FEWS NET

Report on a Food Economy Training & Baseline Vulnerability Assessment
Af'abet Sub-region, Eritrea

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Task Order #1

Famine Early Warning System Network

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A FOOD ECONOMY TRAINING & BASELINE VULNERABILITY ASSESSMENT IN AF'ABET SUB-REGION, ERITREA, 9-24 FEBRUARY 2001

1. INTRODUCTION

1.1 Aims and means

This is the report of a dual initiative by FEWS-NET: to promote local vulnerability assessments and to provide local capacity building. Af'abet sub-zoba (a sub-region of North Red Sea zoba or region) was chosen for the first such exercise, carried out in association with the Eritrean Relief and Refugee Commission (ERREC). A consultant from The Food Economy Group was engaged for one month. Given the time-limit set, some balance had to be struck between the objectives of training and of maximising the quality of the field information; it was agreed that the emphasis should be on training.

In line with the overall government push for decentralisation, the intention is to achieve an improvement in local government's ability to understand and monitor food security. Local planning and investment priorities can be better determined where a baseline assessment offers new analysis of food security within a newly described economic context. For emergency assessment, a practical system for local-level monitoring should offer more regular and convincing information than has to date been available. This may not always obviate the need for mounting special assessments, but these would now be strongly underpinned by previous field information and by skilled local staff.

The heart of the matter is the capacity of the local administration and associated line ministry offices to put together the 'story' of local livelihoods, so that the most cogent arguments can be advanced for action. The information would also be expected to feed into the National Food Information System and the annual national assessment of emergency requirements, the most recent of which was led by the World Food Programme (WFP) in association with ERREC in November 2000.

The consultant arrived in Asmara on February 5. Together with the FEWS-NET country representative he spent two days in Asmara on briefing, including meetings with the head of ERREC and with the USAID programme officer chiefly concerned with food security. The consultant and the FEWS-NET representative travelled to Af'abet on February 8, pausing at Keren for a discussion with officers of the WFP sub-office. After briefings with the governor and ERREC representative at Af'abet, desk and fieldwork training was carried out between from February 9 to 24. A debriefing session was held with the governor prior to departure to Asmara. From February 26 onward preliminary analysis was made of the field results in preparation for a presentation made by the consultant on March 2 on both the food economy approach and the local information obtained. This was held at the Ministry of Agriculture, and attended by the head of ERREC and the deputy head of the Grain Board, as well as by MOA officers. The consultant departed for home on March 4.

1.2 Local level training – constraint and opportunity

Capacity building is a constant theme of the government and is also a foundation block of the overall work of FEWS-NET in Africa. One problem is the tendency for the 'Matthew Principle' to operate, in that those who already have a comparatively high standard of formal education receive further formal training, whilst their less educated colleagues attend workshops which are informal (and sometimes thin) in content. This is perhaps inevitable when a certain level of technical and linguistic proficiency is required for formal courses.

But there are at least two good reasons why things should be handled differently in the present instance. Decentralisation brings new responsibilities to sub-regional government officers, whether in local administration or in the local line ministry departments. But they have usually not gone far in higher education, having at most a technical qualification from two years' training beyond school matriculation, as was the case of all the participants in the present training. Yet it is they who must be the mainstay of such activities as local food security assessment and monitoring if these are to have any permanence.

The second, not dissimilar, reason is that two decades of warfare have created a generation of male and female ex-fighters whose formal education stopped relatively early (and who found themselves holding literacy classes for fellow-fighters without any education at all). On the other hand, they have spent many years in rural areas, with unusual opportunities to observe rural livelihoods and their constraints. Such people, now in middle age, are often officers of government, including senior posts in local administration. Given that many would be ineligible for formal courses, it would be wasteful indeed if other available investment in capacity building were to exclude people of maturity and experience who are in a position to promote the kind of work introduced in this exercise.

The conclusion must be that for local capacity building, account should be taken of the educational level of candidates not in order simply to reduce the level of expected performance, but rather to devise means to overcome linguistic and technical obstacles and aim as high as possible. The present exercise was undertaken in that spirit.

1.3 The subject matter: livestock, grain and vulnerability

The environment of Af'abet sub-zoba seems primarily suited to traditional pastoralism. By this is meant a system where economic activity is centred upon rearing livestock; where the types of livestock are well adapted to the local ecology; and where human residence is adapted to movement dictated by the seasonal geography of pastures and water sources. In terms of the land 'carrying capacity' there must be a balance between the density of the human population and the numbers of animals which families need to maintain.

Other than in exceptional drought years, success in traditional pastoralism means being able to consume appreciable quantities of milk throughout the year, even though milk yields reduce considerably in dry seasons. To this end, traditional husbandry emphasises keeping a high ratio of female to male animals, whilst aiming at large enough animal holdings to allow sufficient milk volumes and to take account of high mortality when drought strikes (or epidemic livestock disease), meaning that enough stock survives for continued pastoral existence and a rapid regeneration of the flocks and herds.

In modern times it is difficult to find pastoral groups who survive essentially on milk and meat: grain purchased in the market generally accounts for at least 50% of annual calorie intake, and often much more. This is a function of a number of factors. Pastoralists have increasingly become wedded to the cash economy, through which animals can be easily exchanged for grain.[1] Grain has also been brought nearer by

[1] 'It is more likely that a cash market for meat exists than for milk and blood. Thus for pastoral people involved in a cash economy, meat resources can to a large extent be converted into local agricultural produce, edible import items or non-food products.' Gudrun Dahl & Anders

the encroachment of cultivation on traditional pasture-lands. Pressure on pastureland has increased as pastoral populations themselves have increased naturally, albeit usually at a lower rate than their agricultural neighbours. But there is a limit to the 'carrying capacity' of the land, and the average numbers of animals maintained per capita has declined. Short-term droughts have reinforced this reduction, and in some areas so has long-term environmental deterioration, i.e. the permanent loss of useful vegetative cover, perhaps more through fuel-wood cutting for sale than through poorly managed grazing. As a result, there is growing pressure for pastoralists to maximise the food-calorie value of livestock, and the way to do this is to exchange animals for grain.[1]

There seems no reason *a priori* why an increased dependence on purchased grain should be incompatible with continued pastoralism. But it is another matter for pastoralists to become increasingly dependent on their *own* grain production, i.e. to become agro-pastoralists. In a zone like Af'abet sub-zoba, given the low average rainfall as well as the wide inter-annual fluctuations in precipitation and length of season, rainfed agriculture is by definition a high-risk venture. Indeed, one might think that in such an area 'drought' ought to be defined by exceptional stress upon livestock rather than by crop failure.

Nevertheless, as we shall see, agriculture has become part of the livelihood of the majority of people in the zone, and there must be good reasons for this. Why do pastoralists become agro-pastoralists? Is it because they have no choice: because their flocks and herds have declined so far that they must increasingly find another way to produce food or wealth? Or is it, rather, a positive choice: a calculation that, taking good years with bad years, they can absolutely increase their wealth by some investment of labour in cultivation? Or is it another kind of choice, answering a growing preference for a more settled mode of life?[2]

Such considerations form the background to the principal subject of the present exercise, which is vulnerability to hunger. First there is the problem of short-term food insecurity – of vulnerability to acute events: how do the people of Af'abet sub-zoba respond to the economic stress caused by drought (or by the indirect effects of recent warfare) and who amongst them is threatened by extra-ordinary hunger if food aid is not made available? Secondly, there are longer-term economic questions: what factors should guide aid investment to secure and increase family incomes, and thus permanently diminish food insecurity?

Hjort, Having Herds – pastoral herd growth and household economy. (page 142) Stockholm Studies in Social Anthropology, No. 2, 1976.

[1] This is not a new phenomenon in northern Eritrea. One account of the Beni 'Amer (a western section of the Tigre-speaking clans which comprise the great majority of the people of Af'abet sub-zoba) uses information dating from 1901 to approximately 1950. Describing the people as 'almost exclusively pastoral', it goes on to say: 'The staple foods of the Beni Amer are milk and *durra* (Sorghum vulgare) supplemented occasionally by a little meat; milk and meat are exchanged with the Marye for grain.' The Central Ethiopians: Amhara, Tigrinya and related peoples. William Shack, Ethnographic Survey of Africa: North-Eastern Africa, Part IV, International African Institute London, 1974

[2] Cf. the anthropologist P.T.W.Baxter commenting on the sense of pleasure and satisfaction felt by nomads in movements to fresh pastures: '…I would suggest that nevertheless, if a sedentary life could be achieved without detriment to their stock, then most pastoralists would settle cheerfully, even eagerly.' *Some consequences of sedentarization for social relationships.* In: Pastoralism in Tropical Africa, ed.Théodore Monod, International African Institute/Oxford, 1975

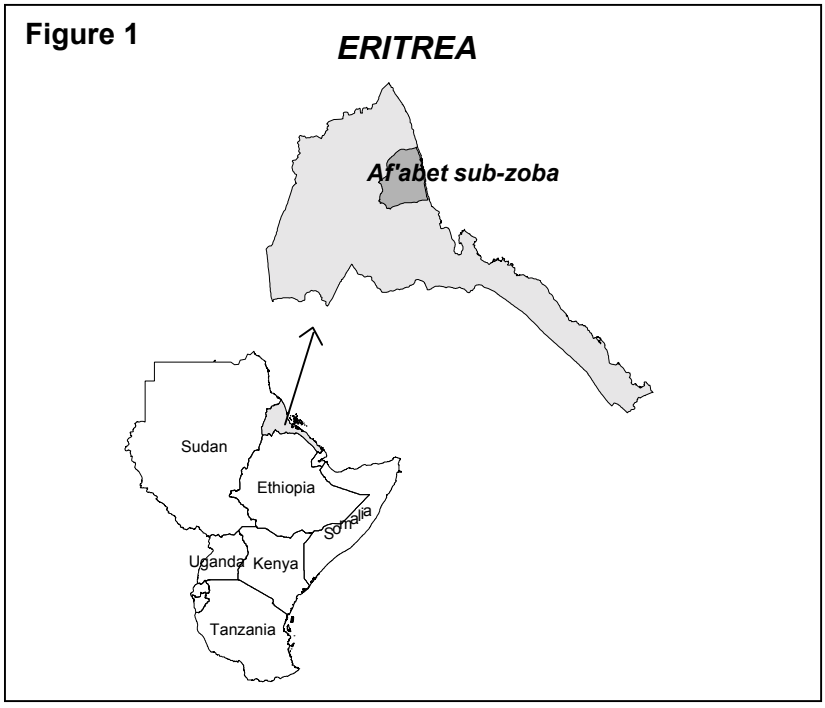
A baseline food economy assessment is a first step towards answering these questions, giving essential information on how households with different wealth attributes operate. The full answers, however, cannot be attained in a two-to-three week exercise. Short-term food insecurity should be the subject of seasonal monitoring activities, which can continue to use the baseline analysis as a template on which to fit new information. Likewise, the baseline should form a reference point for determining how a given intervention or project might be expected benefit households as operating economic units. But the information will need to be extended and updated.

