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NETWORK **RRN**
paper

The Food Economy Approach: a framework for understanding rural livelihoods

by Tanya Boudreau

Abstract

This paper describes Save the Children Fund-UK's Food Economy Approach to analysing household food security, adopted by the organisation in the early 1990s. The paper details the way in which the access of individual households to food, both in 'normal' and 'bad' years, is identified and quantified. The paper examines the conceptual background to the model, asking "what is the food economy approach?", "what is it used for?", "how does it work?" and "who does what?". It goes on to detail the development of the 'baseline picture', – how different families in a particular food economy area normally obtain food and non-food income. Information gathering, quantification and calculation methodologies are discussed with the aid of pie-charts and tables. Three case studies examine the application of the approach in southern Sudan, northern Kenya and Rwanda.

The paper highlights some of the difficulties that SCF-UK have faced in implementing the approach for example the difficulty in defining a 'normal' year; the reliability and quality of data sources; and the need for intellectual, highly trained and motivated staff.

This paper provides a starting point for further discussion and debate about the Food Economy Approach. It does so by providing a clear description of the workings of the model and shows, through case studies, how the model has been used to address some of the fundamental food security problems faced by all food security-related agencies. Only on the basis of an initial understanding of the approach can agencies effectively engage in a productive debate about the efficacy and appropriateness of the approach in addressing these information and analysis issues.

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Acronyms

EU	European Union	OLS	Operation Lifeline Sudan
FAO	Food and Agriculture Organization (of the United Nations)	PRA	Participatory Rural Appraisal
FEWS	Famine Early Warning System (of the United States Agency for International Development)	RRA	Rapid Rural Appraisal
FEZ	Food Economy Zone	SPLA/M	Sudan People's Liberation Army/Movement
NDVI	Normalised Difference Vegetation Index	SSIM	Southern Sudan Independence Movement
NGO	Non-governmental Organisation	UNHCR	United Nations High Commission for Refugees
		WFP	World Food Programme (of the United Nations)

Editor's Preface

The aim of this paper is to describe the workings of Save the Children Fund-UK's (SCF-UK) Food Economy Approach, in a style understandable to a non-specialist audience, and to discuss the benefits and limitations of the approach. This has proven to be quite a challenge, partly because some of the more fundamental criticisms of the approach concern the details of its application rather than its broad approach. Inevitably, as we have sought to reflect these criticisms in the paper, we have found ourselves being drawn into a detailed discussion of the approach, which is at odds with the paper's aim of being widely accessible.

What has emerged from the process of commissioning this work and having it reviewed is that many food security analysts working outside SCF-UK are not fully aware of exactly how the approach works. This raises some searching questions about NGO research. Had the food economy approach been developed by a university department, there would have been an expectation that papers describing its functioning and application would have been placed in the public domain or peer reviewed at an earlier stage. However, SCF-UK, despite using the approach since the early 1990s, have not, until now, published a full account of the workings of the food economy approach. Given that the approach is used to determine the food aid requirements of some of the most vulnerable people in the world, it could be argued that SCF-UK should have made a greater effort to test the approach amongst their peers. Although there have been workshops with agency personnel, there is a perception amongst a number of food security analysts that more could have been done.

The dialogue with critics has also revealed that the model has been evolving, yet, food security analysts in partner organisations have not been aware of changes that have taken place. Again, there is an issue of transparency and dissemination. One of the more important changes concerns the extent to which the food economy approach can be used as a predictive tool. In the past, SCF-UK food economy

practitioners tended to believe that once the data was obtained and entered into the computer, the Risk Map programme would then generate reasonable predictions of impending food security problems. However, more recently, there has been a move away from this position, to one where the food economy framework is put forward as the basis for regular monitoring activities: constantly asking whether things are working out as expected, or whether there has been a change in one or other parameters, and if so, what this means?

The food economy approach uses the concept of Food Economy Zones, which do not necessarily correspond with established administrative boundaries. This means that SCF-UK's data cannot always be incorporated into other food security systems, and vice-versa. This has created a tension between food economy analysts and food security experts who use a different approach. The reasons for such tension are discussed in more detail in the paper.

The RRN hopes that this paper will increase awareness of both the food economy approach and some of the debates around the approach. The first step is to provide a clear description of the workings of the model, along with some examples of the ways in which it is being used. To achieve this, we sought an author who was familiar with the approach, using it on a day-to-day basis. This has meant that the paper has been written by someone who is, broadly speaking, an advocate of the approach. While this should be borne in mind by readers, we hope that this has not been at the cost of a balanced presentation.

There would appear to be a strong case to be made for an independent evaluation of both the food economy and other food security approaches. Do they produce information that is reliable and of use to decision-makers? Where are they most useful, and where not?

We welcome comments on this paper for publication in RRN Newsletter. Copies will also be passed to the author.

Alistair Hallam, Editor

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Introduction

The food economy approach is a framework for analysing household food security. It is one of a number of approaches to have evolved out of over twenty years of work by a number of organisations and researchers on nutrition, food security and emergency planning – work motivated in large part by the need for information of practical use in responding to food shortages. The term ‘food economy’ was first used by SCF-UK early in the present decade, to describe the type of analysis and procedures being developed in the field by the agency’s food security practitioners, drawing upon their experience in carrying out large-scale, rapid field surveys and in ‘risk-mapping’ (see Box no. 1, page 9) – a project which sought to develop a methodology for vulnerability analysis.

At the heart of the food economy approach is the representation of typical rural households’ everyday circumstances. For food economy practitioners, understanding how people normally obtain access to food is an essential part of predicting how they will react to crisis. SCF-UK’s interest in access to food came at a time of emerging consensus on the meaning of the term ‘food security’, in which emphasis was placed on regular and adequate food consumption by people rather than simply on the apparent adequacy of production at some geographical level. The literature of famine arising out of Africa’s crises in the 1970s stressed the importance of the market in determining whether

people go hungry, and contributed to the view that poor farmers are often highly dependent upon cash transactions and other forms of exchange for their access to food.

Further drought and famine in Africa in the 1980s stimulated the development of a number of famine early warning systems by governments and agencies, a typical component of which was the calculation of national or sub-national food balance sheets. However, while improvements in agricultural surveying, meteorology and satellite imagery increased the accuracy of these food balance sheets, making them an important tool in predicting the effects of the worst catastrophes, their usefulness has been more limited for those (more commonly occurring) years when food production and exchange experienced a downturn rather than a catastrophe. The question of who is vulnerable and who will go hungry becomes more difficult in such circumstances: a finer judgement must be made of how far people’s ‘coping mechanisms’ will get them out of trouble, and what it may cost them in terms of assets sold or families dislocated.

An important aspect of the food economy approach is the attention given to explaining, context by context, the relationship between poverty and vulnerability. For food economy practitioners, there is a clear distinction between ‘vulnerability’ and ‘poverty’, with no direct, linear correlation between them. One can be poor; however, one is not simply

‘vulnerable’, but vulnerable to something. A rich investor who places all of his or her money in stocks is vulnerable to a sudden market crash; similarly a rich pastoralist is vulnerable to an outbreak of rinderpest. Poor households are often least vulnerable to a single change in economic conditions because they tend to maintain a diversified income strategy. However, they may be the most vulnerable to a sudden downturn in economic conditions across the board, as their

savings and assets – used in response to crisis – tend to be minimal.

This paper seeks to present the conceptual model underpinning the food economy approach, describing the key indicators used in the analysis and the process used to estimate the effects of a given problem on households. Case studies will show how the model has been applied in practice – in southern Sudan, northern Kenya, and Rwanda.

2

The conceptual model

2.1 What is the food economy approach?

The food economy approach is a framework for analysing household food security. Its focus lies in identifying and quantifying households' means of access to food.

The fundamental premise of the food economy framework is that understanding how families gain access to food in normal years is essential for analysing the effects of external shocks on access to food in a bad year. Building up a 'normal year' picture helps to determine key indicators for monitoring food security, and to understand the significance of changes in these indicators.

While food economy analysis aims to help in operational decision-making, it is not meant to provide 'the answer'. Rather it aims to allow for a more rational consideration of the options open to policy makers, and to encourage critical analysis and debate.

2.1.1 What is it used for?

Food economy analysis is used for a number of different purposes, including:

- assessing relief needs
- rationalising the use of food aid
- early warning of food crises
- understanding how poor people make ends meet

- understanding reasons for rural-urban migration
- developing policies against chronic hunger

The most common application of food economy so far has been in estimating food aid needs. However, the approach has the potential to inform decisions about other types of services that may support longer term food security, such as the allocation of fishing equipment or veterinary services.

2.1.2 How does it work?

Food economy analysis is carried out in three distinct steps, shown in Figure 1 (see page 8).

The first step is the development of a baseline picture of how families in a particular area survive in normal years. This picture is geographic-specific (by Food Economy Zone – see section 2.2.1 on page 10 for further details) and reflects differences in wealth (poor, medium, rich¹) within an area. It contains information on sources of food and cash income (as shown in the pie chart); the market or social connections by which households achieve this income; and assets held. Increasingly, baseline pictures also contain information on expenditure patterns.

The second step is the problem specification – the identification of potential changes in agricultural, economic or security conditions that will affect families' access to food. For instance, drought might lower crop yields to 70% of normal; or

Figure 1

Food economy analysis: the process

1. The baseline picture

- how households normally obtain food and cash income, and their relative (%) contributions;
- connections with the market and with social or kinship networks;
- assets (food stocks normally carried over; livestock holdings; cash savings/capital goods); and if possible;
- normal expenditure patterns.



2. Problem specification

The sum of information about changes in the larger economy that will affect production and exchange options open to rural households e.g. crop production 75% of normal; grain prices 125% of normal.



3. Scenario analysis

i) *Calculating the initial deficit*

The effect of the 'problem' on the household's access to food, before taking account of 'coping' strategies: e.g. what percent of household food income will be lost by a 25% crop failure?



ii) *Calculating how much the initial deficit may be reduced*

The extent to which individual strategies employed by the household to obtain food and cash can be expanded to fill the deficit e.g. through increased wild food consumption, increased labouring or livestock sales.



4. Results

- estimate of the shortfall in food income that people are likely to face, taking into account their ability to cope using their own resources;
- the costs incurred to households by 'coping' in this way, in terms of depletion of assets and dislocation of families;
- the likely effects of different levels, and forms, of assistance.

market disruption might increase grain prices to 150% of normal.

The third step is the ‘scenario analysis’ – the calculation of the extent to which the changes identified in the problem specification affect different households’ access to food. There are two stages to the scenario analysis: firstly, a calculation of the ‘initial ‘deficit’ resulting from the changes, and secondly, a calculation of the extent to which people are able to cope with this deficit.

2.1.3 Who does what?

- *The first step* – developing the baseline picture – is usually carried out by SCF-UK food economy analysts on short-term visits commissioned by various agencies and country programmes or trained field staff as part of an on-going country operation.

- *The second step* – problem specification – uses information collected primarily through the food security monitoring systems of NGOs, FAO, WFP, FEWS, and government offices.
- *The third step* – scenario analysis – is usually carried out by food economy analysts employed by SCF-UK. Sometimes, analysis is assisted by a computer programme called Risk Map (see Box No. 1 below). Risk Map has been used to analyse situations in Darfur, Ethiopia and Zimbabwe. For the most part, however, analysis is carried out using pen and paper.

