7

Checking the accuracy of the information

Where field information has been collected through interview rather than direct observation and measurement, it must be verified. This is as true of the key informant inquiry described in the last chapter as of the most rigorously sampled questionnaire survey. Here, the household economy (HE) methodology and the approaches to obtaining information we have looked at have an important advantage: built-in methods for checking the accuracy of what you are discovering. Before you begin an HEA analysis, you should be fully conversant with these methods.

We first look at how accurate the information can be. Then we look at how to ensure this accuracy. This is done by cross-checking: making sure that information from a variety of different sources, or dealing with a variety of related issues, is consistent. Each of these methods is explained separately below. Finally, there is a discussion of some common mistakes that can compromise the accuracy of your information.

Cross-checking takes five forms:

- internal consistency within wealth group interviews
- internal consistency between wealth group interviews
- agreement between key informant information, written sources, observations and other experience
- agreement between key informants
- balance between interviewers.

1. The limits to accuracy

Even within a defined wealth group, economy will vary from household to household. There will therefore be no single "right" answer to a question. In HEA work you will be looking at a range of answers to any one question. It is, however, important that the ranges are within reasonable, plausible limits.

For instance, poor households in a community may reportedly survive by consuming two to four 90kg sacks per year of their own cereals. Two sacks provide approximately 17 per cent of the basic energy requirement for a family of six; four sacks provide approximately 34 per cent (see Table 5). The same families may reportedly buy nine to eleven sacks of cereals (75–92 per cent of requirement). These two pieces of information are internally consistent, as there is a large overlap between the two percentage ranges. In the worst case, a household with two bags from its own production, which also purchased nine bags, would meet (17 + 75) 92 per cent of its requirement from cereals. In the best case, a household would have cereals equal to (34 + 92) 126 per cent of its needs. The best estimate which we have is that in this poor group of households, income from cereals is in the range 92–126 per cent of household energy requirement. Methods of using interval information are discussed in Chapter 8.

2. Checking for the internal consistency of information

The nature of the information you are gathering about how people live in a rural society makes it possible to check for consistency. On the one hand, there is a finite and relatively small number of economic options available to households, so you will already know the broad parameters of the investigation. You will be looking at how people combine a variety of known options to survive. There is a maximum amount of a given crop that can be grown on a given amount of land, and there is a minimum amount of food energy required to stay alive,

under the conditions of the area, and so on. If all or most of these pieces of information are in reasonable agreement (and we have reasonable explanations where they are not), this indicates that we are right.

Cross-checking, then, is simply a way of confirming that all the pieces of information you obtain fit together in a coherent way, and that the information set enables the household to survive in a normal year.

Internal consistency within wealth group interviews

An interview in a wealth group takes the form of establishing a budget – income from food and non-food sources and expenditure – for a typical household of a defined size in that wealth group. The information obtained should be:

- internally consistent: income and expenditure should balance (within the limits of the estimates obtained, as already outlined)
- consistent with the biological requirements of the household, and the observed physical condition of people and their standard of living.

However, it is important that inconsistencies are picked up by the interviewer during the interview – it is of little use if these are discovered at a later time when it is impossible to return to repeat the interview. During an interview you should keep a running tally of:

- the quantity of food and cash income, and expenditure, to ensure that they are roughly in balance. It is very difficult to fabricate a convincing balanced household budget, and virtually impossible for this to be done by a group of people during an interview. If people are trying to mislead, the answers are usually so absurd that it is obvious. Where the budget does not balance, this is often a clue that some item of information is being deliberately withheld: for example, people may be reluctant to discuss smuggling or other illegal activities.

  If the information does not add up and it is clear that the responses are incomplete, you should discard the data.

  As far as possible you should try to reconcile the information during the interview. If you find discrepancies you can open lines of enquiry that will allow the budget to be balanced. If major discrepancies are found subsequently, there is nothing to be done except to discard the information

- the quantity of food obtained by the household from its own production, wild foods and other sources. In many cases a reasonable average estimate of the normal consumption for a poor person is about 1,900 kcal per person per day (Chapter 1). The interview should indicate roughly this level of food income or there must be a reasonable explanation of why it is lower or higher than this: for example, better-off groups may sometimes have an average intake greater than 1,900 kcal. People in cold environments may have a higher energy intake. Lower intakes may be associated with extreme poverty or with abnormal conditions.