3. THE SETTING

2.1 A sahelian ecology

Af'abet sub-zoba is situated at the far north-eastern end of the Ethiopian/Eritrean high massif. Taking the original Arabic meaning of *sahel* as an 'edge' or 'border', the sub-zoba is sahelian in three senses. At a general geographical level, it is part of northern Eritrea which borders the Sahara Desert. Secondly and more specifically it borders the Red Sea to the east, and contains a length of the desert strip which

Figure 1



characterises the entire coast of Eritrea. Thirdly, from a different perspective, Af'abet sub-zoba lies on the very edge of the high massif, descending west to east from foothills at some 600-1000 metres elevation to the intermediate lowland at 200+ metres, and thence to the coastal plain. The vegetative cover changes from mainly bush on the stony uplands to a mixture of bush and grassland in the lower elevations.

From Sudan westwards to the Atlantic coast, the *sahel* is commonly seen as a transitional area between desert and savannah; annual rainfall supports only pastures in the north, whilst towards the south first millet and then sorghum and maize become cultivable. But in northern Eritrea – as is typical of the Great Rift Valley in Africa - altitude as much as latitude determines the average annual volume of rainfall. For this reason, in Af'abet sub-zoba we would expect greater precipitation in the west than in the east, regardless of the fact that this is also the divide between summer rains (west) and winter rains (east). But we have few rainfall records, and

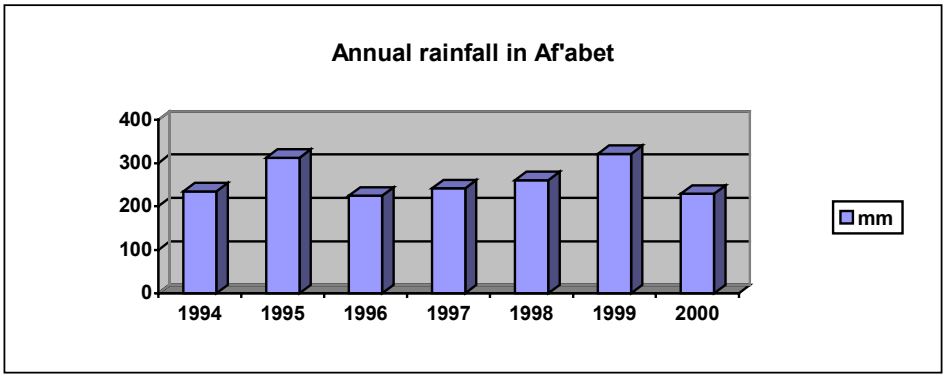
certainly not enough to reflect properly the altitude pattern. The only rainfall figures we have found for locations beyond Af'abet town are for the year 2000, reportedly a year of drought:

Af'abet town:	*228.6mm*
Naro (Kamchew):	*95.4*
Kubkub:	*216.0*
Qelhamet:	*170.0*
Felket:	*97.0*

(Source: the Af'abet sub-zoba office of the Ministry of Agriculture)

These are all stations in the western part of the sub-zoba, and the message here is in fact a typically *sahelian* one, namely that in the very same season precipitation can vary greatly between locations only a few kilometres apart. On the face of it, in 2000 only two of these locations had any chance of producing a rain-fed cereal crop.

Aggregated annual rainfall figures can be deceptive, since in such semi-arid regions the distribution of rainfall over the season is a critical factor, especially for crop production. Here is the recent annual precipitation series for Af'abet town (i.e. summer rains):



Source: the Af'abet sub-zoba office of the Ministry of Agriculture

Assuming these figures are reasonably accurate, one would expect 1995 and 1999 to have been reported as by far the best years. In fact, 1995 was considered a reasonable year, whilst 1999 was poo r, one of a series of three bad years from 1998; and it was 1997 which was reported as the best year. We were told that the winter rains in the east are even less reliable than the summer rains of the west; but we have no figures by which to judge this. What is clear is that these are levels of annual rainfall right at the margin of viability even for short-cycle, 'drought resistant' crops.

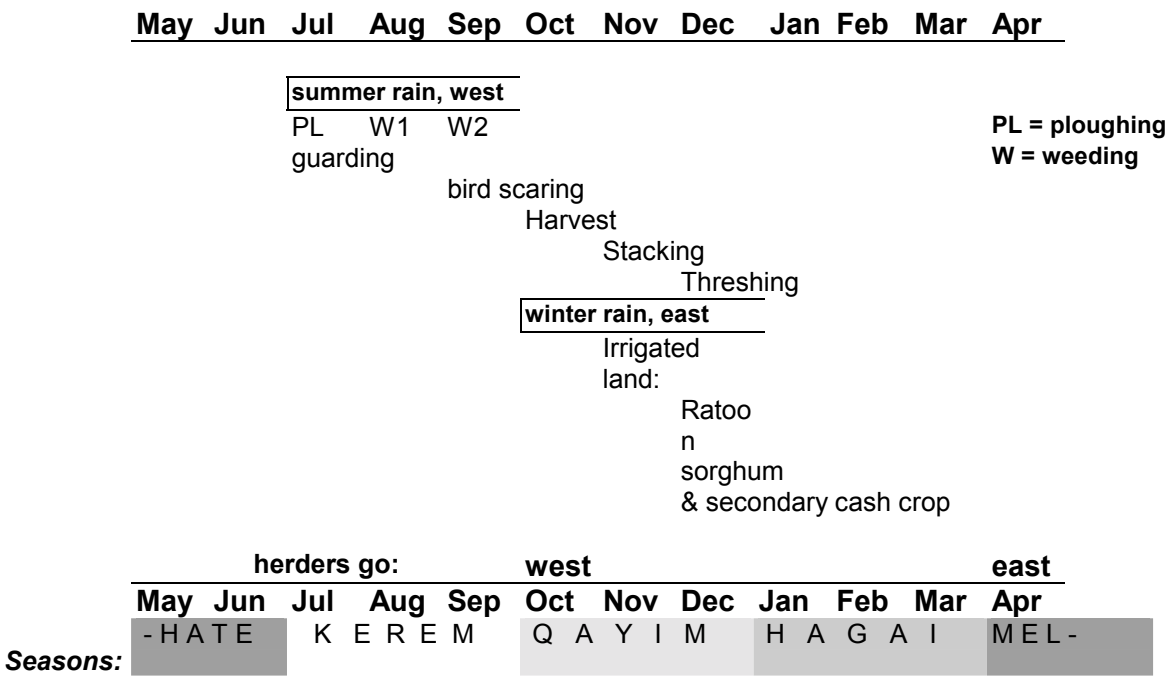
2.2 People and livelihoods

Af'abet sub-zoba is the most populous in the country outside the Asmara complex, with an official figure for the year 2000 of 102,608 people, roughly 75,000 rural and 27,500 in Af'abet town, the only settlement of any size in the sub-zoba. But this is also one of the three or four largest sub-zobas in the country in terms of surface area and is in fact rather sparsely populated, as one would expect in a heavily livestock-dependent zone. The rural population is overwhelmingly Tigre-speaking, but there is also an Arabic-speaking group, the Rashaida, who are essentially camel-pastoralists of the east and north-east and form perhaps 8% of the rural population.

As regards the livestock population (for which we have found no recent estimate of numbers), goats are in the great majority in the upper elevations in the west, together with a few sheep which may however form up to 20% of the smallstock in the most favourable locations. Smallstock are brought down to the east in large numbers at the start of the winter rains, and there they remain for up to six months to use the refreshed pastures and new browse. Thus although the western *kebabis* (sub-sub-zobas) are 'home' for most of the population, the predominant mode of life is one of yearly transumance between west and east, and of limited nomadism within each zone. Goats are the main source of milk and meat, and are also the main items of trade, especially going to central Eritrea via Keren; a smaller number go to the port–town of Mitsiwa', the regional capital, for slaughter or export. Sheep are essentially bred for slaughter and sale, and probably figure disproportionately in the export trade.

Camels are an important element of the overall economy, as carriage, draft and milking animals, but are only kept in substantial numbers in the eastern lowlands. Donkeys are more modest beasts of burden, but are of great importance for carrying water, collected firewood, crops from the field, and items to and from markets. As a general rule, better-off families will have at least one or two camels, whilst if a family does not even possess a donkey it is poor indeed.

Figure 2 ***Production Calendar***



Cattle are kept in much smaller numbers generally, and are mainly associated with agriculture, which creates a need for plough-oxen. This has not been a purely pastoralist population for several generations, and we were told by local informants that in particular since the end of the 1960s, during a period which has seen droughts of exceptional length and severity, and repeated loss of livestock, there has been a marked expansion in agriculture. But we should not exaggerate this phenomenon: if today at least 80% of households practice some amount of agriculture, few are *primarily* dependent on crop production and nearly all still count their wealth in

livestock. Exceptions to this are to be found amongst the minority who are more or less settled into cultivating land under irrigation.

