine in what months these foods are consumed and how substantial the consumption is (e.g. just as a snack, as an entire meal for the household, as a relish, etc).

### vi. Food Relief and Gifts

The sixth source of food is external food relief and food gifts to the family from within the community. External food relief refers to relief that the poorest 10% of families might typically be receiving in a normal year from the government, NGOs or churches. Be very careful to distinguish between relief that is provided in difficult years and that which is provided in normal years. RiskMap is only concerned with basic levels of food aid that are provided year in and year out to the majority of the poorest 10%. If this is the case, then note the quantity of food (in kgs) that is typically provided per month (and for how many months).

### vii. Food Purchase

The final source of food is food purchase. Simply ask the key informant if the poorest 10% of families would typically be purchasing some food. Food gained in exchange for labour is considered under this category as well.<sup>11</sup> Some key informants might be quick to emphasize that the poor can afford to buy little or no food. Despite that fact, the researcher should encourage the informants to reflect very carefully and come up with an estimate.

The final step is to list on a piece of paper all of the sources of food that the key informant indicated to be relevant in his/her area. As key informants can typically estimate the number of months available from own food crops with a fair amount of accuracy, we have typically translated the month figure to a percentage for the key informants. For example, 6 months of food available from own food crops would be equivalent to 50% of annual food needs (see

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<sup>11</sup>This is because there is often little difference between food purchased with cash from labour or food gained directly as a payment for labour.



conversion table for percentage equivalents of months of food). By writing this percentage down, one is also giving the key informant a point of reference for his/her estimates of the other categories. One then gives the piece of paper with the listed sources of food (including the percentage for own food crops) and asks the key informant to estimate the remaining percentages so they add up to 100%. We have found that use of a piece of paper often allows the key informant to better visualize and estimate the percentage figures for each category.

**Example of Sources of Food for Poorest 10% (civil servant interview)**

Own food crops	50%
Own milk/meat	0%
Wild foods	0-5%
Gift/Relief	5%
Purchase	40-45%
Total	95-105

Note that it is not necessary to come up with a precise figure for a category and that indicating a range is perfectly acceptable (such as was done for wild foods).<sup>12</sup> As a general rule, we have not felt comfortable with a level of accuracy below an increment of 5%. For example, reporting that 54.6% of food comes from a particular category would be misleading as this figure conveys a level of accuracy that is not possible with the key informant process.<sup>13</sup> The total should add up to a range of figures that has its mid-point around 100%. While it would be rare, in some instances the researcher might find that a household amongst the poorest 10% typically produces more than 12 months worth of food crops. In this case, the number of months over 12 should be entered into box 13a of the surplus production and income table. While 12 months of food may translate to 100% of annual food needs, this will generally not be the case as most household diets involve more than mere grain consumption. In such instances it is often wise for the key informant to fill in some of the other categories (estimating own milk/meat, purchase, etc) before estimating a figure for own crops that actually reflects what proportions of a household's annual food intake comes from this source. For example, even if a household produces 12 months of own food crops, they would probably purchase a minimum of 5% of food to cover oil, meat, and relish items.

**Conversion Table: Month\Percentage of Annual Food Need\No of Stones**

Month	%	Stones	Month	%	Stones
1	8.3% or 5-10%	1-2	7	58.3% or 55-60%	11-12
2	16.7% or 15-20%	3-4	8	66.7% or 65-70%	13-14

<sup>12</sup>The range for an individual category should generally not exceed 20%.

<sup>13</sup>One rounds up or down to the nearest increment of 5%.

3	25%	5	9	75%	15
4	33.3% or 30-35%	6-7	10	83.3% or 80-85%	16-17
5	41.7% or 40-45%	8-9	11	91.7% or 90-95%	18-19
6	50%	10	12	100	20

If the researcher or key informant is short on time it is sometimes possible to work out percentages without actually giving a piece of paper to the key informant. This is more feasible when it is a highly simplified situation (e.g. 9 months of food is produced and the only other source of food is purchase).

b. The procedure for the first half of this cluster of questions in a village level interview is much the same. The major difference is that one does not write down the sources of food on a piece of paper and ask the key informant to estimate percentages that add up to 100%. Rather one uses the ground and 20 stones (the importance of this number will be explained later) in place of a piece of paper and percentages. One starts by drawing a table on the ground with all of the source of food categories that were identified by the villagers. One then sets out the stones that would be equivalent to the number of months of food from own food crops (see conversion table above for number of stones equivalent to the number of months). For example, 6 months of food would be equivalent to 50% of annual food needs which is equivalent to 10 stones (or 50% of the total number of stones). One then gives the villagers the remaining stones and asks the group to distribute the stones amongst the different categories. The group must use all of the stones. Once the group has placed the stones in the different categories it is important to clarify that they correctly understood the exercise and that everyone agrees with the manner in which the stones have been placed.<sup>14</sup> See example below of how stones might be laid out by villagers.

**Example of Sources of food for Poorest 10% (village interview)**

Own food crops	*****	(10 stones = 50%)
Own milk/meat		(0 stones = 0%)
Wild foods	*	(1 stone = 5%)
Gift/Relief	*	(1 stone = 5%)
Purchase	*****	(8 stones = 40%)
		Total 20 stones = 100%

NB: \* = 1 stone

The reason that it is important to use 20 stones for the exercise is that each stone will then be equivalent to 5%. Therefore, to determine the percentage value of the stones, multiply the number of stones by 5, e.g. 10 stones x 5 = 50 or 50%. Once everyone has agreed on the

<sup>14</sup>Observe the group to ensure that the decisions regarding the placement of stones is indeed participatory, i.e. more than one person decides, women and men are involved, young and old, better-off and poor.

placement of the stones, the researcher writes the respective percentages (derived from number of stones) in the poor column in the sources of food table (Question 6a-g).

*8. Sources of Cash for the Poorest 10% (Table II, Question 9a-g)*

a. As one did for sources of food, one simply begins by asking the key informant to indicate what the major sources of cash for the poorest 10% of families might be. A key informant will typically list 2-3 sources of cash. In order to prod the memory of the key informant, the researcher should check if there are other sources of income that the key informant may have forgotten to mention. This may be done by going through the categories in the sources of cash table and posing questions such as the following. Do people receive income from local employment (this includes piecework of any kind for another individual within the village) or remittance (any money sent back by a relative working in another town)? Do people sell livestock for cash? Do people sell any types of crops for cash? Are people involved in any types of non-food production (this includes firewood and charcoal sales, thatch sales, craft sales, beer brewing, brick making, etc)? Wild food sales (this includes the sale of wild fruits and vegetables as well as the sale of game meat, insects or mice)? Other trade (this would be the buying and selling of any goods for profit, small businesses, etc)? Fish Sales (the selling of any fish that have been caught by the household)?

Once a complete list of sources of cash has been developed, the researcher writes the sources down on a piece of paper and hands the list to the key informant. The key informant should then estimate percentages for the different categories (reflecting the proportion of income that would come from this source for a typical family in the poorest 10%) so that the total adds up to 100%. As was the case with sources of food, the key informant may put down a range for a category rather than a specific number.