The following section of the paper will provide a general description of the principles underlying the food economy approach: the requirements for obtaining a baseline picture; the indicators used to develop a problem specification; and, the process of analysing the effects of a problem on household access to food.

Box No. 1

Risk Map

Risk Map is a computer software programme developed for the purposes of ‘scenario analysis’. It contains a dedicated country-by-country database with baseline descriptions of a number of African countries, including Angola, Ethiopia, Kenya, Malawi, Mali, Sudan (north and south), Uganda and Zimbabwe among others. Baseline pictures are easily accessible for viewing, allowing the user to quickly compare aspects of the rural economy between different areas, such as the importance of livestock to annual food needs or the importance of exchange as a portion of annual food income.

The user is able to impose on this database any level of problem in relation to crop failure and/or grazing failure and/or access to markets. The programme then analyses the effects of the problem, offering an estimate of the proportion of the population likely to be in food deficit and the degree of that deficit. The results can be viewed on a map, in graphic or text form. The process of calculation can be seen step-by-step as the programme deals with:

- the effect on normal sources of food and income for poor/middle/rich households;
- food stocks and cash savings or capital assets that people could fall back on;
- the availability of wild foods;
- redistribution of food from better-off to poorer within a community;
- the sale of livestock to buy food;
- the availability of additional employment, including through migration, which may allow people to buy food.

The user can also inspect the result obtained if one or more of these coping mechanisms is excluded. If, for example, the user is interested in the level of food aid need to prevent people selling their assets or migrating in large numbers to find work, then these options can be blocked and the analysis run on that basis. Thus the programme has something to say about protecting livelihoods as well as lives.

Source: The Risk Mapping Project, SCF-UK, Policy Development Unit

2.2 The baseline picture

Box No. 2

The baseline picture

Food security: assured access by all to a sufficient quantity and quality of food at all times to support a healthy and active life.

Food economy: the sum of ways families obtain food.

It is now widely recognised that crop production is not the only way that rural households obtain food. Families in most rural populations have become increasingly dependent on the market, engaging in employment, trade and other activities to earn cash for food and other essentials.

Analysis of the full range of economic activities undertaken by rural populations is essential in understanding the impact of changes in rainfall or prices. Harvest failure, for example, would have less effect on a household dependent on urban employment than on one heavily reliant on its own production. The starting point of food economy analysis is thus the baseline picture – how different families in a particular food economy area normally obtain food and non-food income. The baseline picture consists of the following information:

- sources of food;
- sources of cash income;
- market and non-market means by which families obtain food and cash: where they go to find work or sell firewood, and when and where they buy grain; the nature of kinship relations; etc.;
- assets held, including food stocks, cash savings and livestock holdings.

Increasingly, information on expenditure is also collected.

An example of how the baseline picture is usually presented is provided in Figure 2 (see opposite). This shows the sources of food income for households in an area in Kenya. The way in which these percentages are calculated is explained in more detail in section 2.2.5 on quantification (page 13).

Four elements in food economy analysis which are implicit in Figure 2 require elaboration. First, the description refers to a particular geographic location or Food Economy Zone (Lower Kitui). Second, the

pie chart descriptions are differentiated according to wealth. Third, they relate to a ‘normal’ year. Finally, the relative importance of food options is presented in terms of percentage ranges for the year.

2.2.1 Food Economy Zones

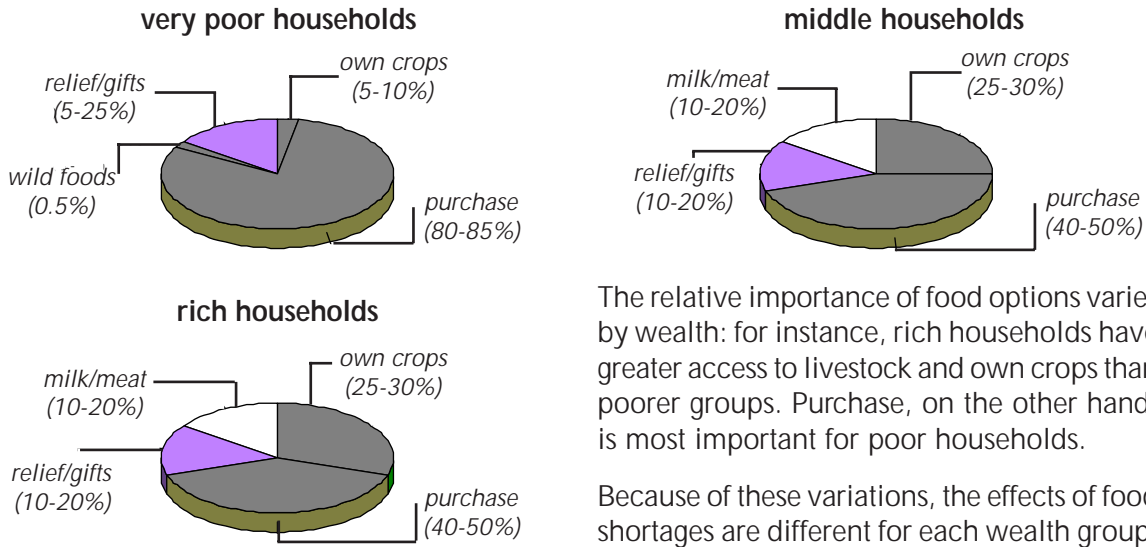
Food economy descriptions relate to Food Economy Zones (FEZs) – areas in which the same food and cash income options tend to be available and relied upon to varying degrees by poor, middle and rich families. In general, agro-economic boundaries determine the initial FEZ outline. Thereafter, differences in crops produced, livestock numbers, the existence of rivers and lakes, highland or lowland opportunities, the proximity of markets and a number of other factors that might define shared-risk further refine the initial outline. An example of FEZ delineation is provided in Figure 3 (see page 12).

The rationale for using FEZs rather than conventional administrative boundaries is that administrative boundaries may encompass a number of different ‘livelihood’ zones: for example, what makes households vulnerable to food shortage in a highland area, where there is a high dependence on agricultural production and where opportunities for earning cash are limited will probably be quite different to what makes households vulnerable to food shortage in an adjacent lowland area where household income is derived from livestock ownership and employment. Data on livelihoods collected according to the administrative area would be an average of two quite different populations; a figure referring to – say – the expected harvest for the area will not reflect the figure for a ‘real’ family, but will, instead, fall between two realities. An analysis of the district’s vulnerability based on aggregate administrative data is likely to be misleading if there are important differences in livelihood patterns within the district.

These variations commonly occur within the boundaries of relatively small geographic units. For instance, in Bor County in southern Sudan, the majority of families are agro-pastoralists with seasonal reliance on fishing. Yet, along the Nile River, which forms the western boundary of the county, a minority of families make their living through specialised fishing, trading with inland Dinka families for access to grain. Vulnerability in times of crisis will lead to very different results for these two groups. Similarly, subsistence farmers and wage labourers on plantations commonly live side-by-side in the same district. Since a drought will affect these two groups in different ways

Figure 2

Sources of food for households in Lowland Kitui, Kenya: a 'normal' year



Source: FEAT, July 1997

The relative importance of food options varies by wealth: for instance, rich households have greater access to livestock and own crops than poorer groups. Purchase, on the other hand, is most important for poor households.

Because of these variations, the effects of food shortages are different for each wealth group.

(reducing the production potential of the first group, and the purchasing power of the second group) it follows that they must be analysed as two separate FEZs.

Although the use of FEZs goes some way to resolving problems related to the presence of groups with different livelihood patterns within the same administrative area, it creates other problems. This is because, while, wherever possible, standard administrative boundaries are used to delineate FEZs, there is no guarantee that they will neatly overlap. Indeed, there may be no correlation between FEZs and administrative boundaries. As a result, data collected on the basis of FEZs may not be compatible with data collected (sometimes over many years) on the basis of administrative areas. This can mean that large historical data sets cannot be used in the formulation of food economy baseline pictures. A further problem arises in relation to the fact that governments will tend to use existing administrative units to implement responses to food security problems, and so conclusions drawn on the basis of FEZs may need to be reconverted into administrative units. This is costly, and will inevitably involve approximations, thereby introducing a potential source of error into calculations. Thirdly, while administrative boundaries may have been established for decades, and be widely known, FEZs are, in the final instance, determined by the food security practitioner concerned. In order to be sure that

everyone is debating the same problem, work will be needed to ensure that the FEZs are understood by all the key stakeholders².

2.2.2 Wealth differentiation

It has long been recognised that, just as the same external shock will have different overall effects on different FEZs, so it will have a differential impact on families of different wealth. Thus food economy analysis also incorporates differences between wealth groups.

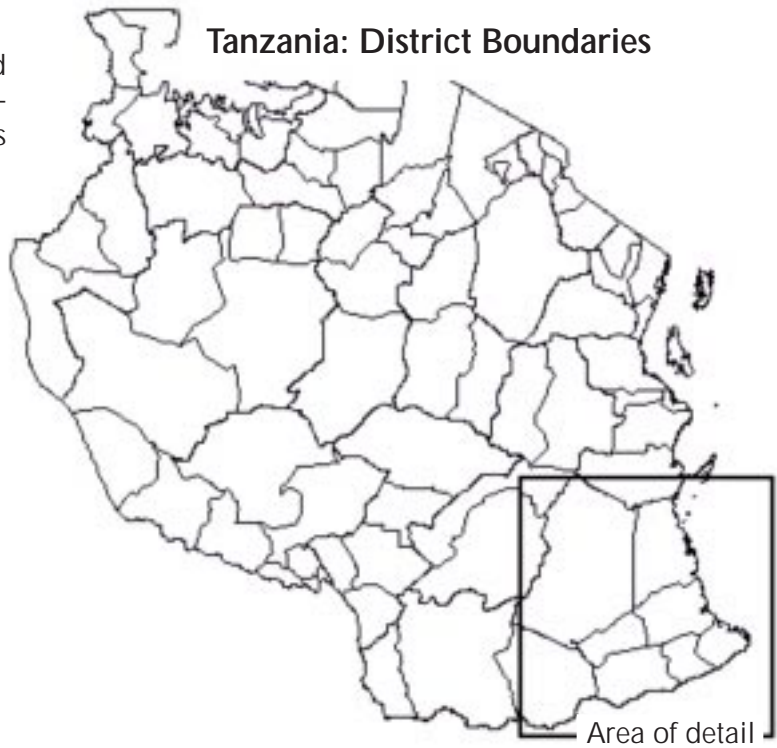
The options available to a household with respect to obtaining food are related to the assets owned by that household: poor households with little land may labour for richer households to get money to buy food, while rich families may use profits from agriculture as capital to engage in trade. In the event of a crisis, poor and rich households can be affected quite differently and therefore warrant separate examination. Food economy analysis does not look at poor, middle and rich families in isolation, however, but in relation to each other, for exchanges between these groups will typically determine just how severe the effects of a crisis will be.