The main cultivation is rainfed: in the western, higher elevations with the summer rains – the *kerem* season, approximately from July to September; and in the lower-lying eastern areas with the winter rains – the *qayim* season, approximately from October to early December (see Figure 2, above). Pearl millet is the crop of choice in the west, and both millet and sorghum are grown in the east, with a predominance of millet in the north-east sandy-soiled plains. Maize is a minority crop throughout, much of it consumed or sold 'green'. In the limited areas of the lowlands where water-course diversions have allowed spate-irrigation, there is a heavy accent on sorghum, including a secondary ratoon yield; and when moisture conditions allow, there is a second, cash crop, mainly groundnuts but also sesame.

We have found no data on the hectarage of either type of cultivation; but a very rough estimate, or guesstimate, from the agricultural office at Af'abet suggests 8000 hectares under rainfed cultivation in the west (summer rains), 4000-5000 hectares under rainfed cultivation in the east (winter rains) and 4000 hectares under spate-irrigation. If each irrigated hectare is operated by an average family of 6 people, this would imply that about one-third of the rural population is involved. Our own guess would be that the actual number of people involved was perhaps half of that.

In a year of reasonably favourable rains, irrigated land will yield upwards of 20 quintals of sorghum per hectare, whilst rainfed millet or sorghum will yield some 4-5 quintals. Assuming that as much as 80% of the food energy requirements of the population are sought from grain, with the MOA-estimated hectarages we can calculate that in a good year, taking into account wastage and seed offtake at 15%, enough grain would be produced to provide about 75% of that energy requirement (at the average of 2100 kilo-calories per head per day). But in bad years rain-fed grain production may easily fall by three quarters or fail completely. In other words, Af'abet sub-zoba is far from self-sufficient in grain. In addition, some grain is traded out from the irrigated area to Mitsiwa', attracted by the prices obtained there.

Apart from the production and trade of livestock and grain, there is no other economic activity on any scale, whether commercial plantations, mining or processing (beyond small grain mills in most *kebabi* centres). A few people practice fishing off the coast; and no doubt there is a certain amount of trade by camel of informally imported items.

2.3 Food insecurity and food aid

The name of Af'abet became famous from 1987 as the location (some kilometres north of the town) where rebel forces won a battle over the Ethiopian army which is usually considered to have marked the beginning of the final defeat of the Derg. Warfare and civil insecurity have economic consequences upon pastoral people as upon farmers, whether in limiting their seasonal movement with animals, or through theft of livestock by occupying armies, or because young adults leave their herding work to join the fighting forces. This last effect has recently been felt again in relation to the recent warfare with Ethiopia, although the battle fronts were far from Af'abet.

But notwithstanding such a political history, it is drought which has been the greatest economic scourge during the last thirty years, with two particularly disastrous episodes: at the beginning of the 1970s and between 1983 and 1985. The next decade then began badly, with a rain failure in 1990 apparently more severe than any seen since; and it also ended badly with three poor rainfall years in a row: 1998-

2000. There is now a saying amongst Af'abet people: "We think each year is the worst – until we see the next year!"

But in truth there are also favourable periods in which livestock numbers increase and good harvests are reaped. Older people told us that by the late1960s a series of good years had resulted in animal wealth greater than any they had known for many years before, and greater than any that was to follow. This made the livestock losses of the next few years particularly high in number. But the later 1970s saw a general recovery until the next shock, and a similar pattern holds for the next two decades. For instance, after the1990 failure the rains improved to the extent that 1993 is now considered the best year of the decade, whilst 1997 represents the most recent good year. Clearly, without substantial recovery of livestock holdings after droughts during three decades we would not see today an economy still primarily based on pastoralism.

Droughts come periodically, if not in any proven 'cycle'; but other phenomena may increase progressively over the years – those which diminish food security as well as those which increase it. Human population numbers have mercifully not fluctuated in anything like the way animal numbers have: unusual hardship may have increased mortality rates, but there have not been killer famines or disease epidemics which would halt or reverse the trend of population growth. But as hinted above, a growth in the number of people depending directly on the land means that increasing numbers of people are at the very margin of sufficient access to food. Any production failure now threatens to push more and more people over the threshold of hunger.

On the other hand, people are not simply enclosed economically within their locality. Both the commodities market and the employment market allow some economic outreach and some potential for earnings which increase food security. Two items in particular will seize our attention: trends in the price of livestock which are determined by a market far wider than the local demand; and the availability of seasonal employment beyond the sub-zoba.

A third element must also be taken into account, and that is official food aid. We do not have any record of yearly distributions over the decades of drought and warfare, but we do know that in the decade since the defeat of the Ethiopian Derg there has been food aid in Eritrea in most years, with a hiatus in 1996/97. Af'abet sub-zoba has been an important target of this relief. Between August and November 2000, excluding aid going to displaced people encamped since June on the outskirts of Af'abet town, WFP records that there were 46,220 beneficiaries, which means 45% of the resident sub-zoba population (and 43% of all beneficiaries in the North Sea Region). The volume distributed is put at 3166 tonnes, which would mean on average 68kg per person, or 32% of people's annual food-energy requirement. In the present survey, however, food aid was found to have provided between 20 and 23 per cent of the recipient poor and middle households' energy-food intake in 2000. But this is not means the mismatch it seems at first. For we were repeatedly told that there is always a certain amount of distribution beyond the households officially targeted – i.e. available rations are stretched amongst a greater number of people, so that although the poorer were prioritised, they did not overall obtain a third of their basic food needs from food aid. The principle expressed to us was that in bad years the poor receive charity from people who are better-off but who also suffer from the prevailing conditions; therefore when help later comes from elsewhere in the form of official food aid, a certain amount of redistribution within the community is expected.

3. THE TRAINING

3.1 The aim and the participants

The principal aim was to help build a capacity at sub-zoba level for food security monitoring. At present there is no formal set-up for using local government officers for this activity, nor any methods officially established with which they could operate. Therefore the present exercise was designed to provide a first local training and to establish a first baseline vulnerability analysis on which to base future monitoring procedures. Trainees would be expected to form the future team for periodic monitoring exercises.

There is an intention on the part of ERREC Asmara to upgrade its monitoring capacity in the country generally; both the Af'abet sub-zoba governor and the Af'abet ERREC representative had expressed their wish for greater local strength in determining food security problems from season to season. There is reason to believe that these sentiments are echoed in other sub-zobas where populations have suffered food insecurity.

The Eritrea FEWS-NET representative therefore seized the opportunity provided by the funding to set up a first training exercise, with an initial plan to undertake two further exercises in contrasting areas during the year. It is indicative of official interest that the head of ERREC travelled to Af'abet with the FEWS-NET representative in order to discuss arrangements with the sub-zoba governor. He also detailed two of his officers in the Asmara office to take part in the training. In turn, the governor of Af'abet proved his interest by identifying, with the sub-zoba ERREC representative, those local government officers who would be suitable candidates for training and pressing for their release from their normal duties for a full two weeks for this purpose. In other words, the exercise began not simply with official blessing but with official promotion.

In the event, the people from local government and local services who participated were:

- the ERREC sub-zoba representative;
- a member of the department of animal resources at the sub-zoba Ministry of Agriculture office;
- a Health Assistant at Af'abet town under the Ministry of Health;
- two teachers under the Ministry of Education;
- two women associated with adult literacy under the Ministry of Education and the Af'abet branch of the National Union of Eritrean Women. One of these women had to leave the exercise halfway through for domestic reasons. But a third woman with no official affiliation was present full-time, albeit she had a lower level of education than the other local trainees.

In addition, a national officer from the WFP sub-office at Keren joined the training; and the Kentiba of Af'abet, a town dignitary and local farmer, participated as a trainee throughout. The governor of Af'abet accompanied the field survey for one day. In all, including those from Asmara and Keren, there were eleven people under training, if we include the FEWS-NET representative who also consented to act as part-organiser, full-time translator for the consultant, and part-analyst of the results. It should also be mentioned that the local ERREC representative, whilst a wholehearted trainee, also acted as a key informant on the basis of his profound local knowledge, and was crucial in planning and organising the field work, notably as the main contact with the sub-sub-zoba administrators.

Aside from the consultant himself, the four participants from Asmara and Keren had some limited experience of the food economy approach, albeit adapted to the rapidity of the WFP/ERREC 2000-2001 national Annual Needs Assessment carried out in October/November 2000. However, they very much considered themselves as new trainees on the present exercise.

3.2 The challenge

The fieldwork side of the food economy approach lays much emphasis on two things: 1. a firm grasp of the reason for the questioning and of the overall shape of the picture sought, and 2. a constant attempt to make sense of the information as it is given, and to counteract biases, especially in this case the natural bias of interviewees to maximise the case for more food aid.

It is therefore not a matter of routine administering of a questionnaire, from which the data will be extracted and analysed only at the end, perhaps by another party. The information which reaches the final analysis stage should already have been in some degree analysed in the process of interviewing, so that if it does not 'add up' further questions can be asked on the spot.

A food economy training must therefore begin with a substantial statement about the concept of food security and the position of food as a central part of people's livelihoods and of the operations of the household as an economic unit. Having defined food security and discussed the ways in which people may be at risk of hunger, it is then necessary to establish a basic understanding of how it is proposed to measure food security – how the 'adding up' is done.

In the present case, it was clear from the outset that the training would present a particular challenge, given the educational level of the core trainees, their probable lack of confidence with concepts and their certain lack of knowledge and experience in the field of food security. On the other hand, the methodology is not of itself complex or demanding of technical skills which require a course in themselves. This appeared to be a challenge worth facing.