**Example of sources of income for the poorest 10% (civil servant interview)**

Piece Work	50%
Remittance	5%
Vegetable Sales (Cash Crop Sales)	30%
Beer Brewing (Non-Food Production)	15%
Total:	100%

After the key informant has come up with percentages, one can often ask more specific questions about the different questions. If remittance is a source of income, one may ask the names of the towns where these people are most often working. This information can be filled in on the appropriate line for question 17c (table VI). Information on who people are generally working for locally (in terms of piece work or full time employment) can also be filled in on the first line of question 17c (table VI).

b. In village interviews, the researcher develops a list of sources of cash in much the same way that he/she would with a civil servant or NGO employee (i.e. simply by asking the villagers to list sources of income and then double checking other categories that the villagers may not have initially considered). Again, villagers may be keen to emphasize the fact that the poor have very little or no money. Nevertheless, the small amount they earn must add up

to 100% or 20 stones. Based on the sources of income that have been suggested by the villagers, one writes these categories in the dirt. One then gives 20 stones to the villagers and ask them to distribute them among the different categories. More stones represents a higher proportion of income coming from a category while few stones represents a lower proportion of income coming from a category. If the villagers find a category to be totally insignificant, emphasize that they are not obliged to put a stone next to it.

**Example of sources of income for the poorest 10% (village interview)**

Piece Work	*****	(10 stones = 50%)
Remittance	*	(1 stone = 5%)
Vegetable Sales (Cash Crop Sales)	*****	(6 stones = 30%)
Beer Brewing (Non-Food Production)	***	(3 stones = 15%)
Wild Food		(0 stones = 0%)
		Total 20 stones = 100%

**9. Employment and Remittance for Poorest 10% (Table VIc, Question 17c1-4)**

a. As mentioned above, much of this information may be derived while doing the exercise on sources of income. If local work was a source of income then make sure you have noted what type of work these people are typically involved in (Question 17c1). Also make a note of whether this work is seasonal or non seasonal. If the poor are working outside of the village yet within the country, ask the key informants to cite the major towns or areas where they think these people might be working (Question 17c2). Once these towns or areas have been listed ask the key informant to rank them from the most common to the least common destination for poor people in the area.<sup>15</sup> Note if the work in these towns or areas is generally seasonal or full time (by noting yes or no in the seasonal column). If the poor are working in neighbouring countries (e.g. Mozambique, Botswana, South Africa), then note the major countries where they are working and rank them in order of importance (Question 17c3). If the majority of employment in a particular country happens to be of a specific nature then note this as well (e.g. mining). If the poor are working in a distant country (e.g. UK, Saudi Arabia), then note these countries and rank them in order in order of importance (Question 17c4). In all cases, note if the work is seasonal or non-seasonal. Once the researcher has gone through all of the categories with the key informant, write down the work locations (local, within country, etc) that were cited as relevant on a piece of paper. As the key informant to estimate what proportion of the poor workforce is working in each location so that the percentages add up to 100% (this information also indicates the rank of each employment location).

**Example of Employment and Remittance Results for the Poorest 10% (civil servant interview)**

Location	Names of Towns / Countries and Rank	Rank Importance and Percentage	Seasonal? (Y/N)
1. Local	Piece work for wealthier farmers	1 (85%)	Seasonal

<sup>15</sup>Given the significance of the commercial farm sector in Zimbabwe, there are many different possibilities. Some of these areas include: sugar estates in Triangle, coffee, tea or fruit estates in the Eastern Highlands, tobacco estates in Mashonaland.

2. Within Country	1. Bulawayo, 2. Beitbridge (commercial fruit farms), 3. Victoria Falls	2 (10%)	Full time Remittance
3. Neighbouring Country	1. South Africa (Mining)	3 (5%)	Full time Remittance
4. Distant Country	N/A	N/A	N/A

b. When doing a village level interview, one would asks the first part of the question in much the same manner (what types of work are done, what towns or areas are people working in, what is the rank importance of these towns or areas). As was the case for sources of food and income, the difference is that instead of writing the categories down on paper and asking for percentages, one sketches the categories in the dirt and hands the villagers 20 stones. Ask the villagers to place more stones in the locations where more of the employed poor are working and fewer stones where fewer of these people are working. If a category is insignificant then it is not necessary to place any stones next to it.

**Example of Employment and Remittance Results for the Poorest 10% (village interview)**

Local \*\*\*\*\* (17 stones = 85%)  
 Within Country \*\* (2 stones = 10%)  
 Neighbouring Country\* (1 stone = 5%)

*10. Surplus Food Production & Surplus Cash Income for Poorest 10% (Table IV, Question 13a-b)*

a. Surplus food production is simply the number of months above domestic consumption. Domestic consumption, or how much food is consumed within a household, is not necessarily equal to the quantity of food that a household produces. For example, a poor household might produce eight months of food in a normal year. However, they may only keep six months worth of that food for home consumption and sell the remaining two months. Therefore, whatever quantity of food which is produced by a household over and above domestic consumption should be considered as surplus food production. This surplus, expressed in terms of months, should be entered in the poor column of Table IV.

Surplus cash income is a bit more difficult to ascertain. For civil servants and NGOs employees one should start by explaining the concept of surplus income. Surplus income is what remains of total annual income after all normal year expenditures on necessities have been made (food, medicine, school fees, etc). Necessities would not include expenditures on luxury items (radio, cassettes, etc) or atypical investments (such as a new team of oxen, large piece of agricultural equipment). If the key informant agrees that there would be some surplus income, then the researcher asks the key informant to estimate how many months worth of food could be purchased for a family with this surplus income.

b. Surplus food production is ascertained in the same manner with villagers as it is with civil servants and NGO staff. A different procedure is used to come up with surplus cash income. Place a pile of 20 stones in front of the villagers and ask them to imagine that the pile of stones represents total annual income for a typical family in the poorest 10%. Then ask the

villagers to split the pile into two: one pile representing the proportion of income that would be spent on necessities and the other representing the remaining or surplus income. If villagers indicate that there is no surplus income then one may simply put 0 as a response to question 16b (in many instances it would be normal for the poorest 10% not to have any surplus cash income). In fact, if other questions lead the researcher to believe that the poorest 10% would have no surplus income (e.g. a high degree of food purchase, non-lucrative sources of income, limited assets, etc), then it is sometimes possible to entirely skip this question (particularly if one is sensing interviewee fatigue). If villagers do indicate that there is some surplus income, then point to the surplus pile and ask villagers if the stones were translated to cash, how many months could this cash feed a household for?

**Example of villagers representing surplus income for the poor**

Stone Pile 1 (Income spent on Necessities)	Stone Pile 2 (Surplus Income = 10% of total)
*****	
*****	
*****	
***	**

NB: After further questioning, villagers will indicate how many months a household could be fed with the surplus income (which is 10% of total income in the example (2 stones x 5%)).

11. *Foodstocks for Poorest 10% (Table V, Question 16a)*

a&b) Foodstocks refers to food that is stored above and beyond annual food requirements. In order to clarify the concept, one can often ask if there would be any grain in storage at the typical poor household just before the new harvest is brought in. If there is a quantity of such grain (or other staple food crop), then one asks for how many months this would be capable of feeding the family. In many instances, the poorest 10% will not have any foodstocks.

12. *Cash Savings and Assets for Poorest 10% (Table V, Question 16i)*

a&b) Cash savings refers to cash that the typical poor family might have in the bank. If poor families are generally thought to have such savings, ask how many weeks or months a household could feed itself for. Assets refers to movable pieces of physical property they may be sold in a time of crisis. This category does not include animals as these "live" assets are dealt with in a separate section of the interview form. In many instances, houses would not be included in this category as the market for improved homes in rural areas is often very limited. Ask the key informants to list the movable, physical assets that the typical family in the poorest 10% would generally have. Common types of physical assets include: bicycles, radios, farming implements, fishing equipment, furniture, etc.