At a minimum, food economy analysis incorporates a 3-way division of 'poor', 'middle' and 'rich' households, although more categories have been used where necessary and where time allows. In the field, wealth categories are defined through interviews with focus groups and local key

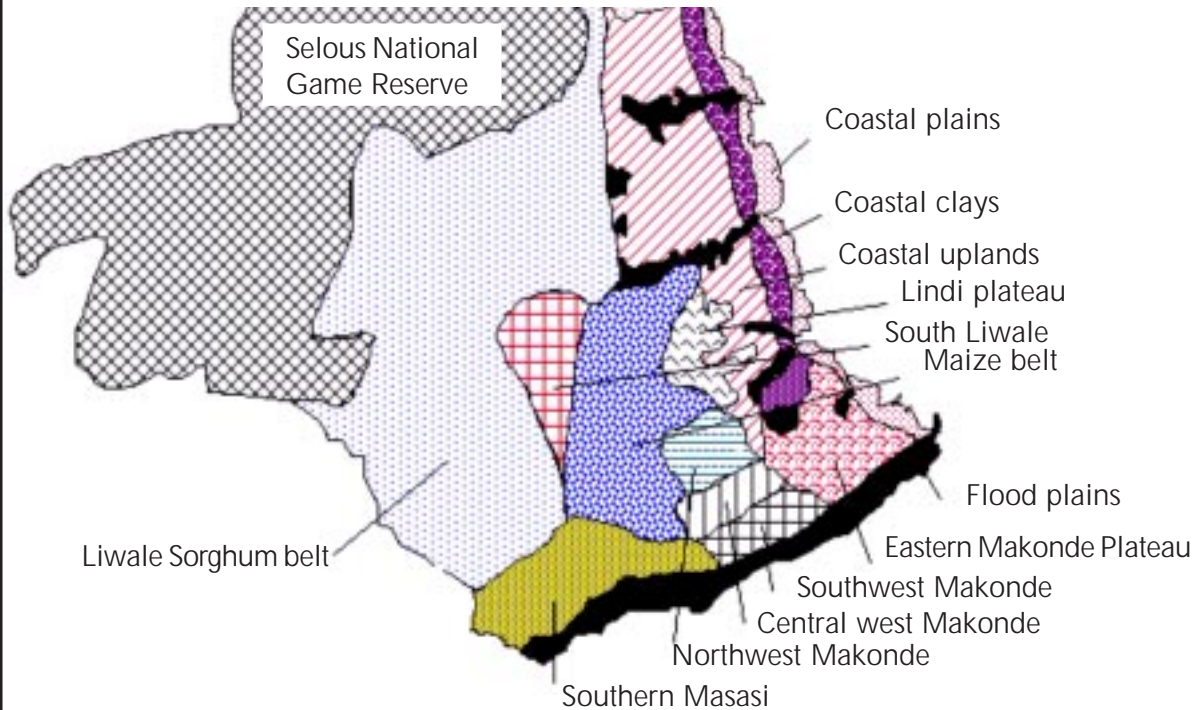
Figure 3

An example of FEZ deliniation: Tanzania

SCF-UK Household Food Economy Assessment – Mtwara and Lindi Regions – November 1997



Food Economy Zones of the southern coastal area of Tanzania



Source: Land Resource Development Centre, 1993

informants³; ‘poor’ and ‘rich’ are thus relative to local standards, not to an externally defined one. In pastoral areas, for example, ‘richness’ is generally defined in respect of the number of livestock a household owns, while in agricultural areas, land may be the most important variable in defining poverty. In some areas, a combination of criteria may be used, although wealth groups are always related to a measurable commodity, such as cash income, number of livestock, acres of land. Creating clear wealth categories minimises the inevitable subjectivity attached to all field work and allows for comparisons within and across different countries.

2.2.3 A ‘normal’ year

In food economy terms, a ‘normal’ year is defined simply as that year which occurs most frequently. This does not suggest that the ‘normal’ year is necessarily a good or a bad year in terms of production, nor that the ‘normal’ year is an acceptable one in terms of access to food. In many semi-arid economies the most frequently occurring year is considered a bad year, or one in which production fails to meet minimum needs; similarly ‘normal’ years in the context of war-affected countries like southern Sudan are conflict ridden. Raids and looting may, in such circumstances, be factors that have to be included in any analysis.

Where there is difficulty in defining a ‘normal’ year, a particular, named reference year is chosen instead, the key requirement of food economy analysis being the unambiguous selection of a baseline year⁴. From this, one can build a description that provides a context for understanding the effects of change.

2.2.4 Food and cash options

‘Food income’ is the food a household customarily consumes directly. For most food economy enquiries, with the exception of refugee food economy work (where the circumstances warrant a closer look at nutrients), the emphasis is on understanding how the household meets its basic calorific needs.

There are limited options for obtaining food in any society. In broad terms the options can be categorised under two headings – production and exchange – as shown in Box No 3.

The exchange options include non-market transactions (e.g. through social relationships), and forms of non-reciprocal exchange, where repayment is not expected from the family. This

Box No. 3

Options for obtaining food

Production options

crop
livestock
fishing
hunting
wild foods

Exchange options

food and cash crop sales
livestock / livestock product sales
own labour
fish sales
wild food sales
sale of products manufactured at home
petty trade
gifts or relief
raiding / stealing

includes gifts of food from relatives, and relief food.

Food economy analysis is essentially a study in determining the combination of options employed by particular households in a FEZ and the relative importance of these options in a normal year. Most other agencies working on food security establish lists of options similar to the one opposite: this is not new. What is new is that the food economy approach involves quantifying the contributions of the different sources of food and cash, and expressing them in relative (i.e. percentage) terms, creating a model for analysing changes: if one option fails, it is readily apparent just how much of a deficit this creates in the overall household food income; it is also possible to consider which of the other options might be able to expand to cover the deficit, or if all else fails, just how much relief food is required.

2.2.5 Building the picture: quantification

The way in which these options are quantified is, of course, critical. In essence, the calculation is simple, and hinges on three assumptions:

1. In normal years, most people survive⁵.
2. In order to survive, household members must be obtaining on average a minimum number of calories (at least) per day over the year⁶.
3. There are limited options for obtaining food in any economy, through production or exchange.

The point of these rather basic assumptions is that they allow for the conversion of information on food sources into percentages and demand that the picture ‘makes sense’ as a whole. For example, if it is known that, in a given area, a typical family consumes around 12 sacks of grain a year, information indicating that households are producing only three sacks a year from own cultivation while earning only enough from seasonal employment to buy 6 sacks a year, is either wrong or incomplete. The food economy approach then requires that the situation is re-examined until it ‘makes sense’.

2.2.6 Food income

If it is assumed that people survive in normal years, and that in order to survive they must be eating enough (a mean minimum of 1900 kcal/person/day) and it is known which options families are using to obtain that food, and the amount of food received from each option, then you can approximate the relative value of those options in relation to annual needs. With a grain-based diet, for example, in a ‘normal’ year a family of six must be getting through at least one 90 kg sack of grain a month⁷, or 12 sacks a year. Thus, if a family normally produces around 6 sacks of grain per year, own crop production will make up approximately 50% of annual food income. A similar calculation can be made for non-grain commodities by converting them to calorie equivalents and comparing what is obtained to a standard kcal/person/day minimum requirement.

The calculations can be shown most clearly through an example. Let us suppose that, in an area in which the diet consists mainly of grain and, seasonally, fish, milk and meat, interviews and secondary research have revealed that, for a poor family:

- around 7 – 8 sacks of grain are obtained each year from its own production;
- one of the younger boys works during the ‘hunger months’ for one of the richer households in the village, maintaining fences and clearing new bush. He is employed for 5 months and brings home an average of 2 kg of grain each day he works. Since he works around 4 – 5 days a week, he earns a ‘salary’ on approximately 90 days of every year;
- two of the younger children fish during the rainy season at the nearby river, catching 2 – 4 fish every day, with each fish weighing around 1kg. Most fishing occurs during a three month period

right after the start of the rains.

- during the year the two milk cows owned by the household tend to give birth and begin lactating; most years the household expects 2 litres of milk per cow towards the beginning of the 4-month lactation period and 1 at the end;
- during the dry season the household expects to kill at least one of its bulls for food. The meat is shared throughout the community, but throughout the year they receive at least as much as they share out. They also eat the meat of cattle that die of natural causes, estimating that this represents at least twice as much meat as they obtain from the one slaughtered bull;
- they receive a sack of grain each year during the relief food distributions.

The food economy approach involves comparing the value of each of these food options with the other. ‘Qualitative’ information is presented as a list of options and quantified for a family of six – see Box no. 4, opposite.

2.2.7 Cash income

Cash income is the term used to explain where the cash comes from that makes up the purchase component in the food sources pie (as well as the cash used to purchase essential non-food items). Cash income and food income are separate categories that do not ultimately get combined. The percentage contributions of different sources of cash are calculated as a proportion of total cash income. For example, income for a typical poor household may come from the following⁸

- the sale of 2 quintals (200 kg) cowpeas (50 kg sack sells for 90,000 Sh.);
- the sale of 18 litres of honey at 13,000 Sh per litre;
- labouring for others – 2 family members working for 90 days for 7,500 Sh.(total) per day;
- sale of fruits and vegetables totaling 150,000 Sh.

All the figures above can be expressed as percentages of total income.

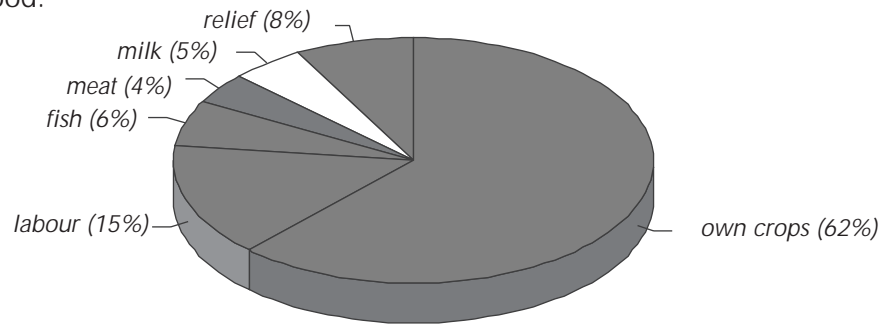
2.2.8 Other information: assets and market/non-market connections

In addition to households’ access to normal year food and cash income options, food economy

Box No. 4

An example of quantification for a family of six

- 8 sacks of grain;
- 90 days of labour at a rate of 2 kg grain/ day;
- 3 kg of fish per day for 3 months;
- 3 kg of meat per day for one month;
- 3 litres of milk per day for 4 months;
- 1 sack of relief food.