3.3 The shape of the training

In this exercise it was necessary to balance particularly carefully the two elements of learning by listening and learning by doing. Given the limited command of English of all the local trainees, the training had to be given from beginning to end in Tigrinya, which meant translation of the speech of the consultant. This tended to double the time required by classroom session. It also had two salutary effects: that of making the consultant think particularly hard about clarity and brevity in presentation; and that of inducing the trainees to fall with particular enthusiasm on classroom exercises which could be conducted between themselves directly with Tigrinya.

The shape of the training was as follows:

- Days 1 (a half day after establishing the venue and getting the trainees together) to 4 were given over to classroom training;

- days 5-7 were spent on the first fieldwork;

- day 8 was spent in the classroom recording and discussing the first results;

- days 9-10 were spent on fieldwork;

- day 11 was spent half on fieldwork, half on classwork;

- day 12 was spent on fieldwork;

- day 13 was spent on classwork and on fieldwork in Af'abet seeking final key informant information;

- day 14 was a half-day wrap up.

In sum, half of the time was spent in class and half on fieldwork. This may seem rather classroom-heavy for training in field inquiry methodology. But it was appropriate not only because of the extra time required for translation in class, but because the 'learning by doing' requires repeated interim review of what has been done if full value is to be gained from the experience.

3.4 The content of the training

The consultant prepared all the training presentation material prior to travelling to Eritrea in order to shorten the requirement to spend time in Asmara. It was already known that electricity would not be available during the daytime in Af'abet, so that 'slide' presentations would have to be in the form of hand-outs. (The presentation materials were printed out in Asmara.) At the end of the introductory days, therefore, the trainees had the materials in their hands to keep[1]. These were inevitably in English, but they were in the format of slides, i.e. with limited words and graphics rather than long texts which they would not have been able to read. In a future such exercise, it is not inevitable that the key materials should be in English: the FEWS-NET representative intends to have Tigrinya versions available. Since the teaching sessions were literally held in classrooms made available by the Adult Education section of the National Union of Eritrean Women, much use could be made of blackboards for demonstration of points of discussion.

The classroom

Core Concepts

The training began with discussion of definition of food security and vulnerability and the purpose of the field exercise. Then the crux of the examination of what the concepts mean 'on the ground' turned on appreciating that food production is not the only key element of how people get their hands on food. For primary producers here, food purchase is also cardinal, and therefore it was essential to know how people managed to buy food – what they exchanged for money: primary produce, labour, collected items (in this case firewood) etc.. The apparently simple but fundamental message which needed inculcating was that food security rests on two processes:

food production → *food consumption*
food production & **exchange** → *food consumption*

How households operate

The second part of the training aimed at getting trainees to begin to think how rural households operate their economy, seen from the central point of view of food – their food economy. A first explanation of the meaning of basic energy requirements from food was given, and basic food in this sense identified (grain, pulses, animal products, sugar). Then considerable time was spent on an exercise in putting together in proportion for typical households:

[1] The FEWS-NET representative holds also the full set of materials used for the presentation on food economy methodology and the field results held in Asmara (see section 1.1)

the sources of basic food consumed	- own production of milk/meat - own production of crops - collection of wild foods if any - gifts from relatives/neighbours - purchase from market - food aid if any
and **the sources of cash income**	- from livestock sales - from crop sales if any - from firewood or grass sales - from casual employment - from casual employment - from remittances from relatives

This was followed by a discussion of what trainees thought people needed to spend money on apart from basic food – the 'essential non-food' expenditure which might include items from stimulants to school fees. Trainees were asked to imagine the above proportions from anything they already knew, and not to worry if they were simply guessing – it was not a test. The results were varied, with perhaps half showing what appeared to be quite realistic guesses, and this was the perfect base for a further discussion of the production versus purchase. It also served to make trainees begin to realize that we knew perhaps much less than we thought about nearby rural livelihoods.

The importance of this exercise was thus twofold. Firstly, it established the relevant components of the household economy, and made trainees begin to think hard about how households actually operate. Secondly, it made trainees think from the start about the 'whole' picture in the direct sense of making things add up to a whole: the proportions were to be expressed in percentages and they had to add up to 100%. This is a core feature of the food economy methodology.

Using kilo-calories as a standard 'currency'
The next step was to introduce the concept of food value versus requirement, as a basic reference point for the fieldwork. In the case of the majority of the trainees, this was starting from scratch. It was necessary to define energy as a nutritional concept, and then to explain the kilo-calorie as the unit of measurement of that energy deriving from heat calories, the different 'energy value' of different foods, and the concept of energy requirement amongst a human population.

Considerable time was spent on a first, and later repeated, exercise in calculating the fulfilment of requirement with different amounts of different foods. The target was for trainees to become familiar with simple arithmetic on an unfamiliar subject; in particular it was important for them to be able to put such differing commodities as milk, millet and sugar together in the same framework. Thus if they were told in the field that a typical family of 6 produced three bags (300 kilos) of millet or sorghum, and had to purchase 10 more during the year, trainees should be able to work out rapidly that that was a considerable over-estimate of consumption need. Alternatively, if the grain obtained by the household was put at 500 kilos and milk at 500 litres in the year, it was necessary for trainees to be able to work out that this was far below the family energy requirement, and was either quite inaccurate or other basic foods must have filled the gap. This immediate information-checking in the field is another core feature of the food economy methodology.

The fieldwork
Before the first venture into the field a classroom session was held to discuss the nature of the fieldwork and the importance of a proper attitude on the part of the interviewer. Courtesy, respect and patience were called for, and would likely be accorded in at least equal measure by our village hosts. The main thing was to set up a dialogue in which it became clear what picture the interview was intended to construct, so that instead of administering a 500 question, routine questionnaire, the interviewer would pursue the elements in a somewhat discussive but probing way – the semi-structured interview.

The plan followed was that at the first field location, the whole group observed the consultant undertaking the introductions and interviews, and took down the data for the three wealth groups in three 'teams', so that they could separately analyse and present it later. As indicated in section 4.1 below, this was a necessary teaching procedure but very much a compromise in terms of the quality of information obtained.

In the following days, the trainees were split into three teams, one led by the consultant and two initially led by those with some previous field experience. The procedure kept to as far as possible was:

- an introductory interview with the area administrator, attended by the whole fieldwork group (about 1 hour);
- a session with representative elders to explain the survey and establish the local wealth breakdown, attended by all the group (about 1 hour);
- a request to the administrator to gather focus groups of the three wealth breakdowns, either the same day or as necessary for the next day;
- interviews with the focus groups led by separate teams, in which the main household food economy information was obtained on sources of food and cash income, and on household expenditure (2-2.5 hours).

The interim classroom days were spent in laying out on paper the data for each wealth group at each location, and then discussing outstanding points – especially whether the information 'added up', and what it suggested about household food security, and what items needed pursuing – e.g. how much milk was produced from a flock of 25 goats over the year, and at what rate a flock of 10 goats could increase in number with local husbandry techniques.

The interim classroom days were in effect a means of both controlling the quality of the information and reviewing the basic food security principles upon which the methodology was based. The final half-day wrap-up then both summarised what had been done, and what the information seemed to show, and in general terms what the content of future monitoring activities might be. Finally there was a discussion of possible policy implications regarding possible investment in the livestock and agricultural sectors.

There is no doubt that the first interim classroom review of the information was a threshold moment. The consultant decided not to simply give the trainees a prepared (hard copy) spreadsheet format, but rather asked them in groups to devise their own. This was a time-consuming process, but it concentrated the mind on just how the

data needed to be lined up so that the final values could be worked out. Finally one of the forms was chosen, with some modifications, as the common hard copy spreadsheet. (The FEWS-NET representative devised a digital spreadsheet and entered all the results for future use).

Then in the groups which had collected the field information, the trainees were asked to enter the data and work out the final values. This again concentrated the mind on the principles of calculation, whether of kilo-calories or of balancing cash income and expenditure. This was the moment when trainees more firmly grasped the whole picture of the process they had gone through and, however unconfidently, crossed the line between being simply field enumerators and being fieldworkers with understanding and some control of their inquiry and ownership of the results.

Conclusions on the training and on the way forward are offered in chapter 5.

4. THE FIELD INFORMATION

4.1 The scope of the information

This chapter is not titled ‘Results’ because the chief result looked for from the exercise was successful training. However, original field information was the important second objective. On the geographical level it was necessary to see whether a varied ecology led to substantial differences in economic activity as between groups of the population – in other words, whether the area ought to be split into separate ‘food economy zones’ in terms of altitude or in terms of pastoralists versus agro-pastoralists. The point of such a division would be to identify differences in vulnerability to different shocks, and ultimately different risks of hunger.

As indicated earlier, on a socio-economic level, the food economy approach includes analysis of different levels of wealth, since virtually all populations, even those who are very poor overall by any international comparison, contain better-off and worse-off households, and there are often marked differences of wealth within the same village. This has implications for comparative food security, including the question of food aid needs. Therefore a first field task was always to inquire into the local wealth breakdown. The bulk of the field information then derived from interviews aimed at understanding the working of the household economy typical of the identified groups, identifying the principal components and proportions of food sources, cash income and cash expenditure.

Given the lack of recorded socio-economic information on the sub-zoba, information was sought from key informants to obtain a first view of the geographical aspect. Although it was clear that most of the rural population were involved to some degree with agriculture, and were therefore to be described as ‘agro-pastoralists’, there was considerable uncertainty as to the proportion of the population who practiced no cultivation – ‘pastoralists’; but equally the consultant felt that ‘agro-pastoralism’ might cover a wide range of dependence on crop cultivation. The picture was complicated by the fact that much of the population migrates yearly between west and east, to make use of the summer and winter rains for pasture and cropping. There was no convenient, static geographical picture whereby one area contained only pastoralists, and another only agro-pastoralists. One family might cultivate a field ‘at home’ in the west and only use the eastern lowlands for grazing. Another might use both areas only for pasture. A third might use pastures in both west and east but also use a parcel of irrigated land in the east.