13. *Sources of Food & Livestock Numbers for Top(Richest) 10% (Table I, all elements of questions 4 and Table V, Question 14b-h)*

Ask this question in the same manner that you would for the poorest 10% (see explanation

no. 7)

14. *Sources of Cash for Top (Richest) 10% (Table II, Questions 7a-g)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 8)

15. *Employment and Remittance for Top (Richest) 10 % (Table VIa, Question 17a)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 9)

16. *Surplus Food Production & Surplus Cash Income for Top (Richest) 10% (Table IV, Question 11a-b)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 10)

17. *Foodstocks for Top (Richest) 10% (Table IV, Question 14a)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 11)

18. *Cash Savings and Assets for Top (Richest) 10% (Table V, Question 14i)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 12)

19. *Identifying the Mode and Income Distribution (Table III, Question 10)*

In statistical jargon, the **mode** is the most frequently occurring observation. This is distinct from the **mean** or **average** (the sum of observations divided by the number of observations) and the **median** (the value of the middle item in a list of statistics that are arranged in order of magnitude). It is important to understand the mode for two reasons. The first is so that interview questions may be targeted to that income group. Secondly, the location of the mode (in terms of a wealth quintile<sup>16</sup>) is needed for the computer program (in order to accurately interpolate values between the poor, mode and rich). In order to better understand the concept of the mode, consider the example below.

**Example of Households in Different Income Groups**

Numbers		*			
of		*			
House-		*			
holds	*	*	*		
	*	*	*	*	
	*	*	*	*	*

<sup>16</sup>The RiskMap computer programme actually operates in terms of wealth deciles. This said, our field experience suggests that key informants are more comfortable in splitting a population up into 5 wealth divisions rather than 10. As such the 1st wealth quintile is equal to the 1st and 2nd wealth deciles, the 2nd quintile is equal to the 3rd and 4th deciles, etc.

	*	*	*	*	*
Cash	\$0-200	\$201-400	\$401-600	\$601-800	\$801-1000
Wealth Quintile	1st	2nd	3rd	4th	5th

In a particular population it might be the case that the wealthiest individuals make close to 1000 Zim Dollars per year and that the poorest make under 200 Zim Dollars. In the example above, this spread of incomes has been divided up into quintiles (fifths). The number of households falling into each category has then been indicated (\* = 1 household). In this case the mode occurs in the second quintile as this is where highest or most frequently occurring number of observations has been recorded.<sup>17</sup>

a) Identifying the mode is not an easy task. The main idea is to identify with one's key informant the most commonly occurring or most typical type of household in an area. In order to do this in a relatively objective fashion, one needs to identify an indicator of wealth. The ideal indicator of wealth is a quantifiable item that the poor have some of and the rich have a lot of. While money may seem to be an obvious answer, the problem is that cash is not very visible. Also, it often accounts for a small portion of a rural households total income and wealth. While it will vary greatly from community to community, typical indicators of wealth might include: numbers of cattle, numbers of sheep/goats, hectares of land under cultivation, numbers of canoes/boats, numbers of sacks of grain produced by a household in a year, etc. The type of wealth indicator chosen will very much depend on the type of area one is concerned with. For example, cattle does not make sense as a wealth indicator if only the rich have cattle in a certain area. Sacks of grain produced do not make sense in a fishing community where the majority of food is purchased with cash income from fishing.

Once a wealth identifier has been identified, one needs to establish how many of these items the richest 10% would typically have and how many the poorest 10% would typically have. If the indicator happens to be a type of livestock, the researcher may have already identified these upper and lower limits in questions 14 and 16. Once a range of values has been identified, divide this spread into 5 increments, fifths or wealth quintiles. For example, if one determined that rich families in an area have 10 goats and poor families have 1, then one might derive the following quintiles: those with 9-10 goats, 7-8 goats, 5-6 goats, 3-4 goats and 0-2 goats. The final step is to write these quintiles down on a piece of paper and ask the key informant to estimate what proportion of the population fall into each category.

**Example of Wealth Distribution Reflected by Goat Ownership (civil servant interview)**

<u>No Goats Owned</u>	<u>% of Population</u>	<u>Wealth Quintile</u>
9-10	10%	5

<sup>17</sup>For more information, see the handout, "How RiskMap Works," p. 3.



7-8	10%	4
5-6	20%	3
3-4	40%	2
0-2	20%	1

In the example above, the mode would occur in the 2nd wealth quintile.

Should the largest proportion of the population fall into the first or poorest wealth quintile, one must ask the key informant to further split this into two groups, the poorest of the poor and the poor (in the example above one might split this into those with 0 goats and those with 1-2 goats). This distinction needs to be made so that there is differentiation between the poorest 10% and the mode. In rare circumstance these two groups might be exactly the same. Write down the distribution of the population amongst the different wealth quintiles in Table III (question 10) in the interview guide. Once the mode has been identified with the key informant, one may go through all of the questions pertaining to the mode (as was done for the poor and rich).

b. In village interviews, one would follow much of the same procedure. The difference is that instead of writing the wealth quintiles on a piece of paper, one sketches these five categories in the dirt. One then gives the villagers 20 stones and asks them to place the stones so that they represent the proportion of the population that falls into each group.

**Example of Wealth Distribution Reflected by Goat Ownership** (village interview)

<u>No Goats Owned</u>	<u>Proportion of Population</u>	<u>Wealth Quintile</u>
9-10	** (2 stones = 10%)	5
7-8	** (2 stones = 10%)	4
5-6	**** (4 stones = 20%)	3
3-4	***** ( 8 stones = 40%)	2
0-2	**** (4 stones = 20%)	1

As was the case for a civil servant\NGO interview, once the mode has been identified (the 2nd quintile in the above example), one may then proceed to all of the remaining questions pertaining to the mode.

*20. Sources of Food and Numbers of Livestock for the Mode (all elements of questions 5 (Table I) and 15b-h (Table V))*

Ask this question in the same manner that you would for the poorest and richest 10% (see explanation no. 7)

*21. Sources of Cash for the Mode (Table II, Question 8a-g)*

Ask this question in the same manner that you would for the poorest and richest 10% (see explanation no. 8)

*22. Employment and Remittance for the Mode (Table VI, Question 17b)*

Ask this question in the same manner that you would for the poorest and richest 10% (see explanation no. 9)

23. *Surplus Food Production and Surplus Cash Income for the Mode (Table IV, Question 12a-b)*

Ask this question in the same manner that you would for the poorest and richest 10% (see explanation no. 10)

24. *Foodstocks for the Mode (Table V, Question 15a)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 11)

25. *Cash Savings and assets for the Mode (Table V, Question 15i)*

Ask this question in the same manner that you would for the poorest 10% (see explanation no. 12)

26. *Markets and Selling Points (Table VII, Question 18a-e)*

a&b) For this question there is no major difference in approach between civil servant and village interviews.

18a. Cereal Markets: ask the key informants to list all of the major markets where people go to in order to buy and sell food crops. Rank these markets in order of importance.

18b. Livestock Markets: ask the key informants to list all of the major markets where people go to in order to sell livestock. Rank these markets in order of importance.