An illustration of why this type of cross-checking is useful

A common response by women in southern Sudan to the question of what they eat during the wet season is: "We have nothing, so all we eat is leaves." It is true that they eat very large quantities of leaves at this time, but it is actually impossible to survive for long on the energy provided by leafy greens alone. In fact, in order to obtain 1,900 kcal per person, a household would have to consume around 40 kg of greens per day – quite impossible. Without being able to place their response in the context of what is actually possible, it would be tempting to take it at face value.

There are two ways to check an estimate of household food consumption. The first is to:

- build up a picture of all the food a family obtains in a year
- convert all this food into energy values, using the tables (Annexe 2)
- check to see that the total energy value is at least equal to 1,900 kcal (or the value being used) per person per day.

This method is used at the end the end of the investigation (Chapter 8). It can be difficult to use this method during an interview as it requires food tables and a calculator and tends to intrude on discussion. In the field it is necessary to use quicker less obtrusive methods.

The second method is to use quick approximations, which allow you to keep a running tally of food income. The trick is not to use kcal, but to have a clear idea in mind about the sort of quantities of basic foods that are needed to provide a household with 1,900 kcal per person per day (or the value being used). In nearly all situations this is made easier by the fact that the diet of most households in poorer countries is based on cereals and pulses – other foods often provide only a small contribution to household energy consumption.

Most cereals contribute around 350 kcal per 100 grams. So, to provide 1,900 kcal you would need around 500 grams, or 0.5 kg. A household of six people therefore needs about 3 kg cereals per day, or approximately 1 ton of cereals per year.

For example: you discover that poor families in a location produce six 90 kg sacks of grain each year – a total contribution of 540 kg to annual food needs. You can see immediately that this will meet about half of the household's annual cereal needs.

It is possible to keep similar simple rules in mind for other common sources of food. Some are shown in Table 5. It is worth developing rules for local use as soon as the main sources of income are known.

Table 5: Short-cut approaches to calculating food needs

On average, each day, one person requires approximately:
0.5 kg of cereals, or 2.5 kg Irish potato, or 1.6 kg sweet potato, or 1.2 kg fresh cassava
Each year, a household of six people requires:
1 ton of cereals, or 3.5 tons of sweet potato, or 5.5 tons of Irish potato
100 kg of beans = 10% of annual household energy requirement 1 litre fresh cow's milk per day = 6% of annual household energy requirement 2 goats or sheep = (15 kg dressed weight) 1% of annual household energy requirement
20 sacks of 50 kg = 1 ton 11 sacks of 90 kg = 1 ton

Example

You are told that in a normal year an agro-pastoralist household of six buys six 90 kg sacks of grain (50 per cent of food needs). They grow two sacks of grain each year (16 per cent of food needs), and they also get two litres of milk every day for six months of the year from their animals (about 6 per cent of food needs). In a normal year, they eat two goats from their own herd (about 1 per cent of normal food needs) and three goats at feasts (about 1.5 per cent of food needs).

The total food income, you have been told, about adds up to only 74.5 per cent of the household's minimum food need. There must be something you have not considered.

You can make the same kind of calculation for any source of food. Money can also be converted this way if you have enough information about grain prices. For instance, say a household makes $50 a year, which is used to purchase food. If grain is $0.50 per kg, $50 represents 100 kg, or around 8–10 per cent of annual food income.

As you get more practice in food economy, you will find that making these calculations as you go along, during the interview, becomes second nature. You are continually checking for internal consistency.

Internal consistency between wealth group interviews

In some interviews it is possible to check for consistency between wealth groups. For example, if poor people are working for the better-off rich and the better-off are employing the poor, the income received by the poor should be in agreement with the estimate expenditure on labour by the better-off.

Cross-checking key informant information against written sources

Although, as we have seen, written sources will seldom tell you exactly what you want to know, they do provide information that allows you to cross-check what key informants tell you.

For example, several informants may say that in this area in a normal year a

poor household consumes two or three 90 kg bags of the maize it has produced, and sells between a half and one bag. This would mean that they are cultivating two-and-a-half to four bags of maize per year (225 to 360 kg), which seems very low.