A preliminary breakdown of the population by sub-sub-zobas (*kebabi*) suggested that up to 25% of the population were pastoralists, 40% were agro-pastoralists practicing only rainfed cultivation, and 35% were agro-pastoralists practicing both rainfed cultivation and some amount of irrigated cultivation. It was decided to plan the fieldwork on the basis of these proportions and to adjust to new information as the survey progressed. This would permit later identification and representation of separate food economy zones if the evidence pointed that way. In addition, it was decided to look at one special, minority group: the Rashaida, an Arabic-speaking group of camel pastoralist forming perhaps 8% of the population who keep mainly to the north-eastern lowlands.

In each *kebabi* selected, separate wealth groups were interviewed. The emphasis was on the poor and middle groups, but better-off groups were also interviewed in order to gain a full picture of the economy and to gauge how far these people would have the resources to aid their neighbours under stress.

A reasonably good geographical spread was obtained, with visits to seven sites:

- Shabeyit and Gebgeb near Af'abet town,
- Kubkub and Kamchewa (Naro Anes) to the north,
- a Rashaida group at Ab-Derbabu in the far north-east,
- Felket to the south of Af'abet town,
- Gadem-Halib to the south-east, the biggest irrigated area.

In those sites, the following 19 groups (consisting normally of 4 -5 participants) were interviewed:

<u>Pastoralists</u>

Poor	4 groups (including one female-headed household group)
Middle	2
Better-off	2

<u>Agro-pastoralists practicing only rainfed cultivation</u>

Poor	2
Middle	3
Better-off	1

<u>Agro-pastoralists heavily involved in irrigated cultivation</u>

Poor	2 (including one female-headed household group)
Middle	1
Better-off	1

<u>Rashaida</u>

Middle	1

At two sites, the groups were interviewed together at the same time, a far from ideal procedure. This was the case at Felket, because it was the first field site, and with only the consultant as trainer, the first interviews had to be observed by all the trainees together. The second occasion was with the Rashaida group, where distance and time, and local preference, resulted in a general group discussion in which an attempt was made to differentiate between wealth groups. The best picture

was obtained of the middle group, whilst only very partial information was obtained about the poor and better-off.

4.2 Information constraints

We have seen that the training priority meant that only half of the available 14 days were spent actually obtaining information in the field. In a survey without the training element up to twice the number of groups would have been interviewed (and more key informants too), and this would *inter alia* probably have allowed firmer conclusions as to whether we should consider pastoralists as a separate 'food economy', and whether the agro-pastoralists should be split into two: those with a heavy dependence on agriculture versus those with a lighter dependence.

Our conclusion at present is that such divisions cannot be justified because there are gradations in every single *kebabi* between pastoralism and relative dependence on cultivation – in short between the agro and the pastoral. For instance, in those sites counted originally as 'pastoralist' there was always evidence of a minority involved to some degree in cultivation. Our best guess is that in the rural population as a whole, 'pastoralists' number between 15 and 20 per cent. Likewise we could guess that perhaps 10% of the population are so heavily dependent on agriculture (mainly irrigated) that they hold relatively few livestock because the opportunity cost of associated family labour favours agriculture.

Clearly the quality of the field information was affected by the fact that most of it was obtained by trainees. Despite the training priority, however, it should be said here that every single question asked in the field was put with the intention of getting the clearest information possible and the best understanding of the food economy. This was a basic principle of the exercise for two reasons. The first is ethical, in that it would be quite wrong to intrude upon people's time and goodwill, and their remarkable courtesy in attempting to give answers to a stream of questions, purely to advance the skills of the interviewer. Secondly, given the dearth of information available on the local economy, every minute in the field must be counted precious.

Inevitably some of the interview information has had to be discounted and there are gaps and confusions. One particular problem found repeatedly was the tendency of interviewees to overestimate the amount of grain households typically purchased in a given year, and this was not caught properly on each occasion. Another problem of the inexperienced interviewer is to fail to spot anomalous information, for example when it was claimed that poor female headed households had purchased remarkable quantities of pulses, a relatively expensive food. On the other hand, information may appear anomalous when it is not. For an outsider, for instance, the consumption of sugar and expenditure on coffee even by poorer people may seem incredible; repeated inquiry however confirms the case.

The results discussed below contain the filtered information, and as offered as a reasonably sound, but limited, account. We have not tried to devise spurious groupings or averages with the sample obtained. Instead, we present a series of pictures along the agro-to-pastoral gradient which we suggest presents a dynamic view of the rural economy as a whole, and allows some first conclusions on who might go hungry and why.

4.3 Which baseline year?

Preliminary discussion with key informants was aimed at identifying a reference year. Theoretically, this could be any past year, used as an index against which current year information may be compared for monitoring purposes. But since food security monitoring is primarily aimed at gauging the effects of stress, e.g. drought, a 'normal'

reference year is desirable. However, in a semi-arid zone, with wide interannual variations in rainfall and frequent periods of drought – and thereafter of 'recovery' – it is always a problem to identify an actual 'normal' reference year, let alone the statistical construct of an 'average' year, given the nearly complete lack of secondary information.

The choice was either to take the most recent year, 2000, with the advantage that memory of it was immediate, but with the disadvantage that it represented the culmination of three bad years; or to take the most recent reasonably good year, which was 1997. This would show a more balanced economic picture, in particular without the presence of major food aid, but there would be the disadvantage of remembering back over four years. In the event it was decided to go for 1997 but also to take as much information as possible also on 2000 as a 'poor year' comparison. The strategy was only partially successful: both the inclination of respondents and the inexperience of interviewers tended to turn the tables so that rather more information was obtained on 2000 than on 1997. On the other hand, there is interesting comparative information on contrasting years.

4.4 The wealth breakdown

The first three graphs in Figure 3 (i.e. excluding the Rashaida) illustrate the pattern found regularly across the board. The proportions of the groups show a preponderance of the poor, but not much above half of the population even after three poor years of production.

On the other hand, there is clear evidence of overall impoverishment in those years, i.e. a proportion of the better-off slip into the middle category, and a proportion of the middle group slip into the poor group.

The local definition of who is poor or wealthy is almost everywhere based firmly on livestock ownership; and numbers held are claimed to have reduced by one-third to one-half between 1997 and end-2000, generally towards one-half. Estimates of typical livestock holdings for different groups are similar across the board, i.e. showing little geographical difference or regular differences as between pastoralists and agro-pastoralists. The implication is that cultivation is an extra activity for those able to provide, or hire, extra labour. Exceptions to the common pattern are in the irrigated area, where as mentioned above resident families tend to hold comparatively small numbers of livestock; and amongst the Rashaida, where the camel component is relatively high.

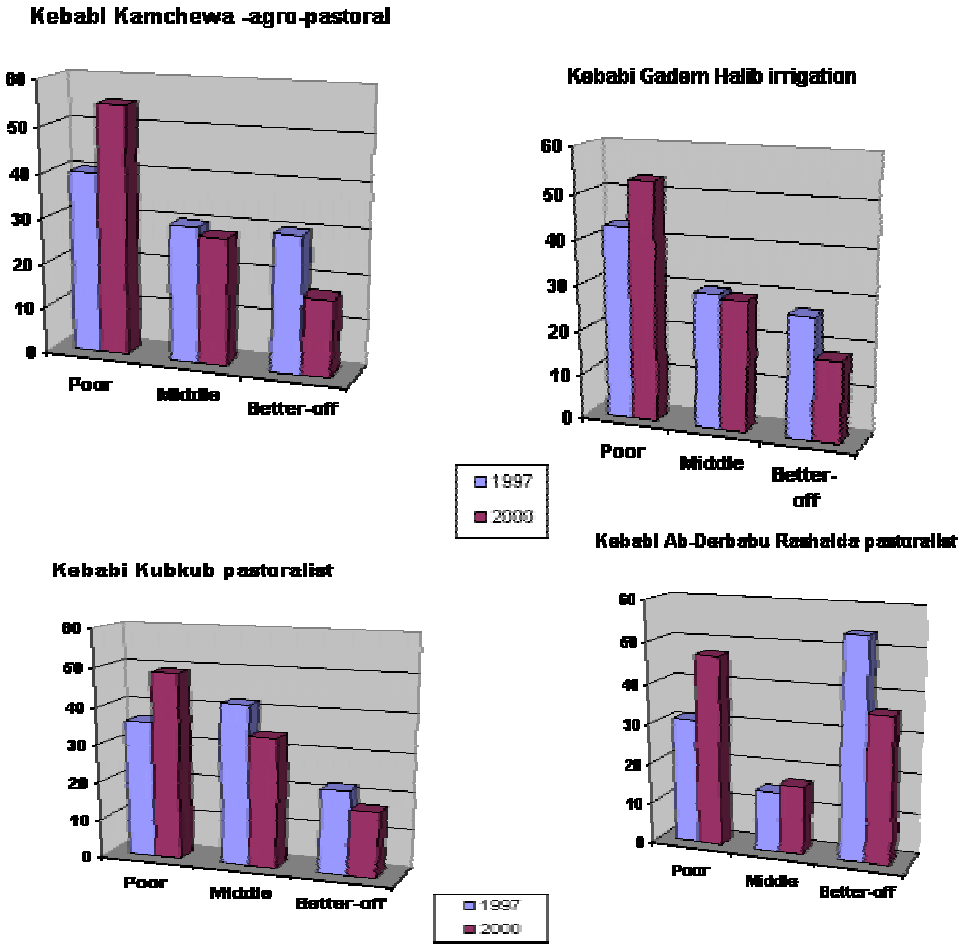
For 1997, with the regeneration of livestock over some years, better-off households would hold 100-150 or more goats and sheep, and a handful of cattle or camels, depending on the location. Middle households would hold 50-70 goats and sheep, and 1-3 cattle or camels. Poor households would hold some 20-25 goats, perhaps a milking cow, or a camel if it earned its keep as a draft animal. We were told that 'a family with less than 20 goats can't be considered to have any livestock at all'. It is interesting to compare the stock ownership reported for middle agro-pastoral households in 1997 with the estimate of a 'liveable herd' for agro-pastoralists in Eritrea given in a retrospective study from 1987.[1] This amounted to 14 'grazing units' of which the typical composition suggested is 48 goats and sheep, 2 pack animals (presumably donkeys), 2 cows, 2 oxen and 1 camel. It is a strikingly similar picture, so that we are encouraged to think that the middle group is indeed well-defined in

[1] *Eritrea Food and Agricultural Production Assessment Study, Final Report March 1988. Rural Development Unit, Centre of Development Studies, Leeds University, UK*

livestock terms, in that they possess a 'liveable' herd, and are by no means rich but are able to make at least the best part of a living from their stock.