18c. Cash crops: ask the key informants to list all of the major markets where people go to in order to sell cash crops. If there are different markets for different cash crops then delineate between these markets. Rank these markets in order of importance.

18d. Other trade: this refers to markets where people from the area might typically go to engage in commerce (trading in goods to make a profit) As before, ask the key informants to list all of the major markets where people go to in order to engage in commerce (these may be the same markets as another category). Rank these markets in order of importance.

18e. Non-food production/craft: ask the key informants to list all of the major markets where people go to in order to sell goods they have produced (firewood, beer, crafts, etc). Rank these markets in order of importance.

27. *Wild Food Availability in Normal and Bad Years (Question 19a-b)*

This refers to the degree to which wild food consumption can expand in difficult years.

a) Earlier in the interview, the researcher will have established what proportion of annual food needs may be coming from wild food consumption in a normal year. If no percentage was derived earlier, ask the key informant to estimate the number of days or weeks worth of

food that poor people might acquire from wild foods in a normal year (this will obviously be quite small if it didn't show up as a percentage under sources of food).

As compared to the level of consumption in a normal year, ask whether consumption increases or decrease in a difficult year. As was discussed earlier, be explicit that one is only concerned with wild foods and not famine foods. If consumption is capable of expanding in a difficult year, ask the key informant to estimate the proportion by which it would expand (0%, 20%, 40%, etc).

b. The first part of this question is tackled in the same manner as it would be with civil servants and villagers. In order to estimate by what proportion wild food consumption increases or decreases in a difficult year, place 5 stones in front of the villagers. If villagers think wild food consumption increases, ask them to add stones to represent the proportion by which wild food consumption might increase. If villagers think wild food will decrease, ask them to take away stones to represent the proportion by which wild food consumption would decrease. In this exercise, every stone added or taken away is equal to 20%. For example, if the villagers added three stones to the five stone pile then the researcher would note that wild food consumption increases by 60% in a difficult year. If, on the other hand, villagers took away two stones then the researcher would note that wild food consumption decreases by 40%.

#### 28. *Income and food Redistribution in Normal and Bad Years (Question 20)*

This refers to the expendability of income and food redistribution from rich to poor in difficult years. This is a somewhat curious phenomenon that does not occur in all areas. In some areas or cultures, the poor can expect to receive some free assistance (in terms of food, cash or animals) from richer relatives or neighbours within the community. The magnitude of this assistance may vary from normal to bad years. The method used to measure this concept is very similar to that used for determining the expendability of wild food consumption.

a. Earlier in the interview, the researcher will have established what proportion of annual food needs may be coming from redistribution or gifts in a normal year (this is likely to only be a factor for the poorest 10%). If no percentage was derived earlier, ask the key informant to estimate the number of days or weeks worth of food that poor people might acquire from gifts in a normal year (this will obviously be quite small if it didn't show up as a percentage under sources of food).<sup>18</sup>

As compared to the level of consumption in a normal year, ask whether redistribution or gifts increase or decrease in a difficult year. If gifts increase in a difficult year, ask the key informant to estimate the proportion by which it would expand (0%, 20%, 40%, etc).

b. The first part of this question is tackled in the same manner as it would be with civil

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<sup>18</sup>By this it is meant the cumulative amount of food consumed and not the frequency of consumption. For example, people in a given area might consume a wild fruit as a snack for eight months. However, all together, the fruit consumed might actually only equal 2 weeks worth of food.

servants and NGO employees. In order to estimate by what proportion gifts increase or decrease in a difficult year, place 5 stones in front of the villagers. If villagers think gifts increase, ask them to add stones to represent the proportion by which gifts might increase. If villagers think gifts will decrease, ask them to take away stones to represent the proportion by which gifts would decrease. As was the case in the wild food exercise, every stone added or taken away is equal to 20%. For example, if the villagers added three stones to the five stone pile then the researcher would note that gifts increase by 60% in a difficult year. If, on the other hand, villagers took away two stones then the researcher would note that gifts decrease by 40% in a difficult year.

#### 29. *Prices* (Question 21a-c)

The method for posing these questions is the same for civil servant/NGO and village interviews. For the main food crop that is consumed as a staple (Question 21a), one needs to ascertain the average price at which this staple is purchased during the period of the year when the majority of people in the area might be purchasing food. For example, if the majority of people consume maize in an area, and the period October-February is the big buying period (because it is the time when people run out of grain) for maize deficit households, then what is the average price during this time? In part b of question 21, the researcher needs to note the average price in a normal year for the average size of each livestock type (cattle, goat, chicken, etc.). In part c of question 21, the researcher must note all of the prices (new purchase price) of major assets owned by different types of households in the area. In the write-up phase, one will actually use one-half of this value as the re-sale value.

#### 30. *Food Deficit or Surplus Area and Food Flows* (Question 22)

Is this a food deficit or food surplus area? A solid answer to this question will require a key informant who has some knowledge of grain flows in and out of the area (e.g. a grain trader or agricultural extension agent). What one needs to ascertain is whether the food economy zone in question is a net importer or exporter of grain. In other words, which is greater, total imports of grain into the area or total exports out of the area? If imports outweigh exports then it is a food deficit area. If exports are greater than imports then it is a food surplus area. As regards food flows, do key informants know where the majority of food imported into their area is coming from? Do key informants know where the majority of food exported from their district is exported to?

#### 31. *Livestock Offtake Rate* (Question 23)

This is a question for which only a few specialized key informants may have an answer (e.g. livestock or veterinary specialists). The livestock offtake rate is the proportion of livestock that is sold or slaughtered every year. For example, if a farmer had 100 cows and the offtake rate for the area was 5%, then one might expect this farmer to sell or slaughter approximately five of his/her cows every year. One should simply ask such specialized key informants if they know the offtake rate for a particular area.

#### 32. *Seasonality* (Question 24)

The purpose here is to enquire about the seasonality of some major elements of the food

economy. Once an interviewer becomes more accomplished, he/she may be able to enquire about the seasonality of certain items when in the process of asking other questions. The answers to seasonality questions should be expressed in terms of months. What are the planting and harvest times for all of the major food and cash crops? When does the rain typically begin and end? Are there peak months for local employment/piece work and if so which months are these? During which months are most wild food available? Are there particular months when more livestock are sold? During which months is fishing most intensive?

### C. Concluding the RiskMap Interview

At the end of the interview it is very important to thank the key informants for having been so generous with their time. Indicate that you have learned a lot from the interview and that you hope the key informants may have learned something as well. As a report will generally be written based on the results of key informant interviews, indicate that the final results (either in written or oral form) will be shared with them at a later date. This giving back of information demonstrates that you are a responsible researcher who is not only interested in taking, but giving back as well. This giving back of information also allows the key informant (s) to respond with any feedback. Such feedback will further enhance the quality of your final report. It is then important to ask if the key informants have any questions for the research team. It is not uncommon for key informants to ask again how the researchers plan on using the information they have collected. It is always best to be honest and truthful about the purpose of the study. After questions have been answered, thank the key informants once again before leaving.

### D. After the interview

Always take time after the interview to make a few additional notes and fill in incomplete parts of the interview form. It is very important to make a note of one's impressions concerning the key informant(s). Does the interviewer feel that the key informants was strong or weak in their responses? Are there certain portions of the interview that may be stronger than others? Are there messy notes in the margins that need to be more properly organized under the correct question headings? It is amazing how much one may forget after they have done other interviews. To avoid any lost information or future confusion, complete one interview before moving on to the next.