The key informants are less specific about the amount of land poor households might plant with maize. For the poorest 20 per cent of households, some said about a quarter of an acre, most said about half an acre and one said two acres. They all say that poor households would use all their land to grow maize and would not cultivate any other crop.

You want to know how much land poor households cultivate with maize in a normal year. With this figure, you hope to cross-check what you have been told about household maize production.

The district development report shows that over 90 per cent of the population are smallholder farmers. A small farm survey, conducted on a random sample of households in two villages, shows that 30 per cent of the population have less than one acre and 5 per cent have less than half an acre. Since the population is mainly agricultural and land is the major means of production, you would expect small land holdings to correspond to poverty. So the two written sources seem to agree with key informants that the poorest 20 per cent will cultivate less than one acre. They also explain why some informants said poor households had only a quarter of an acre: some households do, but the majority in this category (25 per cent in the survey) have half an acre or more, but less than one acre. Consulting UN Food and Agricultural Organisation (FAO) labour tables for maize cultivation will show you that a family of six would have enough labour (after performing wage labour for others) to cultivate half an acre, but not enough for one acre. Here, documentary sources explain and reinforce key informant information.

The same survey shows that yield is low in the area: only seven bags per acre. If this is correct, and the land held is about half an acre, than the key informant figures for production are also roughly right.

So here the information has checked itself (land size and production add up), key informants roughly check each other, and the use of documentary sources has allowed you to confirm this.

Checking agreement between key informants

As you are only asking key informants for information they should know, you should expect them to agree on matters over which there can only be a relatively narrow range of imprecision. Some may tell you that a modal household consumes six sacks of its own cereal a year, some that it consumes five, but as discussed earlier in this section, this is acceptable. In general, though, you should find that key informants are saying similar things.

It is, however, important to check one informant against another, and this should be done as you go along: reviewing interviews day by day, seeing where inconsistencies arise, and concentrating on them the following day.

When major inconsistencies arise, you should ask the key informants why this is so. If there is no rational explanation, it is often best to believe the majority opinion among informants, as long as this is internally consistent and agrees with the written sources.

For this method of cross-checking to work, you must choose the key informants carefully so that they represent a variety of viewpoints. Wherever possible, take your findings back to key informants and discuss them. If this is not possible, you should at least ensure that the findings are sent to the informants with a request for any final comments.

Balance between interviewers

The methods of cross-checking so far discussed all concentrate on analysing the information, or the individuals who give you the information, to ensure that it is accurate. You should also remember that gathering information is a process in which the researcher is intimately involved: you should therefore cross-check your own responses and opinions as well as those of the informants. There are two ways to do this.

The first way is, before finalising your analysis of the HEA, to send the informants a draft and ask them if they are happy with it. Many informants, particularly those contacted early on, will not have had an opportunity to challenge your final assumptions.

The second way to prevent your preconceptions from clouding the analysis is to make sure that all research is done by groups of two or three persons. This allows the interviewers to cross-check each other. Groups of researchers should include individuals with different characteristics: try to mix people of different sexes, ages, nationalities and academic or professional training.

3. Avoiding pitfalls

A major advantage of the field approach is that, since you have been cross-checking the information as you go along, most misunderstandings will come to light during the interview.

Some other common causes of misunderstanding are outlined here. You are bound to find many more. In the experience of Save the Children, the most common causes of inconsistency are mistranslation and/or the interviewer and interviewee talking at cross-purposes. The question may be ambiguously worded, or may not have been agreed between interviewer and informant.

If you are using a translator, check with them that they understood the question you asked.

If the question was properly translated, tell the informant that you do not understand the answer. Explain why this is so; if the answer was inconsistent with earlier information, or with the understanding of an issue you acquired from other key informants, say so. In most cases, the informant will be able to explain the inconsistency immediately. If not, it is worth checking that you are both talking about the same subject.

The informant has moved beyond the initial boundaries of the conversation. It is worth confirming that they are still using the same categorisations as were agreed at the outset. Check once again that the informant is talking about:

- a normal year
- the agreed household type and size
- the agreed wealth group.