Figure 3

Wealth breakdown: proportion of population in economic categories as % of total



The 2000 wealth breakdown picture obtained in this survey differs greatly from that recorded in the WFP/ERREC ANA mentioned above. There, in the North Red Sea Region as a whole, 85% of households are put into the very poor (67.5%) and poor (17.5%) categories, with the rest split evenly between middle and better-off[1]. For agro-pastoralists one wealth indicator shown is the area of land cultivated (from 0-0.125 ha for the poorest to 1-2 ha for the better-off). But by far the main criterion of poverty is livestock ownership, and in the ANA survey it is claimed that 67.5% of the rural population now own only 0-5 goats and 0-1 donkey, whereas in the present survey roughly 50% of the rural population are reported to own some 5-15 goats, perhaps one or two cattle, and usually a single donkey. The present survey shows a picture of a rural economy under considerable stress; the ANA offers a picture of a rural economy under collapse.

We illustrate the Rashaida wealth breakdown because it stands out from all others both in having a small middle minority and in having, for 1997, an absolute majority of better-off. It is tempting to speculate upon the meaning of this: the suggestion is of a

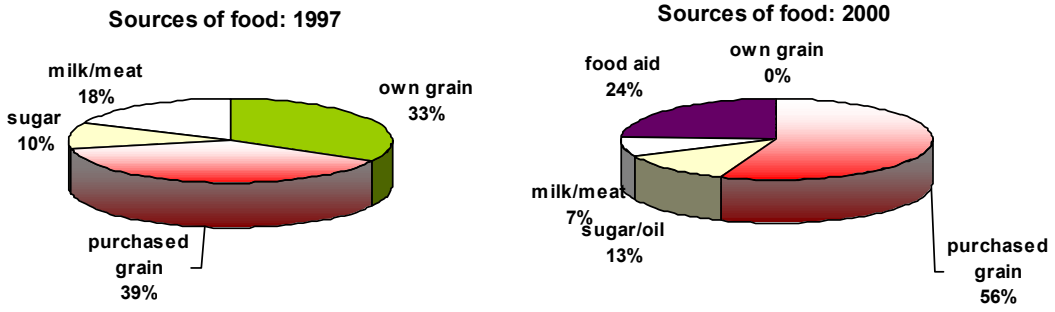
[1] WFP Eritrea (200/2001 ANA) Rapid reporting format for North Red Sea Region

catastrophe between 1997 and 2000 which actually reduced many better-off not simply to middle status but to the ranks of the poor. One might also theorize about capital accumulation amongst camel pastoralists such that either you own many animals or you are herder for the wealthy. But perhaps there is quite another lesson to be learnt, and that is about poor fieldwork (in which case the consultant must accept some responsibility). This information was the result of an especially time-constrained field visit, a single tent crowded with the full trainee team and the full complement of group representatives, a first big topic introduced before the proper dynamics of the interview were established, and initial overdependence upon the answers of a single leading elder. There is a crucial difference between rapid assessment techniques and rushed fieldwork.

4.5 1997 versus 2000

Figures 4 refers to an agro-pastoral group near Af'abet town. The 1997 chart shows what appears to be a successful mode of life. Nearly one-fifth of annual food calories come from milk and meat, which would be considered luxury by most highland farmers elsewhere in Eritrea. Sources of staple grain are balanced between own production and purchase, and the cash for purchase is balanced between diverse options, which must offer some insurance.

Fig. 4 Middle Agro-pastoralists at Gebgeg

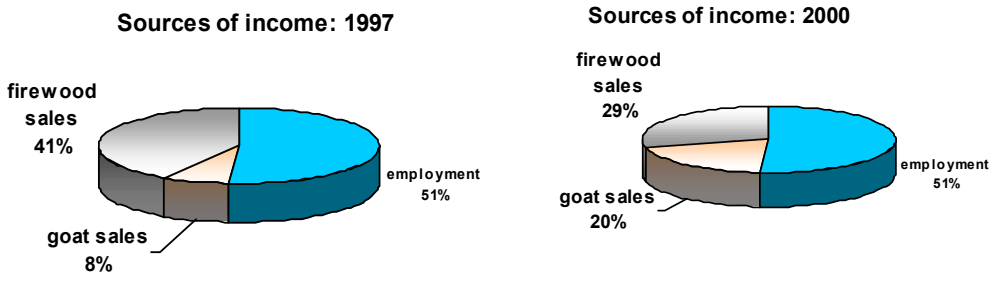


The working of that insurance seems to be illustrated in the 2000 chart. Food aid here is substantial, but cannot by any means cover the deficit left by drought which dramatically reduces milk calories and wipes out the harvest (not all localities suffered such a complete loss of crops). The extra money for extra grain purchase comes from the one of the three options (see figure 5) which proves expandable in these circumstances: *the sale of livestock*. The market demand for these stretches far beyond Af'abet town to Keren and Asmara and Mitsiwa. On the other hand, the danger is that stock-owners will be forced to sell so great a proportion of their livestock that they are seriously impoverished for the future. This danger is all the more critical for poorer herders, and here food aid may play an important economic role in limiting this pressure.

Returns from the sale of firewood diminish, suggesting that the town market cannot support increased numbers of people trying to sell wood. Employment income remains constant: apart from limited casual labour in town, two other sources of employment were identified: agricultural work in the irrigated areas of the sub-zoba, and more distant agricultural work at a plantation in the southeast of the country. Labour migration to the country's western grain basket seems quite low.

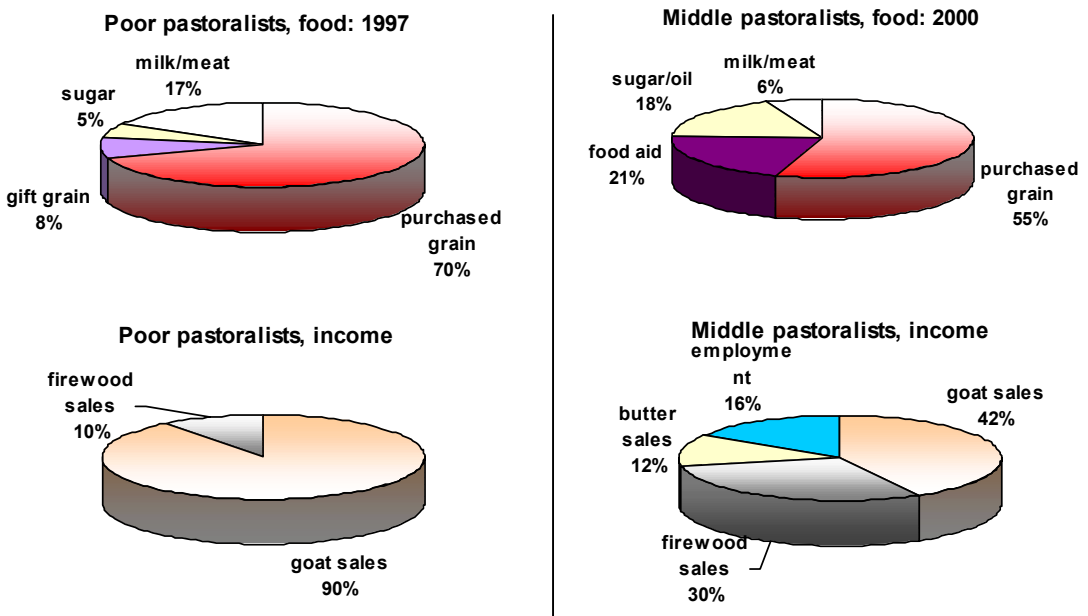
If we now turn to Figure 6**,** we see that by 2000 middle group pastoralists have a milk consumption reduced below that of poor pastoralists in 1997, a potent symbol of

Fig. 5 Middle Agro-pastoralists at Gebgeg



drought-stress. A proportion of the scarce milk is given over to butter for sale, because the amount of calories in grain thus purchased well exceed the calories available from the milk (butter is more preservable and transportable than milk). Aside from food aid, the overall household economy of the middle group in 2000 quite strongly resembles that of the poor group in 1997. But even after three bad years the dependence on food aid is far from absolute: people are clearly still working and pushing their economic options as far as they will go.

Fig. 6 Sources of food & income: Kubkub



The most important economic option is to regenerate livestock as rapidly as possible, especially goats. In the absence of formal reportage, repeated local inquiry during the present exercise allowed a calculation of the effect of different conditions on a starting flock of 25 goats as commonly constituted[1]. With two good years the herders would expect to double the number of the flock, given the relatively limited offtake for sale required. Assuming success also with such other livestock as are owned, this

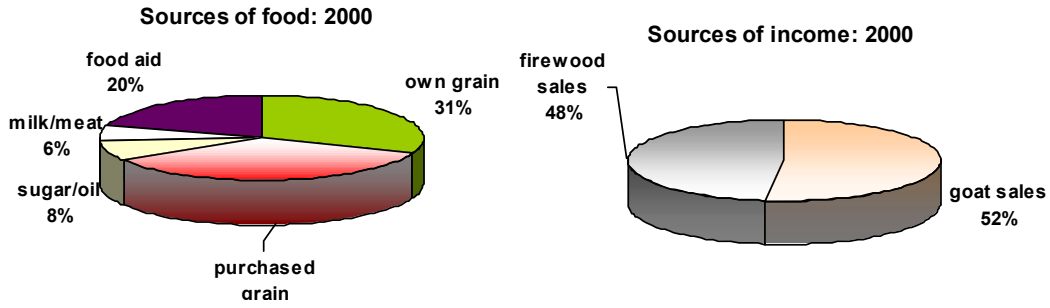
[1] E.g. 10 milking, 4 pre-milking, 10 kids (6 female, 4 male), 1 mature male; or 10 milking, 8 pre-milking, 5 kids, 2 male goats (1 mature, 1 yearling)

spells a passage from poverty as locally defined to a 'liveable herd': not a 'well-off' or even comfortable status, but well away from the immediate threat of hunger. Perhaps equally significant is the calculation that after two moderately bad years (i.e. not the catastrophic drought of the '70s and '80s) the flock of 25 would be reduced to some 15. This would indicate deep poverty, but not a descent beyond the threshold of regeneration of the pastoral livelihood. That is, after all, why pastoral economies survive, and why the Af'abet area in 2001 is still properly to be described as living primarily from livestock.