## **IV. Data Analysis**

The information presented in this section on analysing collected data is quite limited and will be completed at a later date. All of the necessary techniques will be reviewed in the training and a more complete edition of this manual will be produced before the beginning of the data analysis phase.

### A. Triangulation and Zoning

Following the collection of data, one typically begins the process of analysis. To determine which interviews/data belong to a given FEZ one must consider information from zoning discussions as well as the data from full length key informant interviews. The method of analysis used in this type of qualitative research is referred to as triangulation.

In order to develop a profile for a FEZ, one typically needs to have at least 3 key informant interviews. Given a minimum of three, one is able to compare and contrast responses among the sources creating a triangle, or triangulating (this can obviously be done with more than three interviews as well). Of these three interviews, at least one should be from a village and one a civil servant/NGO employee interview. In the best of circumstances, the answers of all three interviews will be fairly similar. In the instance where a majority of interviews converge around the same figures while a smaller number are quite different, the researcher needs to ask him or herself the following questions. 1) Is there a possibility that one may be dealing with two entirely different FEZs?, 2) Were the interviews that differ significantly of good quality? 3) Are the interviews that differ all of one type (e.g. village interviews)? Note that villagers are often talking about much smaller areas than civil servant key informants who may have a broader experience. 4) If the differing interview was a civil servant/NGO interview, does one have reason to believe that the key informant was talking about a very small area that may be a bit peculiar? 5) Is it possible that the key informant understands the area generally, but lacked a more specific understanding of smaller detail? If the data from a given interview differs radically from that in other interviews, it is possible that it should be moved from one FEZ to another. In the case where the data from various interviews converge, or are similar overall, these interviews may be kept together to form the profile for one FEZ.<sup>19</sup>

#### B. Assessing the Strengths of Key Informant Interviews and Weighting

One of the main reasons for having the researchers involved in the analysis and write up phase is that it is the researchers who are the most capable of assessing the quality of individual interviews. In instances where the quality of an interview is a bit dubious or the researcher believes one is dealing with an isolated situation (e.g. a village that is quite different than others in the area), the researcher may choose to disregard or discount the value of the responses from a particular interview (depending on how solid or unsolid one believes the interview is).

In most instances, the researcher will simply average the responses from several interviews to come up with a composite answer (while noting the degree of variation which occurred in responses - noted variation will be discussed later). If one decides against totally discarding a poor interview, yet they do not want to count it as heavily as others, one may use a technique called weighting. For example, one might have the following numbers for proportion of food from own food crops: 80%, 70% and 60%. If the last figure came from an interview of more dubious quality, one may decide to weight it half as much as the other two scores. In order to do this, one multiplies the last score by .5, and then adds it to the other two scores. One then divides this sum by 2.5.<sup>20</sup>  $(80\% + 70\% + (.5 * 60\%))/2.5 = 72\%$  or:

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<sup>19</sup>Parameters or limits on the degree of acceptable or unacceptable variance have not been stated. This is because one or two answers in an entire interview might differ radically, yet all the other areas of information correspond closely to those of the other interviews in the set. In this case, one might eliminate the one or two divergent answers or decrease the importance of this data through a weighting exercise (see next section for a discussion on weighting).

<sup>20</sup>Normally, to find an average one divides by the number of figures added up. In this case if a straight average was needed, the three figures: 80

$$.5 \times 60\% = 30\%$$

$$80\% + 70\% + 30\% = 180\%$$

$$180 \div 2.5 = 72\% \quad ^{21}$$

Similarly, one may weight one interview higher than the others if one thinks this particular interview was of much higher quality than the others (such as an interview conducted with more than one person, both of whom were high quality sources). For example, using the same example, one may decide that the 60% figure came from the highest quality interview. As such, one may want to weigh this answer twice as heavily as the others. In order to do this, one multiplies the 60% by 2, adds this to the two other figures and then divides the sum by 4.<sup>22</sup>  $(80\% + 70\% + (2 \times 60\%))/4 = 67.5\%$  or:

$$60\% \times 2 = 120$$

$$80\% + 70\% + 120\% = 270$$

$$270 \div 4 = 67.5$$

One needs to be very cautious about making a decision to weight some interviews more heavily or less heavily than others. Such decisions should be made in consultation with other research colleagues and with one's supervisor. If several researchers participated in the same interview and they are all of the same opinion, then one can feel more confident about making such decisions. When in doubt, it is better to simply average the data.

#### C. Incorporating Information from Secondary Sources

Never hesitate to incorporate data from published sources when possible, particularly if they are judged to be rigorous studies of a high quality and are applicable to the zone in question. Such information can be used to cross check key informant data or to fill in data gaps. It can also be used to provide descriptive detail regarding the area.

#### D. Establishing Basic Parameters

Before one begins to synthesize the data from several key informant interviews, one needs to establish a few basic parameters that will be used during the analysis of these interviews.

##### *1. Average Household Size*

One needs to consult all of one's interviews for a FEZ as well as official data sources before coming to a decision on this issue. It is generally preferable to go with an official number but this can be revised if there is significant evidence to indicate otherwise. In Zimbabwe, we have used an official UNICEF figure of 6.7 persons per household. While this is higher than the official census figure in Zimbabwe, a number published reports suggest that this is the

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+ 70 + 60 would be added together equalling 210.  $210 \div 3 = 70$ , the average. This figure would then be divided by 3 since there were three figures in the equation. However, in this case, since it was determined to halve the value of one of the figures, the denominator (or the number we divide by) must also be reduced. Because we reduced one figure by half, we reduce it to one-half or .5. While the other two figures were not reduced they each retain their whole value. Therefore we divide by 2.5 instead of 3 in this weighted average.

<sup>21</sup>Note that the weighted average equals 72 whereas the straight average equals 70.

<sup>22</sup>Since the value of one figure was doubled in this weighted average, instead of using three as the denominator, four is used.

most reasonable figure. In the Kariba Valley, this figure will need to be adjusted as the prevalence of polygamous households means that average household size is likely to be larger.

## *2. Average Monthly Grain and Kcal Needs per Household*

(Table 1 Conversions to Annual Food Needs form)

Our research in Zimbabwe and Malawi indicates that the average household requires approximately 18kg of maize grain per person per month in order to satisfy basic food requirements. As such, a 6.7 person household would consume 120 kgs of maize per month. This figure will be used later in the analysis when one is converting the value of assets into a percentage of annual food needs.<sup>23</sup> The figure of 1900 kcal per day has been used by RiskMap in several African countries as the minimum energy consumption requirement for an average person. This figure does not refer to adults but to a “per capita” requirement, i.e. the mean requirement across the age range in an average developing country population. As such a family of 6.7 persons would need 12,730 kcals per day. This figure is helpful when converting own meat consumed to a percentage of annual food needs.

### E. Ranking Food Crops and Cash Crops

One should simply compile two lists: 1) food crops, and 2) cash crops. Rank these crops in order of importance based on the consensus of the majority of interviews.

### F. Wild foods and Seasonality

Simply compile a list of all wild foods (with both local and botanical names) and the months in which these foods are available. Consult a published source or agent of a natural resource or agricultural ministry if you do not know the botanical names for any of the wild foods listed.