The mathematical process used to derive these percentages was outlined above using grain as an example. Taking milk as a further example, the calculation is as follows:

- the approximate calorific value of 1 litre of cow's milk is around 633 calories;
- 3 litres of milk has a calorific value, therefore, of approximately 1900 calories, or enough to cover around one-sixth of the minimum daily calorie needs for a family of six;
- this source of food is available for only one third of the year, so it represents one eighteenth (one sixth multiplied by one third) of the household's minimum needs for one-third of the year, in other words, approximately 5%.

baselines include enquiry into 'bad year options', or the resources available for households to draw upon in a bad year. These resources can include assets:

- food stocks
- cash savings/capital assets
- livestock holdings

and the ability to obtain more food or cash from a particular source:

- expansion of wild foods
- increased employment
- increase in petty or other trade
- increase in firewood/grass/beer/handicraft sales
- redistribution/gifts

Estimating the 'expandability' of the options listed above is far from easy. In practice, the way in which this is done will depend on the purpose and nature of the assessment in question. Where a crisis has already emerged, it may be possible to get a reasonably good idea of what changes are taking place in: the demand for labour or firewood; the potential for earning extra cash; and, the

contribution that wild foods are making to food income. In general, however, the analyst often has to make a judgement based on a synthesis of the following information:

- estimates from focus groups and interviewees in the field on the potential "expandability" of the different options;
- retrospective estimates from focus groups and interviewees on how far each of the options contributed to household food income in a named, previous 'bad' year;
- documented research on how people coped in previous 'bad' years;
- an understanding of the local market and of the extent to which demand (e.g. for employment or firewood) may expand in a bad year, and of the likely trends in prices and wages.

Each of the 'bad year' options is quantified in terms of its ability to fill a percentage of household food needs in a bad year. For instance, if you were investigating medium households in a particular FEZ and you found out the information outlined

below about food stocks, wild foods and livestock holdings, you might conclude the following about the role of bad year options:

food stocks

- in most years medium households are able to carry over 1-2 sacks of grain in the form of food stocks (which is roughly equivalent to 8 – 16% of annual food needs for a household of 6);

wild foods

- in bad years in the past they were able to rely on wild foods to cover one month of food (around 8% of annual food needs);

livestock holdings

- medium households have on average 5 goats which can be sold in bad years to obtain cash to purchase food (the equivalent of around 2 sacks of grain, or 16% of annual food income).

The above percentages are then used to offset an initial deficit in a bad year. Calculating just how much each production option (food stocks, wild foods, fishing) is likely to cover in a bad year is straight forward, as you just take the figures derived from field enquiry and apply them against the deficit. So in this case, food stocks would reduce an initial deficit of 30% to 14 – 22%, and wild foods would reduce it further to 6 – 14%.

Bad year options that depend on a market transaction are more complicated, requiring an understanding of not only what the household can sell (labour, livestock, other assets) but also the price at which it is likely to sell and an estimate of the likely change in grain prices. In other words, market elasticities become an important component in calculating the reduction of the deficit when treating market-related options. A more detailed explanation of how the information is used will be discussed in section C below.

2.2.9 How the information is gathered in the field

SCF-UK has found, over the years, that ‘official’ information rarely offers a sufficient basis for understanding people’s livelihoods: data published in aggregate form (whether at national or provincial level) often cannot be interpreted in relation to a specific population group, even where the information refers to livelihood questions, such as the size of average land-holdings, or crop yields per hectare. In some African countries, national household income and expenditure surveys are carried out periodically, and generate enormous and

detailed sets of data, stretching over many years. While these contain data on aspects of people’s livelihoods, food economy analysts believe that more localised information is still needed in order to ‘tell the story’ of how people are surviving.

Localised information can come from special official studies, NGO projects, or academic fieldwork, and can provide a rich source of understanding. Unfortunately, however, such information, when available, rarely answers all the questions necessary to construct a food economy profile. As a result, the food economy approach, while using existing documentation as much as possible, usually depends heavily on primary field-level research. Rapid rural appraisal techniques, such as community mapping and seasonal calendars are often employed, but by far the most common means of obtaining information is semi-structured interviews with individuals and groups from within the village or community.

It cannot be over stressed that the food economy approach is not a method for obtaining field data, and the tools for information gathering are not particular to it, but rather a framework in which to analyse information. However, having said this, food economy analysts do have a high degree of confidence in the means employed to obtain information in the field. This is because the food economy framework, when properly applied, points up inconsistencies in field information, as the answer to every question has to make sense not just in itself but in relation to the answers to other questions; the picture has to ‘add up’. Food economy analysts believe that this imposes a discipline on the information collection process, and introduces a rigour that is absent in many questionnaire-based surveys. Field information is cross-checked with further field information, and compared to secondary sources of information. In addition, because analysis takes place in the field rather than ‘back at headquarters’, contradictions or odd responses can be dealt with on the spot.

A major problem with the approach, however, is not so much data quality (which is a concern for every methodology) but, because of the intellectual demands of the job, the calibre of staff, and the need for training and on-going support. This is discussed further in the first case study, on southern Sudan.

Essential information requirements and examples of corresponding sources (these may vary depending on country and circumstances) are summarised in Table No. 1 opposite⁹.

Table No. 1

Food economy information requirement	Some common sources of information	Examples of essential questions
(Within country) FOOD ECONOMY ZONING	National level: agro-economic maps, soil maps, crop maps, population density maps, discussions with national level key informants.	What are the broad geographical differences in patterns of economic livelihood, including crop production, livestock ownership, reliance on fishing, market activity etc.?
(Within FEZ) WEALTH DIFFERENTIATION	Regional/district and village level: NGO/ government reports; regional/district/village officials; village leaders.	What are distinguishing factors between wealth groups? What is the distribution of wealth within FEZ?
(Within wealth group) RELATIVE IMPORTANCE OF FOOD AND INCOME OPTIONS AND EXPENDITURE PATTERNS	Village level: key informants from poor, medium and rich households; NGO/Govt. reports; agricultural surveys; market surveys.	How much does family rely on its own crop production? Is there a seasonal need to seek employment? When, for how long? What are the other sources of food and income these households depend upon? Etc.
(Within FEZ) MARKET AND EXCHANGE NETWORKS	National/regional/ district/village level: Traders, market surveys, government officials and reports, etc.	What are the food flow patterns within the country and between the country and its neighbours?; How important are cash crops?; Who would lose food or income if a particular market fails? How do prices change from good to bad year, and harvest to pre-harvest time?
(Within wealth group) BAD YEAR OPTIONS	Village level: key informants from different wealth groups; village leaders	What level of stocks, savings and assets are maintained by the households from each group? How expandable are wild foods and fish? Is redistribution or sharing a common means of dealing with a food crisis?

2.3 The problem specification: food security monitoring

Baseline pictures provide the starting point for further work, whether an organisation is in the process of thinking through community development options, macro-economic policy proposals or estimating food aid requirements. The baseline picture alone may be where some agencies stop, using it to consider alternatives for strengthening existing livelihood patterns. However, for the purposes of early warning work and food aid estimations, at least two more steps are necessary: 1. the problem specification and 2. scenario analysis.

A problem specification is the sum of information about changes in the larger economy that will affect production and exchange options available to rural households. For instance, the problem specification for a given season or year may refer to changes in crop production, prices or the quality of grazing, when compared to a normal year.

An ideal problem specification for the purposes of food economy analysis would include an indication of the performance of all production and exchange options available to rural households. In most cases, however, problem specification information is sketchy: crop yields (as a proxy for crop production), prices (as a proxy for market-related activity) and NDVI (as a proxy for grazing conditions and by extension, livestock, health) tend to be the only indicators consistently tracked by monitoring agencies.

The construction of food economy baseline pictures highlights the most appropriate indicators to monitor, and provides a context for exploring the implications of changes in economic conditions. Table No. 2, opposite, outlines some of key areas that food economy analysts argue should be better monitored.

As problem specification information is usually gathered by a number of early warning and government agencies who do not necessarily conduct baseline investigations, there is a clear need for closer collaboration between food economy analysts and monitoring experts.

2.4 Scenario analysis: the effects of the problem on households

In the scenario analysis, the effects of the problems identified in step 2 (the problem specification stage) are calculated in respect to their impact on

household's access to food. The first-round effect is known as the 'initial deficit'. Calculations are then made as to the extent to which households will be able to cope.

Figure 5 (on page 21) illustrates the analytical process from the construction of the baseline picture to the calculation of results. For the sake of clarity, the example shown takes a typical, but hypothetical grain-based food economy, and looks at the impact of a 'typical' problem – poor rainfall – on people's access to food.

2.4.1 Calculating the initial deficit

The 'initial deficit' refers to the deficit that arises in a family's food income as a result of a change in external conditions (like crop failure), before account is taken of the ways in which the family might fill the gap through the use of food stocks, increased wild food consumption, or the sale of additional livestock.

For example, the baseline picture for 'very poor' households¹⁰ in the Lindi Plateau in southern Tanzania suggests that these households rely on their own crop production to cover approximately 60 – 75% of annual food income in most years. A drought which lowered yields to 50% of normal could therefore be estimated to create an initial deficit of at least 30 – 38% (see Figure 4 on page 20).

This is an example of what can be a difficult task given the many and varied implications of even a simple problem such as inadequate rainfall. The example in Figure 5 (see page 21) gives a typical problem specification for such a case, with the consequent effects on individual sources of food:

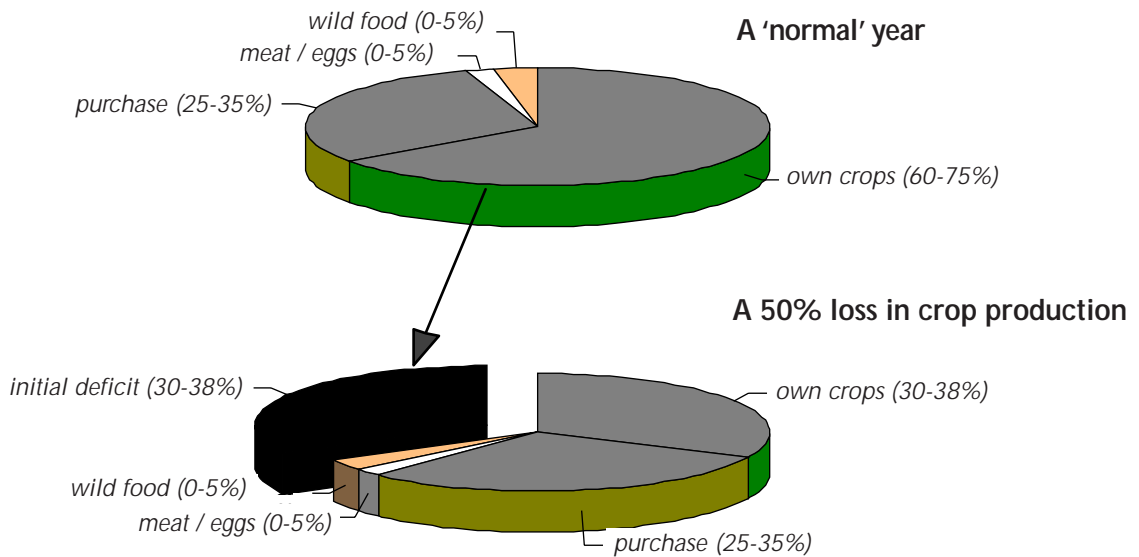
- food crop production is reduced by 75%;
so the contribution from crops is reduced from 40% to 30% of total food income;
the deficit caused by the reduced harvest is 10% of food income.
- milk yields are 60% of normal because of poor grazing;
so the contribution from milk is reduced from 10% to 6% of total food income;
the deficit caused by reduced milk yields is 4% of food income.
- livestock prices are down to 75% of normal, because animal condition is poor and more animals are being put on the market;
so, whereas the sale of 2 goats would normally buy about 2.4 sacks of 90 kg (or about 20% of