4.6 Degrees of agriculture

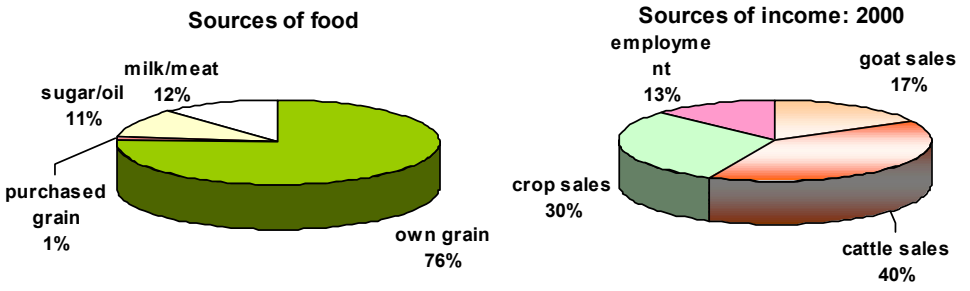
In Figure 8 we see that in Kamchewa in 2000 the conditions were more favourable to cropping than in Gebgeb (Figure 4), with own crops providing about one-third of annual calories for the poor group (and usually more for other groups who can afford to keep their own draft animals and to hire labour). However, the sources of income are remarkably similar to those of the poor group in Kubkub (Figure 6): crops are purely for home consumption.

Fig. 8 Poor Agro-pastoralists at Kamchewa



By contrast, the middle group in the irrigated area of Gadem Halib illustrated in Figure 9 not only produce virtually all the grain they eat, but also sell a surplus. The profit is modest in this poor year (irrigation is affected by drought in the highland watershed areas whence the diverted rivers flow), but threefold or fourfold in a good

Fig. 9 Middle households at Gadem Halib: 2000



year. In 2000 cash from grain sales is substituted chiefly by livestock sales, at first sight making this group look more like ordinary agro-pastoralists. However, this needs to be seen in the light of the other charts: the need for grain purchase was negligible as contrasted with the agro-pastoral groups previously illustrated. Therefore the cash need is much less, and the number of livestock sold is small (and

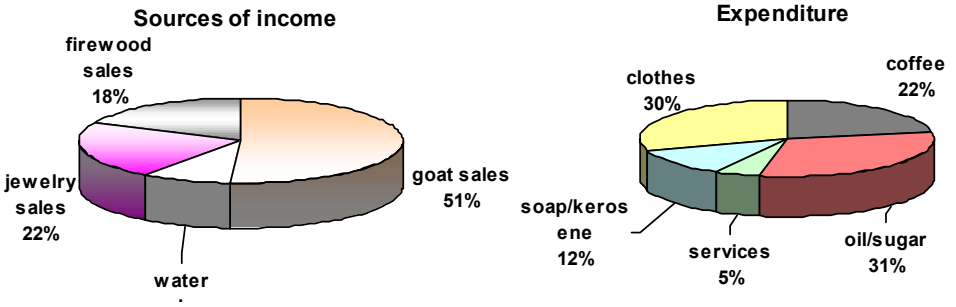
unless the family is in great distress, the cow or ox is likely to be low-value – immature or old). Nevertheless, this is an unusual proportion sold of the small herd kept by these farmers (the sale of cattle particularly marks them out as farmers rather than agro-pastoralists).

Not everyone in the irrigated area is so successful. Poor families tend to rely as much on selling their labour as on cultivation (if they have land). They usually do not possess draft oxen, and in order to borrow a team they mostly need to pay - in cash, or with their own labour, or frequently with a share of their harvest, as is the case in rainfed cultivation elsewhere in the sub-zoba and beyond in the traditional agricultural highlands. Land in the irrigated areas has been officially apportioned in the same amounts to all families, rich and poor. The better-off thus effectively increase their command of land via lending out their oxen to several poor farmers. A limit to this is in the labour and fodder cost of keeping cattle where for much of the year, once the crop residues have been consumed, animals have to be grazed over a wide area or stall-fed on a cut-and-carry basis. In a poor year, there will be little return on harvest share for lending out oxen, and cattle still need to be fed. This might be one reason for the sale of cattle indicated in Figure 9.

4.7 Special cases

Figure 10 shows a special group amongst the poor – female headed households. We have no statistics on their number overall in the sub-zoba, although 15% and upwards was suggested by local informants. Those families with land usually do not have male members able to plough, although sometimes a relative will oblige, or a community will provide the service as a charity for a particularly disadvantaged family. Such women tend to try to combine forms of casual labour with home and child care. If they own a donkey, the possibility opens of carrying water from wells to houses, and collecting and carrying small loads of firewood. In the present case, however, half of the income is from selling goats. These are from a small flock which a woman is able to keep if she has a child old enough to take much of the responsibility, i.e. from seven or eight years of age. Sometimes a poor family is given a goat as charity, e.g. through a customary Muslim *zakhat* gift from a better-off person. If it is a female goat, it is destined to join the flock; if it is a male, it is destined for consumption to mark a religious festival or for sale.

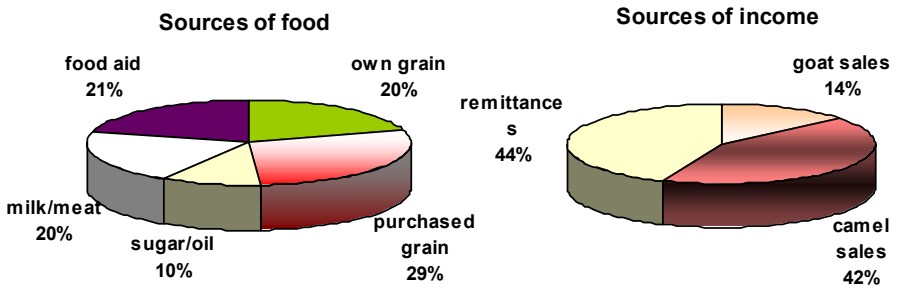
Fig. 10 Female headed poor households at Gadem Halib in 2000



Since the basic grain requirement is covered largely by food aid and gifts, the cash represented by these sales is not large – but it is still for essentials (including coffee or tea as a basic element of hospitality if one is not destitute). Therefore the lack of even a comparatively small amount of cash looms large – in this bad year large enough to force the distress sale of jewellery.

The Rashaida represented in Figure 11 try to cultivate millet in some years depending on where they are at the critical time of year. This is apparently opportunistic agriculture, and it is arguable whether this group should be labelled

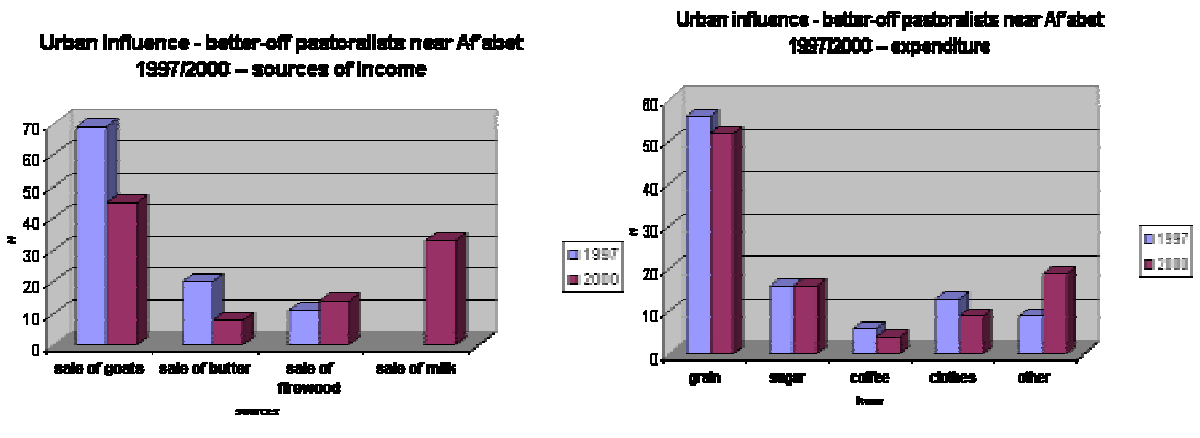
Fig. 11 Rashaida middle group: 2000



agro-pastoral. In 2000, however, they managed to cultivate an equivalent amount to the food aid they received, whilst also retaining enough livestock to afford an appreciable proportion of milk in the diet. The impression gained of a possibly somewhat better-off population than others in the sub-zoba (despite the shared scourge of drought) is reinforced by the sources of income. The Rashaida are more connected than the Tigre-speaking population to an outer world of trade, employment and credit, especially via Mitsiwa, and including some employement in Saudi Arabia. Despite repeated queries amongst the other population, we could find little evidence of remittances as a significant factor. Only with the Rashaida was there such evidence, freely given. The sale of a camel was noted as a means of weathering a bad period, and even then it is a decision taken reluctantly. But given the right trader, a man can sell a camel at Ab-Derbabu for perhaps 2500 nakfa (c$US250) which will then be trekked as far as Sudan and eventually sold for double the price. Two thousand five hundred nakfa will go far to cover a family's expenses even in a bad year.