### G. Developing Percentages for Sources of Food

For all categories except own meat consumption, simply take an average of the responses given. When doing this be aware of the suggestions outlined in point B above (e.g. making sure that one is not dealing with two separate zones, weighing some responses more heavily than others, etc). If the proportion that one is averaging varies considerably, it is better to write down the final answer as a range rather than a specific number (e.g. 65-75% rather than 70%). Only report final proportions in increments of five (e.g. 67.5% would not be acceptable).<sup>24</sup> For own meat consumption, one must derive the percentage of total annual food needs satisfied from this category (this is done even in instances where key informants gave a percentage for meat consumption as well as frequencies of consumption for certain animals). Based on rates of consumption, one will need to convert total kcals of meat consumed into a percentage of annual food needs (this figure will often be more accurate than

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<sup>23</sup>See Table 1 in Appendix II regarding “Conversions to Annual Food Needs.” In cases where the average household size is greater or smaller than 6.7, take the new figure and multiply by 18 to get the number of kgs of grain required per household per month.

<sup>24</sup>Part of the RiskMap philosophy is that the approach functions with estimates. Therefore, rounding up or down to the nearest increment of 5 is done. Anything more precise than this is considered a misrepresentation of the precision of the type of data collected.



the percentage figure that the key informant may have provided). Generally speaking, the number of incidents which meat is consumed is converted to a % of annual food needs. The exact procedure for making these conversions will be outlined in the training. The total for sources of food should vary around a mid-point of 100% (e.g. 95-105%).

#### H. Developing Percentages for Sources of Cash

For all sources of cash simply take an average of the responses given. When doing this be aware of the suggestions outlined in point B above (e.g. making sure that one is not dealing with two separate zones, weighing some responses more heavily than others, etc). If the proportion that one is averaging varies considerably, it is better to write down the final answer as a range rather than a specific number (e.g. 65-75% rather than 70%). Only report final proportions in increments of five. (e.g. 67.5% would not be acceptable, rather 65-70%). The total for sources of cash should vary around a mid-point of 100% (e.g. 95-105%).

#### I. Income Distribution and the Mode

Simply calculate the average proportion of the population that falls into each wealth quintile using the interview data. Identify which wealth quintile the mode falls within.

#### J. Developing Percentages for Surplus Production and Income

For these two categories, simply take an average of the responses given. When doing this be aware of the suggestions outlined in point B above (e.g. making sure that one is not dealing with two separate zones, weighing some responses more heavily than others, etc). If the proportion that one is averaging varies considerably, it is better to write down the final answer as a range rather than a specific number (e.g. 65-75% rather than 70%). Only report final proportions in increments of five.

#### K. Developing Percentages of Annual Food Needs for Assets and Savings

(Helpful Charts and equations to complete many of the following conversions are found on the form Conversions to Annual Food Needs)

##### *Foodstocks*

Determine the average number of months of food derived from foodstocks for each income group. Divide this figure by 12 and convert the decimal figure to a percent figure<sup>25</sup> in order to come up with a percentage of annual food needs derived from food stocks.

##### *Livestock* (Tables 6, 7, 8, 9 Conversion to Annual Food Needs Form)

Determine the average number of animals owned by each income group. Determine the average price for each type of animal. Calculate the total value of all animals. Divide this total value by the cost of purchasing one month of grain for an average size family. This result should be divided by 12 then multiplied by 100 in order to determine the percentage of annual food needs derived from the sale of all livestock (note that this value will be decreased automatically by the computer in a drought year when livestock prices drop and food prices rise).

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<sup>25</sup>This may be done by multiplying the decimal figure by 100. For example,  $.05 \times 100 = 5\%$ .

#### *Assets* (Tables 2, 3, 4, 5 Conversion to Annual Food Needs)

Develop a composite list of physical assets typically owned by each income group (Tables 3, 4, 5). Determine the average price for each type of physical asset (Table 2). Determine the total value of all assets for each income group. Take half of this value as the resale value of all assets. Divide this total value by the cost of purchasing one month of grain for an average size family. This result should be divided by 12 and multiplied by 100 in order to derive the percentage of annual food needs derived from the resale of physical assets. (Equations for this process accompany each of the tables 3, 4, and 5 found in the Conversion to Annual Food Needs form.)

#### *Savings*

Determine the average value of cash savings for each income group. Divide this total value by the cost of purchasing one month of grain for an average size family. This result should be divided by 12 and multiplied by 100 in order to derive the percentage of annual food needs derived from cash savings. (A space for savings is found in each of the equations for poor, mode and rich following tables 3, 4, and 5.)

#### L. Employment and Remittance

Develop a composite list of towns for each employment category (local, within country, neighbouring country and distant country). Rank these towns in order of importance based on the average from the majority of interviews. Take an average of responses (with the ideas suggested in point B) from all interviews in order to derive the proportion working in each location.

#### M. Markets and selling Points

Develop a complete list of market town names for each market category (grain markets, livestock markets, cash crop markets, etc). Rank these towns in order of importance based on the interviews.

#### N. Wild Foods

Take an average from all interviews (considering the suggestions in point B) for the proportion of food needs derived from wild food consumption in a normal year. In the same manner, develop a percentage by which wild consumption would expand in a bad year.

#### O. Income Redistribution

Take an average from all interviews (considering the suggestions in point B) for the proportion of food needs derived from gifts or income redistribution in a normal year. In the same manner, develop a percentage by which redistribution would expand in a bad year.

#### P. Prices (Tables 2 and 6, Conversion to Annual Food Need Form)

List average prices for 1) the purchase price of the main food crop, 2) all types of animals commonly owned in the area, 3) assets typically owned by different income groups in the area.

#### Q. Food Flows and Food Deficit or Surplus Area

This is a qualitative assessment based on the comments of key informants and published information sources.

#### R. Livestock Offtake Rate

Note the rate here given by an official source or that provided by the most qualified key informants.

#### S. Seasonality

Note the average periods for all of the major food and cash crops (planting and harvest times), the months when the rain typically falls, the peak months for local employment/piece work, the months when wild foods are most available, the months when more livestock are sold and the months when fishing is most intensive.

### **T. Writing up the Final Report**

The final task is to present your final report in a standard format that can be entered on to the RiskMap computer software programme. This final report includes both tables with numbers and descriptive text. The subject headings for the final report are listed below along with some advice on what should be included in each section. Remember at all times to be brief and to the point. Any textual information must be short enough in length to fit on one computer screen.

#### 1. Summary of Food Economy

Briefly describe where the FEZ is located. Note the major food crops grown. Briefly summarize the major sources of food and income. Make a qualitative assessment of how vulnerable to food insecurity the majority households in this area may be (a statement which should reflect the condition of the modal group).

#### 2. Geography and Rainfall

Describe in more detail the precise boundaries of the FEZ. This might be done by noting which wards or what portion of certain wards fall within the zone. Describe any major features of local geography (is it hilly, flat, near a lake, near a major road, etc). Note the average annual rainfall for the area as well as the population and ethnicity of the people.

#### 3. Sources of Food

The key component of this section is the completed table on sources of food which indicates the percentages of food derived from each source. The text in this section should simply describe the information presented in the table in written form.

#### 4. Food Crop Production

List the main food crops that are grown in the area and their rank importance. Briefly note the proportion of annual food needs which each income group obtains from food crops.

#### 5. Wild Foods

Briefly note the proportion of annual food needs which come from wild foods for each group

(rich, mode and poor). List the local and botanical names for the wild foods commonly collected in the area. Also note when each of the wild foods is in season.