An example from Turkana, Kenya

When talking about livestock holdings, many informants gave very high figures. This was because, while other assets could be owned by the small female-headed household unit (which was the unit under discussion) cattle are owned by the larger male-headed unit, which comprises several female-headed households. It made no sense for informants to discuss the herd sizes of the smaller unit, because the smaller unit does not have a herd. Informants automatically switched to talking about the male-headed household, and assumed that the interviewer recognised that they had done so. This was not obvious to the interviewer, until a discrepancy was noted between the number of animals held (high) and the importance of livestock products in the diet (low). Once this was pointed out to informants, they were able to explain that when explaining milk consumption, they were talking about a woman and children, when explaining herd size, they were talking about something different: animals owned by man, wives and children. The misunderstanding had arisen because interviewer and informants were talking about different types of household.

Even when you choose your key informants carefully and cross-check their responses, there will still be occasions when the information they give just does not add up. This can occur for several reasons:

- The informant is wrong.
- The informant is right, but is not referring to the same thing as you or the question is ambiguous. “How many cattle do you own?” may not yield the same answer as “how many cattle do you manage?”. In some locations a person may hold animals for others on a variety of terms, and only “own” some.
- There is confusion over units of measurement: for example, the informant may substitute a local unit for the acres or hectares used by the interviewer or

A food economist in Gao, Mali, was surprised at the very high yields of rice being achieved from irrigation schemes, and more surprised that households couldn't account for this rice: the total of what was consumed, sold and given away by a model household seemed to be lower than the total grown. After some questioning, he discovered that informants were all talking about paddy production: unhusked rice. A bag of paddy can contain as little as 60% edible rice. This explained high yields, as he had taken the paddy production to be rice production. It also explained the apparent discrepancy between production and consumption. The gap was, in fact, the difference between the husked rice weight and the paddy weight.

use a different bag size. Often interviewers assume 90 kg bags for cereals, but you must always to check this.

- There is confusion over methods of storage. Food crops are often stored in such a way that much of their bulk is not edible: rice can be stored as unhusked paddy, maize can be stored on the cob. This will make the quantities given by the key informant for a crop much greater than the quantity that is edible, which is what you are interested in. Conversely, cassava and other root crops are often stored as dried chips. In this case, the energy value of the food by weight is much higher than you might expect if you were working on figures for wet cassava.
- There is confusion over the method of consumption. Be careful about asking how many "bags" of a foodstuff are produced. Cereals and other crops are often consumed "green": picked and eaten the same day. As this part of the crop is never bagged, informants will, quite logically, omit to mention it when talking about how many bags they get.
- In many places, crop production may be occurring several times in a year. Be sure to check that the figures you are getting are for the year, not just for one season in the year.

Conversations with cultivators in Mannar, Sri Lanka, were often complicated by confusion between "food" and rice. Over the course of conversation, farmers would begin to talk only about rice, under-reporting the importance of other (normally purchased) foods. It was necessary to continually remind informants that the conversation was about all foods. Rice plays a central role in the society of northern Sri Lanka. Many social systems and relationships are modelled on, or closely related to, the economic relations which surround rice production. In terms of the space it takes up in people's minds, other foodstuffs don't compete. Nevertheless, these other foods are important to the energy intake of the population.

You will discover quite quickly that, wherever you are, food has symbolic importance. When you talk about food in some cultures, certain things may be excluded. Would a key informant in Britain mention beer as food, despite its calorific importance to a large part of the population? Probably not. Yet the same informant would probably see soup as food. So it is important to check that you are getting a full list of all the important energy sources, and not just those with cultural importance as food. Check also that there is agreement on the criteria by which the importance of foods (especially in ranking and proportional piling) is being assessed. If you attempt to rank by quality rather than quantity, the question of individual perceptions needs to be borne in mind.

Similar problems can occur with livestock. Small stock and fowl may not be mentioned because they are not perceived as being sufficiently important.

Summary

Cross-checking takes five forms:

- internal consistency within wealth group interviews: household economic activities should agree with the economic possibilities; household budgets should balance
- internal consistency between wealth group interviews: when there are economic relationships between wealth groups, these should agree
- agreement between key informant information, written sources, observations and other experience
- agreement between key informants
- balance between interviewers: if practical, work in a group; allow interviewees to see analysis before this is finalised.