Table No. 2

Food or income option	What to monitor (the critical focus of monitoring is in bold italics – possible indicators are listed under influencing factors)	Interpretation in light of food economy baseline
FOOD AND CASH CROP REDUCTION	<i>yields and total production by FEZ and income group</i>	Findings on production should be compared to baseline estimates of annual reliance on crops. Food crop yield variations only serve to indicate relative food security when compared to a baseline picture of how important food crops are in normal years. Similarly, if families rely on cash crops to provide them with vital income to purchase food, (or if food crops are sold to raise income for non-food expenditure when cash crops fail) the impact of a loss in such income only makes sense when compared to the baseline.
	<u>influencing factors</u> labour constraints area cultivated seeds and tools pest damage timing of planting rainfall patterns	
LIVESTOCK PRODUCTION	<i>milk yields and cattle/goat/sheep health by FEZ</i>	Again, findings should be compared to baseline information. If milk yields are lower than normal, or cattle disease higher, this will have an influence on direct food intake for some groups, as well as cash income derived from livestock sales.
	<u>influencing factors</u> grazing conditions rainfall concentration of cattle disease outbreaks	
FISHING PRODUCTION	<i>fishing yields</i>	Levels of fish production should be compared to the baseline, both in terms of contribution to immediate consumption and to cash income.
	<u>influencing factors:</u> water levels water temperature water toxicity available equipment	
WILD FOODS PRODUCTION	<i>yields of major wild foods utilised in areas of highest reliance</i>	It is difficult to know exactly how well wild foods fare in different years, so tracking rainfall will not necessarily provide the final story on fluctuations of wild food yields. The best immediate method for assessing the possible contribution of wild foods is to compare in purely relative terms the expected contribution of wild foods this year to past years through field enquiry. Until we have better figures on nutritional contribution, and 'normal' yields of various wild foods, this may be the only option.
	<u>influencing factors:</u> rainfall and temperature available labour for gathering	
EXCHANGE OPTIONS	<i>consumer and producer prices</i>	Prices can be used in conjunction with baseline information to help analysts to make reasonable judgements about how much food families may be losing given a particular price rise; or what kind of assets these families may be able to save if retail grain prices drop.
	<u>Influencing factors</u> price elasticities supply/demand infrastructure government policies	

Figure 4

The initial deficit after a 50% loss in crop production: very poor households in Lindi, Tanzania



Because we know how important crop production is in normal years, we can estimate the effects of a loss in production on food income in a bad year.

Source: FEAT, November, 1997.

food income in the baseline picture), they would now buy only 1.8 sacks at normal grain prices. But with a 25% increase in grain prices, they would buy even less: only 1.4 sacks, or 12% of food income;

the deficit caused by reduced income from livestock sales is 8%.

- labour opportunities, normally entirely agricultural, are down by 50% because of reduced demand among the richer farmers, and because there has been an influx of people from neighbouring areas also looking for work; so whereas 2½ months of work by one household member would normally buy about 2½ sacks of 90 kg (or about 20% of food income in the baseline picture), 1¼ months of work would now buy just 1¼ sacks at normal grain prices. But with a 25% increase in grain prices, these earnings would buy even less: only 1 sack, or about 8% of food income; *the deficit caused by reduced income from labour is 12%.*

The total initial deficit is, therefore, 34% of food income.

2.4.2 Calculating how much the initial deficit may be reduced

Calculating the 'initial deficit' is, of course, only half the story; we also need to assess what strategies households can employ to make good this deficit, and the extent to which this can be achieved. Underlying this assessment is the assumption that families will attempt to survive by exploiting opportunities in a way that preserves, as far as possible, productive capital – for example they will use food stocks, or seek additional cash employment before selling livestock.

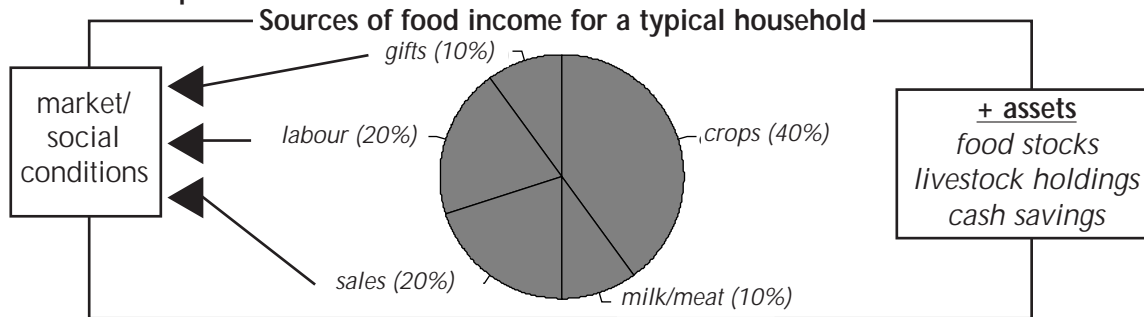
Studies on the 'coping strategies' of particular communities (where these exist) are used to increase understanding of the sequence of steps taken by families in response to adverse shocks. Where such studies are not available, it is assumed that the following list of options are used in the order stated below:

1. consumption of food stocks;
2. consumption of wild foods;
3. use of cash savings;
4. paid employment;
5. livestock sales;
6. other trade;

Figure 5

Food economy analysis: the impact of poor rainfall on people's access to food

1. The baseline picture



2. Problem specification

Examples of problems...

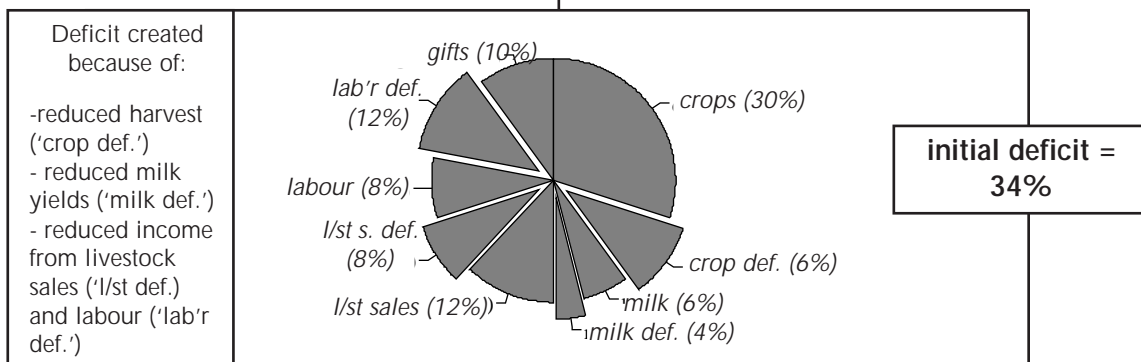
- Reduced food/cash crop production (pests/low rainfall/fewer inputs)
- Poor grazing
- Poorer fishing
- Fall in prices
- Less work available
- Rise in grain prices

...which are expressed as

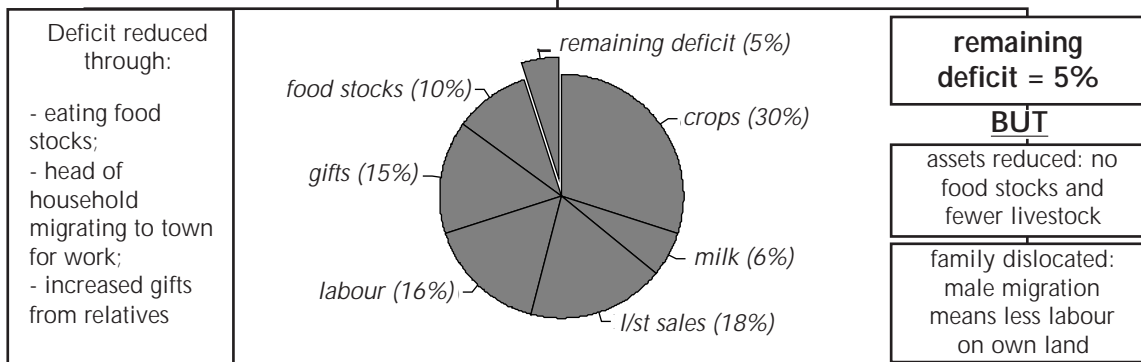
- Food crop production 75 % of normal
- Milk yields 60% of normal
- Livestock prices 75% of normal
- Half as much work available as normal
- Grain prices up by 25%

3. Scenario analysis

i) *Calculating the initial deficit*



ii) *Calculating how much the initial deficit may be reduced*



- 7. non-food production trade;
- 8. non-market redistribution.

In the example shown in Figure 5 (page 21), it is estimated that the deficit could be made up in part through the following strategies:

- *consumption of food stocks.* In this example, a typical household normally carries over between 1 and 1½ sacks of grain from one season to the next. If this grain were used, it would contribute an additional 10% of food income.
- *employment in the town.* If the agricultural work dries up, the only opportunities for earning cash through labouring are in the town, some distance away, to which men will go for an average of about 2 months. Grain is cheaper in the town, so it will be remitted directly to the family; but even so, given the very low wages on offer, and additional transport expenses, a typical household is expected to receive only about 1 sack of grain over that period. This would contribute an additional 8% of food income.
- *increased livestock sales.* If the typical household were to sell one additional goat, then this would bring in an additional 6% of food income at current prices (see calculation above).
- *gifts from relatives.* For many households, ties with relatives living in the town are strong; normally, these rural households accept one or more children from the town for some weeks during the hot season, together with a cash payment equivalent to about 10% of food income (see 'Gifts' in the baseline picture pie chart). In

a bad year, it is estimated that this cash payment might increase to about 15% of food income.

In this way, the potential reduction of the initial deficit can be calculated. In this example, an additional 29% of food income can be obtained from the strategies outlined above (an additional 10% by eating food stocks; 8% from labouring in the town; 6% from selling the extra goat; and 5% from increased gifts from relatives. According to this analysis, the typical household will be able to reduce their food deficit from 34% to only 5% of food income.

Given this analysis, policy makers might be tempted to believe that broadly speaking, people can cope in this particular situation. However, the analysis also shows the costs associated with the strategies employed in reducing this deficit, namely:

- food stocks consumed; the household has less to fall back on if another bad year follows this.
- a key contributor to household labour is absent for 2 months, possibly at a time of peak demand for labour on his own land. This has consequences for the following season's harvest.
- livestock holdings (already small) are reduced further. Again, vulnerability to another season of poor rainfall is increased.

In this way, one can try to show the possible consequences of different levels of assistance, and the likely long-term effects of 'coping' with an immediate food crisis.

3

How the food economy approach has been used: case studies

Three case studies are presented below to illustrate how the food economy approach has been used to assist in food aid decision-making. The first case describes its use in southern Sudan, highlighting a particular instance in which it was employed to analyse the effects of a cattle raid on immediate food needs. The second example outlines the use of food economy analysis in a refugee camp setting. Finally, the third case study points up the use of food economy analysis to help make sense of the economic changes resulting from the war in Rwanda.

3.1 Analysing the effects of a sudden loss of food resources: southern Sudan

Given the constant changes in the political context in southern Sudan, a method for analysing food insecurity is needed that allows organisations to consider the effects of politically or militarily motivated actions on village food security.