#### 6. Other

Briefly note the proportion of annual food needs which come from any of the outstanding categories (fishing, own meat and hunting) for each group (rich, mode and poor). For fishing note the names of the major species which might be caught for home consumption in the area (these may be different from the species that are typically sold). For own meat consumption, note the kinds of animals that are most commonly consumed (or milk if it is an issue). For hunting note the names of the kinds of animals most typically caught.

#### 7. Sources of Cash

The key component of this section is the completed table on sources of cash which indicates the percentages of food derived from each source. The text in this section should generally describe the information presented in the table.

#### 8. Livestock

Briefly describe the importance of livestock sales as a source of cash for the different groups (rich, mode and poor). Include a table on typical livestock holdings in this section for rich, mode and poor. If one has information on the livestock offtake rate it would be mentioned in this section.

#### 9. Employment

The key component in this section are the three tables on places of employment and their rank, as well as the location proportions for the rich, mode and poor. Briefly describe the importance of employment and remittance income as a source of cash for the rich, mode and poor. Provide any detail on types of employment that different income groups might typically be involved in.

#### 10. Non-Food Production

Briefly describe the importance of income from non-food production as a source of cash for the rich, mode and poor. Describe the types of activities (beer brewing, firewood sales, etc) that the different income groups may be involved in. This important is an important detail as the table only contains the generic heading of “non-food production.”

### 11. Cash Crops

Briefly describe the importance of cash crop sales as a source of income for the rich, mode and poor. List the major cash crops that are grown in the area and rank their importance.

### 12. Trade

Briefly describe the importance of income from trading as a source of cash for the rich, mode and poor. Describe the types of different trading activities that the various income groups might be involved in (e.g. buying and selling of vegetables, small groceries and household supplies, etc).

### 13. Fishing

If it is a source of income in the area, then briefly describe the importance of this activity as a source of cash for the different income groups. Discuss the dynamics of fishing and the names of the species that are typically caught for sale.

### 14. Surplus Production and Income

The key component in this section is the table on surplus food production and income. The text should briefly describe the figures presented in this table.

### 15. Assets and Savings

The key component in this section is the table on assets and savings. The text should briefly describe the figures presented in this table. List the typical types of assets that each income group might generally own.

### 16. Cereal Prices and Food Flows

List the average prices for the major food crops. List the major food crop markets and rank them in order of importance. Note whether the area is a net surplus or deficit grain producing area. Describe where food crops from the area may be exported to or where food crops may be imported from.

### 17. Prices, Markets and Selling Points

List the prices for the typical types of livestock owned.

List the major markets by category (livestock, cash crop, non-food production, etc) and rank them in order of importance.

### 18. How People deal with a Bad Year

Discuss levels of wild food consumption and income redistribution for normal years as well as the degree (in terms of a percentage) to which these may expand or decrease in difficult years. Note any information that you may have on the order in which people may implement coping strategies in a difficult year. The computer programme assumes that households will always seek to preserve assets (e.g. a household would consume food stocks and cash savings or seek additional employment before it sells off livestock or farming equipment). However, in a given area, this may be different. If it is, please explain the order in which people go

through their coping strategies. It would also be important to note any unusual coping strategies that households may have in the area.

#### 19. Seasonality

Simply note all of the information that one would have compiled in the analysis section.

## Appendix I. Interview Guide

- 1a. Country Name: 1b. Date:  
 1c. Region/District: 1d. Food Economy Zone:  
 1e. Village/Area Name:  
 1f. Key Informant Name: 1g. Position/Occupation:  
 1h. Name of Person conducting interview:  
 2a. Types of Food Crops and Rank:  
 2b. Cash Crops and Rank:  
 2c. Types of Wild Foods & Availability:  
 2d. Ave. Rainfall: 2e. Size of Average Household:  
 2f. What proportion of households in the area are female-headed?  
 3a. Good/Bad/Normal Yr's:

**Table I. SOURCES OF FOOD (Questions 4-6)**

Source of Food	4. RICH		5. MODE		6. POOR	
	Months/No.	%	Months/No.	%	Months/No.	%
a. Own Food Crops						
b1. Milk Consump #s						
b2. Cattle						
b3. Sheep						
b4. Goats						
b5. Poultry						
b6. Pigs						
c. Fish						
d. Hunting						
e. Wild Foods						
f. Gifts/Relief						
g. Purchase						
<b>Total</b>						

**Table II. SOURCES OF CASH** (Questions 7-9)

Source of Cash	7. RICH		8. MODE		9. POOR	
	Description	%	Description	%	Description	%
a. Employment or Remitt's						
b. Livestock Sales (#'s?)						
c. Cash Crops Type						
d. Non-Food Production						
e. Wild Foods						
f. Other Trade						
g. Fish						
Total						

**Table III: Income Distribution** (Question 10)

Wealth Quintile	Wealth Indicator	Percentage of Total Population
1		
2		
3		
4		
5		

**Table IV: SURPLUS PRODUCTION AND INCOME** (Question 11-13)

Surplus Type	Rich - Mo's	11. Rich - %	Mode - Mo's	12. Mode - %	Poor - Mo's	13. Poor - %
a. Surplus Food Production (crops)						
b. Surplus						



Cash Income						
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**Table V: ASSETS AND SAVINGS** (Questions 14-16)

Capital Type	Rich - Nos or Months	14. Rich - %	Mode -Nos or Months	15. Mode - %	Poor - Nos or Months	16. Poor - %
a. Foodstocks						
b. Livestock Total	XXXXXXXX		XXXXXXXX		XXXXXXXX	
c. Cattle						
d. Goats						
e. Sheep						
f. Poultry						
g. Pigs						
h. Other Livestock						
I. Cash & Property						

**Table VI: EMPLOYMENT AND REMITTANCE** (Question 17)

**a. Rich**

Location	Names of Towns / Countries and Rank	Rank Importance and Percentage	Seasonal? (Y/N)
1. Local			
2. Within Country			
3. Neighbouring Country			
4. Distant Country			

**b. Mode**

Location	Names of Towns / Countries and Rank	Rank Importance and Percentage	Seasonal? (Y/N)
1. Local			
2. Within Country			
3. Neighbouring Country			

4. Distant Country			
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**c. Poor**

Location	Names of Towns / Countries and Rank	Rank Importance and Percentage	Seasonal? (Y/N)
1. Local			
2. Within Country			
3. Neighbouring Country			
4. Distant Country			

**Table VII: MARKETS AND SELLING POINTS (Question 18)**

Type	Location and Rank
a. Cereal Markets	
b. Livestock Sales	
c. Cash Crops	
d. Other Trade	
e. Non-Food Production/Craft	

**19. WILD FOODS (Wild Foods Availability in a Bad Year)**

- How many months of food available or % of annual food needs in a normal year?
- Does consumption expand in a bad year and by what percentage?