Finally, Figure 12 illustrates one point about urban influence on nearby rural livelihoods. The purchase of basic items remains reasonably constant in the two very different years. But by 2000, this group had somewhat changed its sources of income

Figure 12



in response to increasing demand from the town population (and possibly also the displaced people in the camp on the outskirts. The notable item is the sale of milk, seemingly in place of livestock and butter.

5. CONCLUSIONS ON THE TRAINING AND THE INFORMATION

5.1 Training success…for some

By the end of the field exercise, the trainees expressed the conviction that if they were now to begin over gain, the field information would be much better. This can be taken to indicate at least some success in the training: an understanding of weaknesses in performance and some confidence in using the method to better effect in the future.

In the opinion of the consultant, out of the seven local government/service trainees who completed the course, three attained a limited degree of understanding of the basic principles and procedures, and four ended the course with a good grasp of the method and first-stage analysis, and of interviewing techniques, although exhibiting different degrees of confidence. Given the level of education and experience of the local trainees, this is not a surprising 'success and failure' rate. Indeed, in one sense this is a satisfactory result, because four would make a quorum of local capacity to undertake monitoring activities in the future. In the present case, if the local ERREC representative were able to remain part of that quorum, this would lend it a particular strength.

But they would still need to be technically assisted and supervised in the first instance. This is where the trainees from Asmara and Keren come in, since their grasp and performance reflected in the main their greater level of experience or education. The conclusion here is that one such officer should lead local monitoring activities at least in the first phase until a pattern of work is set which the local officers are confident with.

5.2 A better balance of training and information gathering

The exercise showed that it is feasible to combine local capacity building with the acquisition of baseline information, but that adjustments should be made in terms of time and personnel. The problem is in having one expert leading both the training and the information and analysis in the space of two weeks[1].

An efficient alternative suggested by the consultant would be to have two people to lead the activities over a period of three weeks. The trainees should be as carefully chosen as possible, but they should not be increased in number, because ten or eleven per trainer is far too great a number for proper attention to be given to each. In whichever way the two leaders were to divide the tasks of training and concentrating on the field information, there would without doubt be large benefits all round – a stronger training, with that extra week which was felt to be lacking in this exercise, a doubling of the capacity for supervision and quality control of the fieldwork and analysis, and an extended and more consistent search for key informant information.

If the present exercise had, it seems, reasonable success, the improved exercise ought to be able to combine first-class training with an amount and quality of information gathering far closer to the level attained when capacity building is far

[1] i.e. discounting the extra time in Asmara and Af'abet for introductory work and meetings and for the formal presentation at the MOA at the end.

lower on the agenda. In the opinion of the consultant, this would in fact be a cost-effective course, because it is unlikely that a baseline exercise will be repeated in the same sub-zoba – therefore together with the capacity building the chance must be taken to maximise the information gain.

5.3 The option of agro-pastoralism

It would be unwise to over-interpret the results obtained, but some messages do seem offer themselves. The first is that agro-pastoralism is a phenomenon across the wealth span of the population, and is not of itself a sign of either relative success or failure in livestock herding today. If it is the result of a general decline in the livestock sector in terms of numbers owned per head of the human population, as claimed by key informants, this is a very long-drawn trend, dating back several generations but speeded up by the droughts of the last thirty years.

With the exception of people settled into irrigated agriculture, the amount of land cultivated by a family seems generally to match their wealth status in livestock terms. Some of the most wealthy livestock owners attempt no agriculture, but others do. People who are comparatively well-off they will both own oxen which they can rent out in return for crop shares or labour, and beyond that they can afford to hire labour to maximise their own production in a favourable year. Poorer families will be disadvantaged in two ways: they will probably need to divide their labour between their own agricultural work and casual work for others, and they will usually need to borrow oxen and return one or other form of compensation. In short, they will not be able to cultivate as much land for themselves as their family labour resource might suggest: a poor pastoralist is unlikely to become a rich agro-pastoralist.

On the other hand, rich and poor alike seem to see an overall profit in investing labour and resources in agriculture, because they value the results of good years more than they rue the losses of bad years, which are a given in this risky rainfall environment for crops. Their claim is that agriculture helps to secure their food security, and if we cannot quite clearly see the balance of profit and loss, we must accept that they do. It is also true that casual labour on other people's farms, including in the irrigated areas, is an added income possibility for poorer people whether or not they cultivate for themselves.

Finally, there appear to be factors in favour of agriculture which are beyond this kind of economics. Cultivation is to some extent at least seen as a basis for an increasingly settled way of life for families. This must in fact mean for parts of families, especially women and younger children, since livestock must usually be moved to distant pastures for part of the year. The attraction of settlement was clearly stated to us by informants: access to services, including health but in particular education. This may for some time be the prerogative mainly of those who can afford to hire labour for agriculture or to contract other herders to look after a portion of their livestock. But as a group of elders said on this subject: "We know that our future lies in the education of our children." And when asked how they could expect to balance settlement with the primacy of livestock rearing, they answered with a certain firmness: "Just let us have more schools and teachers, and between us and our educated children we will know how to manage our affairs."

5.4 Livestock and vulnerability

When lamenting the effects of drought, people in Af'abet sub-zoba first express losses in terms of livestock and secondarily in terms of crops. For livestock remain the foundation of the local economy: it could probably survive without agriculture, but would collapse immediately without livestock. It is only in this sense that they are

more vulnerable to the loss of livestock than of crops: they do not generally expect to depend on crops, whilst they do generally depend on livestock.

People tend to maximise the number of livestock which they hold, especially goats and we have seen why: not only are they the source of the most valued food, which is milk, but they are also best guarantee of purchase of sufficient grain and other essentials. As we have seen also, a linked aspect of food security is that if a core number survive when drought strikes, regeneration in subsequent seasons can be rapid.

Insofar as we allow ourselves to hint at policy messages from the foregoing, we might point out two things. There is an evident interest of the government in promoting agriculture in this as well as other zones. We are not in a position to analyse the scope for expansion of the irrigated areas and the cost benefit of such investment; but there is no doubting local interest in such expansion. For rainfed farming there seems to be far less scope for effective intervention, given the limits imposed by marginal rainfall levels for any crop, and frequent rain failure.

On the other hand, the prime economic sector for the foreseeable future, livestock, should not be allowed to become secondary in terms of investment of available resources, especially in veterinary service. In addition, a much talked-about policy of promoting smaller livestock holdings in favour of better-fed and cared-for animals must rest on a clearer risk analysis. At the moment it sounds somewhat like a farmer's argument rather than an argument on behalf of pastoralists. Setting aside questions of market response to quality versus quantity, safety in higher numbers, as outlined above, cannot be converted into profit in lower numbers without serious investment in a safe environment for new, high quality flocks and herds. This would go well beyond veterinary care to watering and fodder schemes able to withstand the rigours of drought, and begs the question of both feasibility and cost effectiveness.

We may end with a general observation. Pastoralism in northern Eritrea can be seen as an ancient or highly traditional mode of life; but paradoxically pastoralism today is acutely tied to the modern, urban sector. This is because the value of pastoral production has increasingly shifted from producing milk for home consumption to producing meat for the market, which earns the cash for grain purchase. As for the firewood sales so critical to many a family budget, by far the biggest market for meat is the urban market. In short, for their daily food remote pastoralists depend surprisingly directly upon the fortunes of the salaried and commercial classes in Asmara, and on increasing urban numbers generally. They will prosper if that demand rises, and are somewhat vulnerable if that demand falls.

5.5 The next step: food security monitoring

The present exercise did not stretch to the design of food security monitoring, which should be the next step at the local level. Main elements are to be found in the baseline information. The proportions of the wealth breakdown may be monitored for change, the proportionate dependence on livestock, crops, market and food aid may be reviewed in the light of a change in one or other of these factors. The basic purchase requirements may be monitored in the light of price changes and terms of trade. We have saved our last illustration for this last topic. Without waiting for a system to be developed in relation to periodic fieldwork, one kind of monitoring would be valuable and cheap and could begin tomorrow: basic price monitoring. Figure 12 illustrates the key price relationship, that between goats and grain. This is above all what the rural population depend upon.

Due the lack of any price records at Af'abet, the information for the graph had to be taken by recall amongst a group of six traders in the town. We may point to two particular issues of interest. First, where prices are not acutely affected by drought or some other strong factor, the terms of trade follow a fairly steady a track, and this is unlikely to be entirely by chance. People primarily sell goats to buy grain, and will try to increase the selling price if grain prices rise – in this case in the expectation of getting in the range of 50 to 75 kg of grain for a goat. The line holds reasonably well in two poor seasons from 1998, suggesting that there was no panic selling of animals despite the extra offtake reported to us by the herders. This must have been partly influenced by then availability of food aid, but also suggests that this was a period of stress rather than a crisis.

The second point concerns they steep rise in grain prices in 1999 to early 2000 followed by a steep fall. The prices rose both because of drought and because warfare disrupted the customary passage of grain from the west of the country through to the central markets. This trend was naturally reflected in the regional markets followed by the grain board, including Keren market. But only surveillance of Af'abet market could have picked up the sudden drop in grain prices, and the attendant gain for pastoralists in terms of trade, because this was a local story. The IDP camp on the edge of Af'abet was created from mid-2000, and food aid going to them appeared on the market in sufficient quantities to affect the overall grain prices. A simple market price collection system for Af'abet market could be the first step in the development of a food security monitoring system run by local government.

As a final observation, it ought to be noted that monitoring may be of improvement as well as of impending crisis. Given the current baseline, if two years of reasonably good rainfall are experienced, then it will be important to look at the position of food aid in the food economy during that period, and on the possibility of progressively dwindling requirements.