Food aid decision makers are under constant pressure from different political forces in southern Sudan. The Khartoum government would arguably prefer that all aid to rebel-held areas was stopped completely; the two major factions in the south are continually vying for increased allocations to their areas of control; new factions are formed for the sole purpose of making claims to existing resources. Each new turn in political events creates the

conditions for fresh assistance requests. Under such circumstances, decisions about food aid allocation are highly contentious. At the same time, there is no question that food aid is needed: billeted military personnel sap food reserves; raids cause destruction to fields and livestock; conflict blocks trading routes; and fear may lead people to limit cultivation to safer areas.

Do the risks associated with providing humanitarian assistance such as the possibility of diversion by combatants, outweigh the mandate to assist those in most need? This is a question best left to another paper. However, as long as the assistance continues, one way to help minimise such risks is to employ a methodology that enables practitioners to identify those in most need and provide a more rational argument for or against food assistance, which can stand up to political manipulation.

Opening lines of communication with civilian villagers and enabling them to explain their situation adds power to their claims and reinforces their ability to retain the assistance once provided, in the face of powerful competition within the community. In southern Sudan, the food economy approach has provided a framework in which villagers have been able provide information to enable decision makers in the U.N. and other agencies to understand the rural economy.

In 1994 SCF-UK seconded a food economy analyst to WFP, to act as a resource for WFP and other

interested OLS agencies. The Food Economy Analysis Unit (FEAU), located within WFP, took shape after a year of developing relationships, training, and outreach, and is comprised of the Unit Manager, a Training/ Information Officer, and a Database Manager. The main objective of the Unit is to provide decision makers in southern Sudan with high quality information about the food security situation of people living in the region. This is accomplished through a training programme, a database set up to create an institutional memory, and various mechanisms intended to encourage the effective use of information provided by the unit.

An example of the kind of analysis provided by the unit follows:

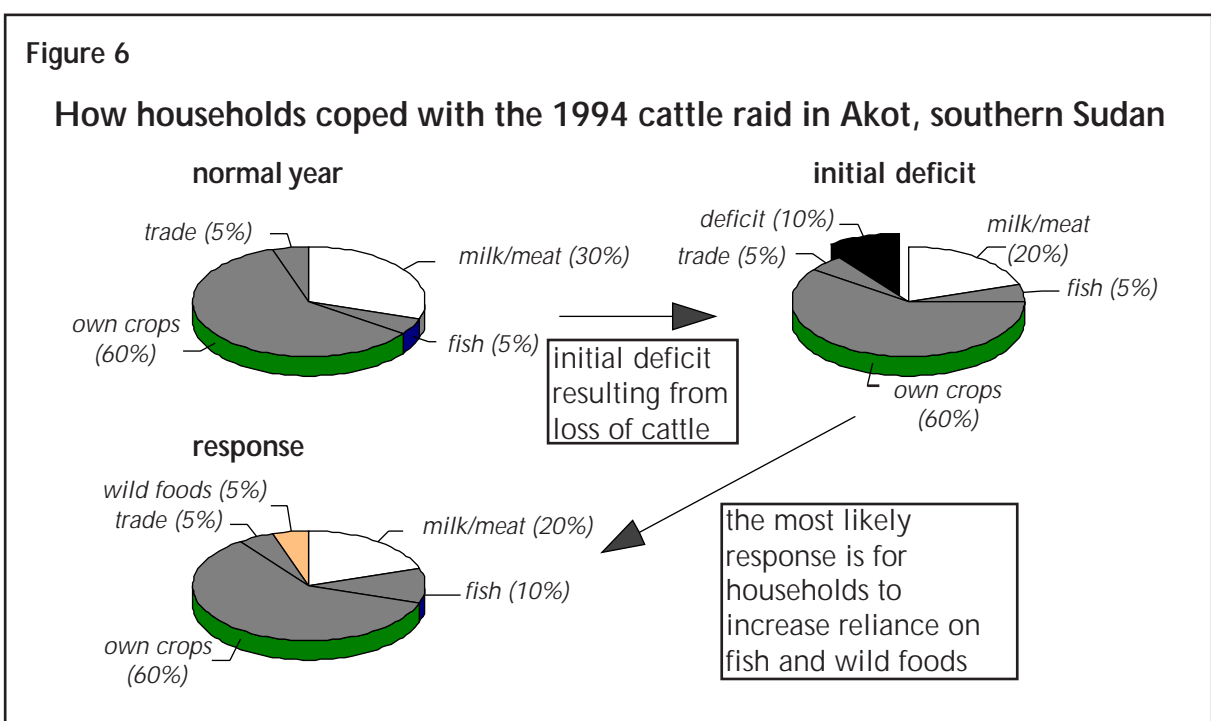
In October of 1994 a cattle raid took place on Akot. The age-old tradition of cattle raiding has recently become a vehicle for military action in southern Sudan. In the Akot raid, Nuer soldiers who were, at that time, acting under the leadership of Riak Machar and the SSIM, attacked a well-established military base of John Garang's SPLA/M, killing civilians and soldiers alike. Cattle, whilst stolen back and forth for hundreds of years between the Nuer and Dinka, have recently become major targets of military operations, as they form the basis of the local economy, providing food, currency, and the means of ensuring future food security. Killing or taking cattle fundamentally undermines an enemy's power base, challenging its attempts to feed soldiers, and implicitly undermining its image as the village protector.

When the October cattle raid occurred, the immediate question for the aid agencies was to determine the extent of food aid needs. However, the results of food economy analysis suggested that while the longer-term consequences of the raid needed addressing, an immediate food aid response was not necessarily appropriate.

Information about how many cattle were taken, whether or not crops were affected or stores ruined was obtained through enquiries made by UN representatives in the field¹¹. It was found that 10 – 15% of the cattle in one village had been taken or destroyed¹². The resulting loss in milk and meat would have been expressed as an immediate decline from around 30% of normal annual food income to around 20% of food income¹³, thereby creating an initial deficit of 10%.

It was estimated that this deficit would be countered through wild food consumption (adding an extra 5% to food income) and fishing (also adding an extra 5% to food income), as more people would be sent to the dry season grazing lands. Crop production was good that year, making it possible for people to increase their reliance on grain and non-grain crops, particularly cassava. (See Figure 6 below).

This analysis (condensed for the purposes of this paper) encouraged WFP and other aid agencies to consider alternatives to food aid. The longer-term implications of the attack, including an increase in the number of female-headed households (due to the deaths of adult men in the village), the increased



strain associated with rebuilding cattle stocks, and a possible disruption of trade with Nuer neighbours, were integrated into future analyses of Akot and surrounding areas.

The food economy approach in southern Sudan has helped decision-makers understand how the rural economy functions, and has provided a basis for more appropriate decision-making on the part of food aid providers. The approach has also encouraged programme managers to state their rationale for allocation decisions, which, previously, had rarely been clear, and often relied heavily upon a food monitor's subjective impressions of the physical appearance of villagers.

There are, however, some weaknesses with how the Food Economy Unit in southern Sudan functions. Perhaps the most significant (and intractable) problem is that the quality of the information is inextricably related to the quality of field staff who gather the information. The approach requires a high degree of training, and a well-educated, enthusiastic and committed field staff. Such staff are not always in plentiful supply. A fairly large turnover in staff also creates an unevenness in the quality of information. A strong focus on training has been used in an attempt to reduce rates of staff turnover.

Even where staff are motivated, the use of standard reporting formats and procedural guidelines can, in situations where this leads to standardisation of the process of information gathering itself, result in poor results being obtained. Field staff need to be astute and willing to change tactics; their sensitivity to each new interview situation and ability to respond appropriately can make or break the quality of the information. However, there is a conflict between the need to have an iterative, flexible approach and the need to standardise so that the information provided by the least experienced monitor is compatible with that of the rest of the team.

3.2 Analysing the effects of a proposed cut in 'incentives': Kakuma refugee camp, northern Kenya

The original impetus behind efforts to formalise the food economy approach was the need to better understand rural economies and the conditions that created food insecurity. In recent years, however, food economy analysts have begun to think about different applications of the approach, extending its use to urban settings as well as refugee camps.

The most successful alternative efforts to date have been in refugee settings.

One of the most contentious issues for refugee camp managers is the setting of the food ration level. Food aid agencies are torn between an obligation to provide sufficient levels of food on the one hand and to ensure accountability to donor agencies and cut costs on the other. Decisions on ration levels are complicated by the fact that camp officials may have little knowledge of how refugees make ends meet, including their access to alternative resources and the networks of sharing and redistribution within the camp. A decision to change ration levels or any other condition in the camp, therefore, can have serious and unintended consequences. In the absence of a framework in which to make decisions, agencies have often to learn through trial and error.

In a number of instances over the past two years, UNHCR and WFP have requested food economy analysis prior to the re-consideration of ration level which occurs as part of the annual Refugee Food Needs Assessment Mission. UNHCR and WFP saw the food economy assessments as an opportunity to obtain both basic contextual information on camp economies and an initial analysis of the consequences of changing ration levels of other inputs. As a result, food economy assessments have taken place in Kakuma, Dadaab, northern Uganda, Eastern Sudan, and Kebri Beyah refugee camps. Part of the analysis in Kakuma follows:

Kakuma refugee camp is located in northern Kenya, 95 kilometres from the border with southern Sudan. It is temporary home to around 33,000 people and eleven nationalities. The camp was established in 1992 to accommodate the influx of southern Sudanese following a government offensive; the majority of camp dwellers are southern Sudanese. Other nationalities have been transferred over the years since 1992 from other camps in Kenya.

As with communities in rural food economy analyses, variations in wealth distinguish groups within refugee populations. In Kakuma differences in wealth are largely determined by access to 'incentives' or wages paid by NGOs to refugee employees. At least five groups were identified for the purposes of the Kakuma study: 1. the poorest, comprising a group referred to as 'unaccompanied minors' living in group care; 2. 'poor' families, who had no members employed but received help from richer relatives in the camp; 3. 'less poor' families who had no member employed, but received gifts and were engaged in small

businesses; 4. the middle group who had a member of the immediate family employed; and 5. the better off, usually Ethiopians or Somalis, who had larger businesses, such as coffee houses or video stores. The approximate breakdown is presented in Figure 7 (see below).

As a general rule, it is widely expected that refugees will develop strategies to support at least part of their own food requirements by the fifth year of residence in a camp. Camp authorities were considering a cut in rations on this basis. They were also considering a cut in incentives, based on a recent head count which had reduced population numbers. The critical questions at the time were related to how a change in either the food ration or the incentives would affect refugees.

A brief illustration of the food, income, and expenditure patterns of the 'poor' group is presented opposite in Figure 8 as an example of how the baseline information was summarised. Three points relating to the income and expenditure patterns of this group are worth noting here:

- (i) Some of the ration is sold to obtain cash. To make up for this, some cereal (about 8% of food income) is therefore either bought or, more commonly, received through gifts.
- (ii) Cash is obtained largely through ration sales; but a considerable proportion (20%) is obtained through gifts from relatives in the 'less poor' group. They in turn receive gifts from the 'middle' group, the incentive earners. Thus, even though only a portion of the population receive incentives directly,

the incentives 'trickle down' to most other households in the Sudanese community.