**20. INCOME REDISTRIBUTION**

- Does income redistribution occur in a normal year (how many weeks or percentage of annual food needs)?
- Does income distribution increase in a bad year and by what percentage

**21. PRICES**

**a. Grain/Staple:** \_\_\_\_\_ 1 kg                      50 kg                      90 k                      other measure

**b. Livestock**

Cattle    Sheep    Goat

Pig    Poultry

Other (Guinea fowl, pigeon)

**c. Assets**

Farming Implements:

Hoe:

Plough:

Ox cart:

Oxen:

Property:

Radio:

Furniture:

Bicycle:

Motorcycle:

Used Car:

Real Estate:

Shop/Store:

House:

**Misc** (Fish, Wild Foods, Non-food production)

**22. Food Deficit or Surplus area** (net importer or exporter of food crops) **and Food Flows** (where is the majority of food imported from or exported to)

**23. LIVESTOCK OFFTAKE RATES** (generally pertains to a civil servant/ NGO interview)

**Table VIII: SEASONALITY (Question 24)**

Type	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
a. Food Crop												
-												
-												
-												
b. Cash Crop												
-												
c. Rain												
d. Employment												
e. Wild Food												
-												
-												
f. Fishing												
g. L.S. Sale												

**Appendix II: Conversions to Annual Food Needs:  
Prices, Livestock Holdings and Assets**  
RiskMap Food Economy Zone Summary Sheet

Name of Country: \_\_\_\_\_

Name of Area or FEZ: \_\_\_\_\_

Average Household Size: \_\_\_\_\_

Average No. of kg's grain per month per household: \_\_\_\_\_

Price of grain required to feed one household for one month: \_\_\_\_\_ (z)

**I. PRICES**

**Table 1: Grain Measure and Prices**

Area of Inquiry	Response
Name of Staple	
Standard Unit of Measure	
No. of kg per measure	
Price per measure	
Price per kg <sup>26</sup>	*

18 kg. of grain are required per person per month to live and work

Average household size number = \_\_\_\_\_

18 kg x household size \_\_\_\_\_ = \_\_\_\_\_ (No. of kg. of grain required for one household for one month)

\_\_\_\_\_ x price of 1 kg. grain \_\_\_\_\_ \* = \_\_\_\_\_ (z) (The amount of money needed per month to provide the grain staple for the household)

**Table 2: Asset Prices**

Item	Price	Item	Price	Item	Price
Hoe		Cultivator		Radio	
Ax		other ag.		Bicycle	
Plough		ox cart		Car	
Furniture		wheelbarrow		other	

<sup>26</sup>Use the average of a higher reported price. It should reflect the price of grain when people in the area are purchasing grain the most; this will usually be before a harvest period.

## II. Assets and Savings: Conversions to Percentage Annual Food Needs

**Table 3: POOR**

Asset Type	No. Assets	Price per asset	No. assets x price
TOTAL	--	--	(a)

Total Cash Value of Assets (a) divided by 2:  $(a \div 2 = b)$  \_\_\_\_\_ (b) (Half the cash value of assets)

Half Cash Value of Assets = (b) \_\_\_\_\_ + Cash Value of Savings (c) \_\_\_\_\_ =  $(b+c=d)$   
(d) \_\_\_\_\_

(d) \_\_\_\_\_  $\div$  price of grain for 1HH for 1 month (z) \_\_\_\_\_ =  $(d \div z = e)$  (e) \_\_\_\_\_ (No. of months of grain which could be purchased with that cash)

(e) \_\_\_\_\_  $\div 12 = (e \div 12 = f)$  (f) \_\_\_\_\_

f \_\_\_\_\_  $\times 100 = g$  \_\_\_\_\_ (g) (% Annual Food Needs)

**Table 4: MODE**

Asset Type	No. Assets	Price per asset	No. assets x price
TOTAL	--	--	(a)

Total Cash Value of Assets (a) divided by 2:  $(a \div 2 = b)$  \_\_\_\_\_ (b) (Half the cash value of assets)

Half Cash Value of Assets = (b) \_\_\_\_\_ + Cash Value of Savings (c) \_\_\_\_\_ =  $(b+c=d)$   
(d) \_\_\_\_\_

(d) \_\_\_\_\_  $\div$  price of grain for 1HH for 1 month (z) \_\_\_\_\_ =  $(d \div z = e)$  (e) \_\_\_\_\_ (No. of months of grain which could be purchased with that cash)

(e) \_\_\_\_\_  $\div 12 = (e \div 12 = f)$  (f) \_\_\_\_\_

f \_\_\_\_\_  $\times 100 = g$  \_\_\_\_\_ (g) (% Annual Food Needs)

**Table 5: RICH**

Asset Type	No. Assets	Price per asset	No. assets x price
TOTAL	--	--	(a)

Total Cash Value of Assets (a) divided by 2:  $(a \div 2 = b)$  \_\_\_\_\_ (b) (Half the cash value of assets)

Half Cash Value of Assets = (b) \_\_\_\_\_ + Cash Value of Savings (c) \_\_\_\_\_ =  $(b+c=d)$

(d) \_\_\_\_\_

(d) \_\_\_\_\_  $\div$  price of grain for 1HH for 1 month (z) \_\_\_\_\_ =  $(d \div z = e)$  (e) \_\_\_\_\_ (No. of months of grain which could be purchased with that cash)

(e) \_\_\_\_\_  $\div 12 = (e \div 12 = f)$  (f) \_\_\_\_\_

f \_\_\_\_\_  $\times 100 = g$  \_\_\_\_\_ (g) (% Annual Food Needs)

### III. Livestock and Other Animal Prices

**Table 6: Livestock and other Animal Prices**

Animal	Price	Animal	Price	Animal	Price
poultry		pig		donkey	
goat		cow		g. fowl, etc.	
sheep		ox		other	



#### IV. Livestock Holdings Converted to Percentage of Annual Food Needs

**Table 7: POOR**

Livestock type	No. of livestock	Price per animal	No. livestock x price
cattle			
goat			
sheep			
poultry			
pig			
donkey			
ox			
other			
TOTAL	--	--	(a)

Total Cash Value of Livestock = (a) \_\_\_\_\_

(a) \_\_\_\_\_ ÷ price of grain for 1HH for 1 month (z) \_\_\_\_\_ = (a÷z=e) (e) \_\_\_\_\_ (No. of months of grain which could be purchased with that cash)

(e) \_\_\_\_\_ ÷ 12 = (e÷12=f) (f) \_\_\_\_\_

f \_\_\_\_\_ x 100=g \_\_\_\_\_ (g) (% Annual Food Needs)

**Table 8: MODE**

Livestock type	No. of livestock	Price per animal	No. livestock x price
cattle			
goat			
sheep			
poultry			
pig			
donkey			
ox			
other			
TOTAL	--	--	(a)

Total Cash Value of Livestock = (a) \_\_\_\_\_

(a) \_\_\_\_\_ ÷ price of grain for 1HH for 1 month (z) \_\_\_\_\_ = (a÷z=e) (e) \_\_\_\_\_ (No. of months of grain which could be purchased with that cash)

(e) \_\_\_\_\_ ÷ 12 = (e÷12=f) (f) \_\_\_\_\_

f \_\_\_\_\_ x 100=g \_\_\_\_\_ (g) (% Annual Food Needs)

**Table 9: RICH**

Livestock type	No. of livestock	Price per animal	No. livestock x price
cattle			
goat			
sheep			
poultry			
pig			
donkey			
ox			
other			
TOTAL	--	--	(a)

Total Cash Value of Livestock = (a) \_\_\_\_\_  
(a) \_\_\_\_\_ ÷ price of grain for 1HH for 1 month (d) \_\_\_\_\_ = (a÷d=e) (e) \_\_\_\_\_ (No. of months of grain which could be purchased with that cash)  
(e) \_\_\_\_\_ ÷ 12 = (e÷12=f) (f) \_\_\_\_\_  
f \_\_\_\_\_ x 100=g \_\_\_\_\_ (g) (% Annual Food Needs)