(iii) Most cash (40%) is spent on 'nutrients'; i.e., non-cereal food such as milk, sugar, vegetables.

Two scenarios were investigated in the analysis, and formed the basis for the two problem specifications:

- a 25% reduction in incentives; and
- a 10% cut in rations.

These were imposed upon the baseline picture shown above. The likely effects of the two problems on 'poor' families are illustrated in the pie charts below, presented opposite in Figure 9.

According to the analysis, a 25% cut in incentives would reduce both the food and cash income of 'poor' families, because of the probable reduction in gifts received from the 'less poor'. Firstly, the 'poor' group would receive fewer gifts of food, and an estimated food deficit of around 3% would arise in food income. Secondly, around 5% of cash income would be lost, again through a reduction in gifts. The question then arises, where would expenditure be cut? It was thought that the most likely reduction would be in spending on nutrients, since, for example, firewood purchases could not be reduced. The remaining budget would cover only milk and sugar for the children.

A 10% ration cut would also affect the food income of the 'poor' group, but not solely through a simple proportionate reduction in the ration received (so that food income from the ration is reduced from 92% to 82%). Food income from gifts or purchase

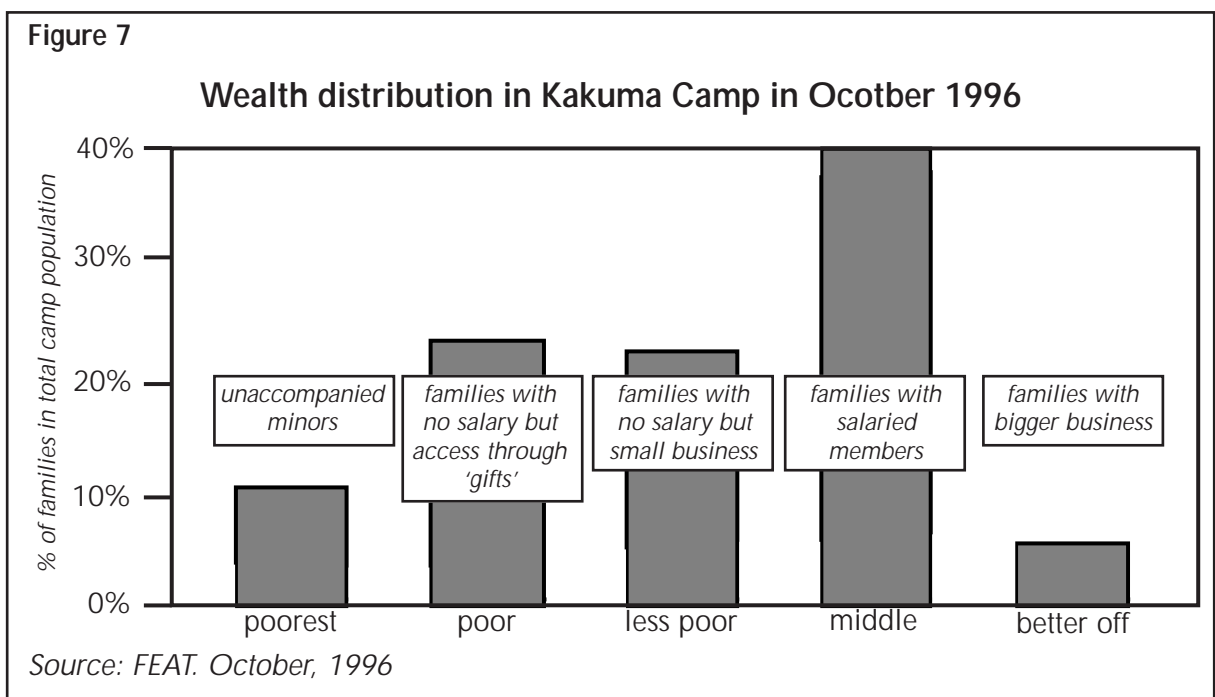
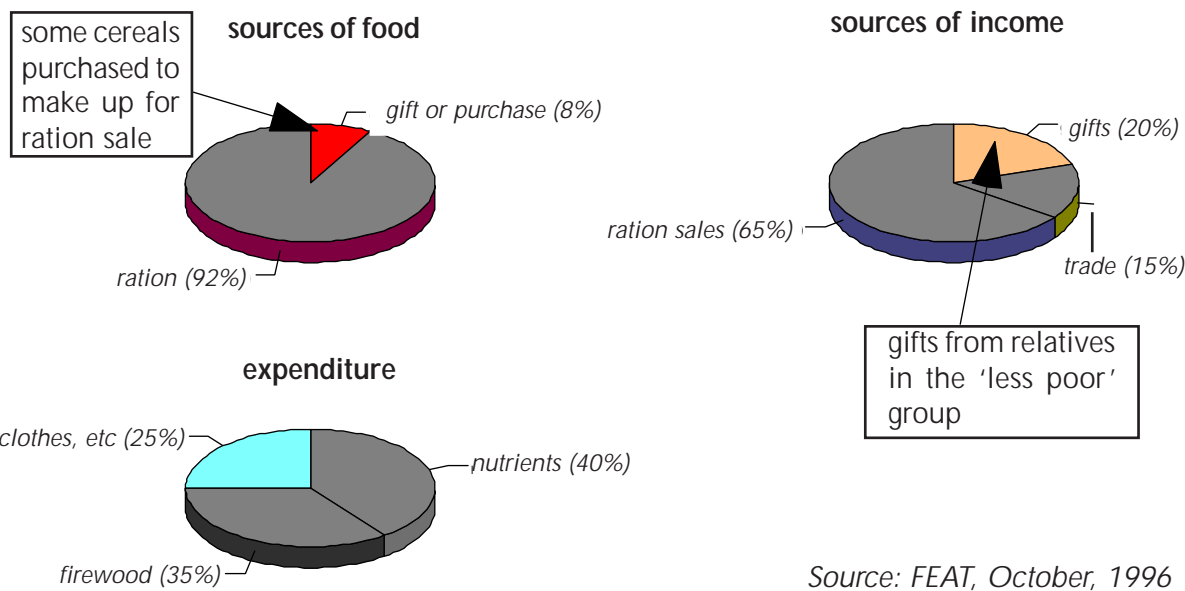


Figure 8

How 'poor' families live in Kakuma refugee camp: October 1996



is also reduced slightly, from 8% in the baseline to 7%. This is a figure arising from, on the one hand, a reduction in gifts, and on the other, an increase in purchase.

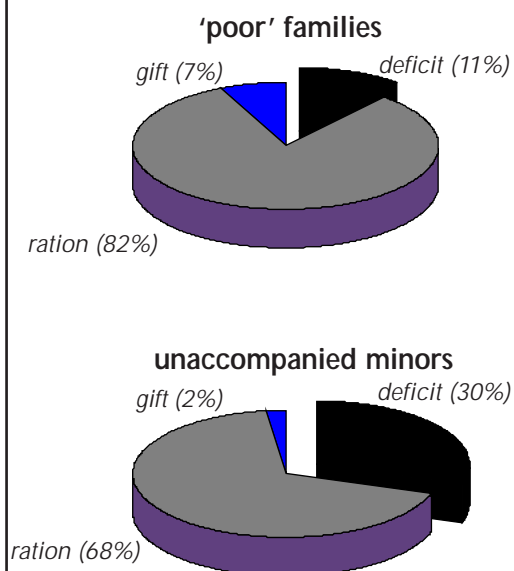
If the ration is cut, then the incentive-earning 'middle' group must spend a larger proportion of their income on purchasing cereals; this has knock-on effects on gift giving. But while the gifts received by the 'poor' group decrease, their income from ration sales increases (as food prices increase), and

total income increases. They can cut expenditure on 'nutrients' and purchase a small amount of cereal.

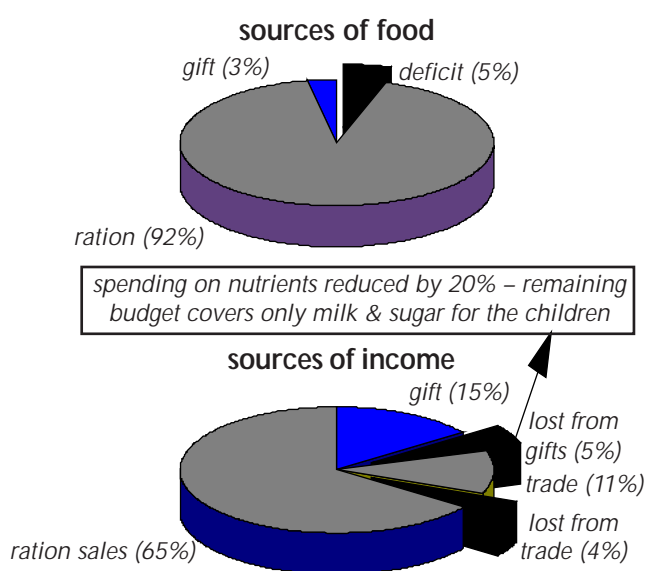
It was estimated that a 10% cut in the ration would have the worst effect on the 'unaccompanied minors' group: even at the time of the assessment, they were found to receive an inadequate ration (for their calorie requirements); they are relatively unsupported in the camp, receiving only 2% of food income from gifts.

Figure 9

The effects of a 10% ration cut on two groups in Kakuma



The effects of a 25% reduction in incentives on 'poor' families



Source: FEAT, May, 1997

In conclusion, the food economy assessment team counselled against both a reduction in the number of people receiving incentives and a cut in rations, cautioning that both would have serious effects on the poorest two segments of the population. As a result, neither a ration cut nor incentive change was implemented.

The strength of the food economy analysis in this case was that it clarified the connection between incentives and the overall well-being of not just direct recipients, but even those who did not have primary access to employment. But using this approach in refugee settings is not easy. Reliable key informants are few and far between, and the very nature of a camp setting subverts the rapport which one hopes to develop during an interview.

From a technical standpoint, the 'key informant' approach, which is fundamental to much of the rural interviews, has to be employed with particular skill in a refugee setting. Confidence in key informants during rural interviews stems from the basis that most villagers have a good understanding of how they and their neighbours make ends meet. Outsiders, such as traders and agricultural officers, add to villagers' views helping to build a consistent picture; this picture is cross-checked against official production figures, prices and a number of other sources.

In a refugee camp, however, the assumption that particular individuals understand how other refugees live is questionable. In addition, many of the strategies used by refugees to meet basic needs defy camp rules, and few are willing to disclose them openly. This requires that analysts be even more circumspect than usual.

3.3 Determining who is most vulnerable to food insecurity: Rwanda

In Rwanda, SCF-UK's food economy team has recently been invited to join, along with FEWS and the EU, a unit within the Ministry of Agriculture. A fundamental component of the food economy work will involve the training of ministry personnel to construct baseline pictures. FEWS and the EU will be responsible for monitoring the indicators that emerge from these baselines, while analysis of how changes in these indicators might affect rural households will be conducted as a collaborative process among all the agencies.

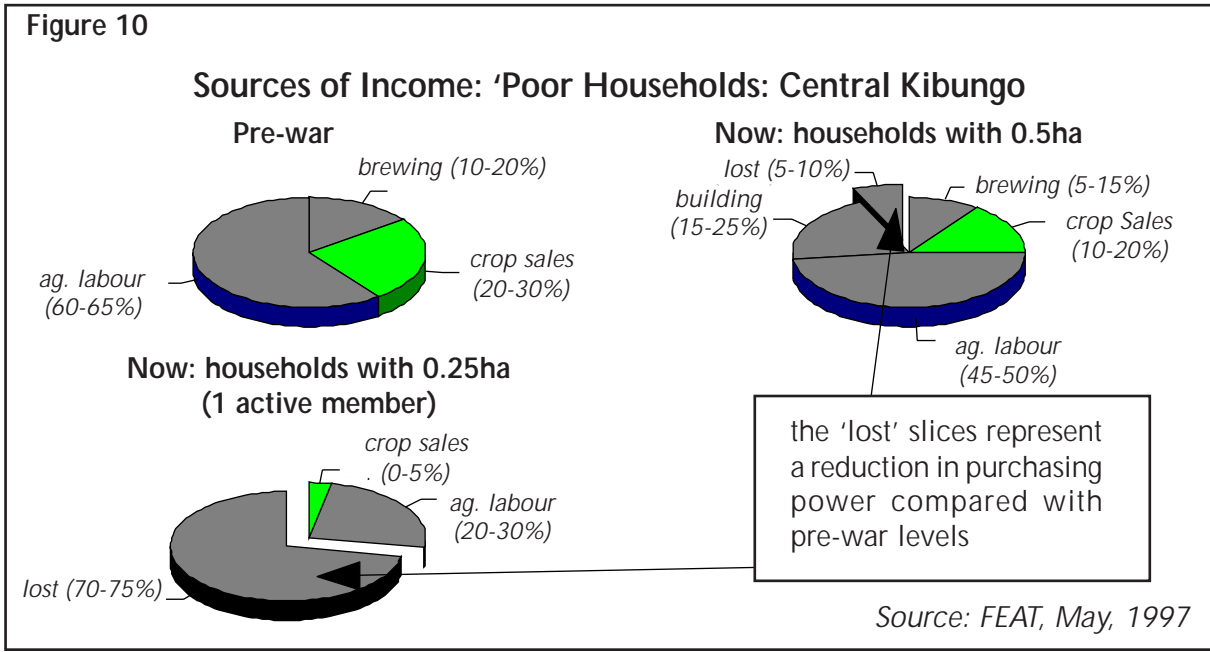
More traditional assessment methods have been conducted in the past, without satisfactory results.

The particular strength of the food economy approach is related to the fact that the fundamental problem in Rwanda is not due to a failure in crop production, but rather to a complete collapse of the former economy. Only by talking to rural people themselves, about how they were living, can an understanding be obtained of the changes that have occurred. A picture has begun to emerge of how families were living before the genocide; this serves as a reference point for changes that have occurred subsequently. The following example illustrates how the food economy approach has been used in Kibungo to understand the economic impact of the war:

Income has been affected by changes in crop production and in employment opportunities. Income from crop production (and brewing) will be lower than pre-war due to reduced yields (FAO estimate yields for the 1997 season to be 90% of 'normal') and, for those households sharing land, the smaller area cultivated. There has also been loss of income from crop sales because the price of sweet potatoes and cassava has lagged behind the general inflation rate.

The 'poor' are currently able to find as much agricultural labour as before the war. Although 'middle' families reported that they are not employing as many people as before and there are more families relying on wage labour, the number of people looking for work has decreased because migrant labour has ceased. The result is that, unlike other areas studied in Rwanda, the agricultural labour rate in Kibungo has roughly kept pace with inflation, due probably to an overall labour shortage...." The implications of these changes for 'poor' households are expressed in Figure 10 opposite, as a percentage of income lost due to a decline in overall purchasing power.

The next 6 months will be a transitional period, as households currently sharing land begin to be resettled. Careful monitoring of the situation is recommended since it is not at present clear how the process of resettlement will affect food security. What access will families have to their own crop production as they are being resettled? Will they be able to harvest crops from the fields they are cultivating now and carry food stocks with them? And how long will it take them to establish their new farms and achieve food self-sufficiency? What impact will resettlement have on local labour opportunities and, in particular, how will resettlement affect...families with inadequate manpower such as widows with many young children?¹⁴



Without the pre-war context, information about declining income activities today would have little meaning. Food economy analysis has raised a number of important questions in Rwanda, helping to direct future information gathering efforts. The multi-agency unit in Rwanda is of critical importance because so little is currently known

about the effects of the war on the economy, and yet this knowledge is a prerequisite for appropriate rehabilitation and development planning. With the groundwork for collaborative planning and analysis in place, there is an exciting opportunity to debate, learn and ultimately make better decisions for Rwanda's rural economy.

4

Where do we go from here?

Food economy practitioners readily admit that verification, beyond the numerous field interviews conducted to construct the initial baseline and reference to existing secondary resources, is one of the weaker areas of their work. At the same time, however, field verification is an area in which few, if any, methodologies have shown success, making it difficult to learn from the experience of others. Some verification work has occurred with the Risk Map programme, comparing its predictions to what actually happened. The problem with testing in general in an uncontrolled environment is, of course, that so many factors may affect the outcome, you cannot control just those you want to track. While the initial results of testing were encouraging, it is difficult to draw conclusions on this basis. Clearly, more work has to be done in this area, with new methods

developed for testing food economy baseline information and scenario analysis. There are unlikely to be quick solutions to this challenge: information from food economy field-work can only be confirmed (or disputed) through more detailed fieldwork, which takes time, money and personnel. Combining resources with larger food security monitoring agencies, who have a common interest in high quality baseline information, is the most logical means for pursuing this testing. Such agencies could include CARE, who have been working on food systems for a number of years, WFP and their Vulnerability Assessment Mapping with the Famine Early Warning System (FEWS) as well as NGOs such as OXFAM and CONCERN who have been conducting rural food security surveys for some time.

Endnotes

- ¹ Differences in wealth are often expressed in more than three groups. As a result of field work, populations are typically broken up into four, five, or even six different wealth groups. 'Poor', 'medium', and 'rich' are used here for purposes of illustration.
- ² Such problems are less acute where the FEZ boundary overlaps with those of smaller administrative areas (sub-districts, for example), so that even if the FEZ crosses a district or regional boundary, it can still be seen in terms of its component sub-districts.
- ³ See section 2.2.9 on gathering information – page 16.
- ⁴ Editor's note: a persistent critique of the approach is that the concept of a 'normal' year has no real meaning in many environments, particularly where conflict is an important feature. As can be seen from this paper, food economy analysts appreciate that there are difficulties with the concept of 'normality' and are now sometimes referring to baseline years, with no implication that this is in any way 'normal'. Despite this, there are still concerns about the approach: a potential consequence of downplaying the significance of 'normality' is that baselines will probably need to be re-established or verified more frequently, and this will inevitably have implications for the amount of resources needed to 'maintain' the FE framework in any one situation. Where resources are scarce, this may lead to greater competition between 'official' information gathering systems and those used as part of the FEA. In addition, moving away from a concept of 'normality' increases the difficulties in determining food aid needs. The fundamental assumption of the food economy approach that, in normal years, most people survive, becomes less useful, for one is no longer comparing a current situation with a normal year. Thus if the analysis reveals that the situation is no worse than in the baseline year, one would be unable to determine whether food aid levels should rise, fall or remain the same without being confident that one knew whether they were adequate in the baseline year.
- ⁵ For the most part, food economy analysis is concerned with the active economic community – individuals who have splintered off from families and rely solely on public welfare or criminal activities are not considered in the initial analysis. Similarly the richest 5% of any population are left out.
- ⁶ For the purposes of food economy work, 1900 kcal/person/day is used as a mean, assuming a normal age distribution within the family.
- ⁷ The calorific value of most grains is c.350 kcal/100 g. Assuming that, in a cereal-based diet, most calories come from grain, a family of six must be consuming around 3 kg of grain a day (1900x6/3.5/1000), or one 90 kg sack a month.
- ⁸ Example taken from 'Summary of the Food Economy Workshop, Hargeisa, 4-9 October 1997'
- ⁹ This list is not exhaustive, and provides a few examples for illustrative purposes. The 'levels' underlined refer to the most common (though not exclusive) level at which this information is found.
- ¹⁰ In this case 'very poor' households were those with land holdings of around 1 ½ acres.
- ¹¹ For a full report of the food economy of Akot and the effects of the October 1994 raid please contact the WFP Food Economy Analysis Unit in Operation Lifeline Sudan, Gigiri, Nairobi, Kenya.
- ¹² Families in one village are connected through family ties to neighbouring villages, and ownership claims to cattle in one herd are held by households in a number of different villages. The impact of the raid would, therefore, have been shared by neighbouring villages, and not have fallen solely onto the village attacked.
- ¹³ Based on the assumption that 20% of the herd's cattle would be milking at any one time and milk yields of 1.5 litres per cow.
- ¹⁴ FEAT, Central Kibungo, Rwanda, Household Food Economy Analysis, July-Dec 1997.

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- FOR FURTHER READING:**
- FEAT Food Economy Reports** (Documents available through SCF-UK Food Economy Assessment Team, Regional Office for Eastern Africa, P.O. Box 39664, Nairobi, Kenya)
- Refugee camps**
- Kakuma, Kenya, October 1996 and 1997: Dadaab, Kenya, 1996 and 1997: Kebri Beyah/Rabasso, Ethiopia, December 1996: Southern Sudanese in Northern Uganda, April, 1997: Eritrean and Ethiopian refugees, Eastern Sudan, April 1997
- Rural Assessments**
- Rwanda: Byumba, February 1997: Kibungo, May 1997: Gokongoro/Butare, May 1997
- Kenya: Wajir, June 1997: Lower Kitui, July 1997:
- Tanzania: Mtwara and Lindi, October 1997
- Ethiopia: Tekeze Lowlands, July 1997: Dega North Wollo, July 1997

RRN

Background

The Relief and Rehabilitation Network was conceived in 1993 and launched in 1994 as a mechanism for professional information exchange in the expanding field of humanitarian aid. The need for such a mechanism was identified in the course of research undertaken by the Overseas Development Institute (ODI) on the changing role of NGOs in relief and rehabilitation operations, and was developed in consultation with other Networks operated within ODI. Since April 1994, the RRN has produced publications in three different formats, in French and English: Good Practice Reviews, Network Papers and Newsletters. The RRN is now in its second three-year phase (1996-1999), supported by four new donors – DANIDA, SIDA (Sweden), the Department of Foreign Affairs (Ireland), and the Department for International Development (UK). Over the three year phase, the RRN will seek to expand its reach and relevance amongst humanitarian agency personnel and to further promote good practice.

Objective

To improve aid policy and practice as it is applied in complex political emergencies.

Purpose

To contribute to individual and institutional learning by encouraging the exchange and dissemination of information relevant to the professional development of those engaged in the provision of humanitarian assistance.

Activities

To commission, publish and disseminate analysis and reflection on issues of good practice in policy and programming in humanitarian operations, primarily in the form of written publications, in both French and English.

Target audience

Individuals and organisations actively engaged in the provision of humanitarian assistance at national and international, field-based and head office level in the 'North' and 'South'.

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Ministry of Foreign Affairs
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