"What to do about Karamoja?"

Why pastoralism is not the problem but the solution

A food security analysis of Karamoja

For FAO/ECHO
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September 2010

The analysis behind this report was conducted on the basis of existing livelihood evidence and secondary information, the livelihood (household economy) field research and the accompanying complementary studies. The analysis was conducted by a team comprising Simon Levine, Jackson Ondoga, Dr Paul Opio (FAO), Benard Onzima (FAO), Agnes Atyang (FEWSNET), Patrick Nyeko (Samaritans Purse), Richard Ofwono (Save the Children), Dr. Kennedy Igbokwe (FAO), Stella Ssengendo (FAO), Hakuza Annunciata (MAAIF) and Pamela Komujuni (OPM). The conclusions and recommendations are those of the team members together.

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Executive summary

The dominant perception of Karamoja within government, the civil service and among development partners is that the population of Karamoja is a) extremely poor, b) their livelihoods are very vulnerable to frequent droughts and c) pastoral livelihoods are not viable in the long term. Empirical evidence shows that these three perceptions are not true. Detailed quantitative research clearly showed that even in a year with almost complete crop failure, the majority of households in the agro-pastoral and pastoral areas of Karamoja were able to cope without external assistance - only very poor households in the agro-pastoral and pastoral areas of Karamoja cannot cope without social support, in about the same proportion as in other areas of Uganda. The household incomes of the different economic groups were broadly comparable with households in the equivalent economic groups in other parts of rural Uganda, particularly once the accumulation of wealth (i.e. increase in herd sizes) is included as income. Although crop harvests are unreliable in most of Karamoja, households that are able to rely on semi-nomadic herding as a main livelihood strategy are able to cope with such crop failures. Settled households that depend on rain fed crop agriculture are not able to cope. Development policy which favours encouraging settlement is, perversely, creating artificial disaster emergencies or artificial droughts; because it creates a situation where households can no longer survive independently when the rains are poor, which did not exist when households could survive from their livestock. Although erratic weather puts a stress on livelihoods in Karamoja, the main threats currently are not from the weather, but from restrictions on movement and insecurity.

The resilience of the agro-pastoralist and pastoralist livelihoods is particularly remarkable given the very limited development support received. Evidence based analysis clearly shows that the best livelihood strategies for most of Karamoja, both for income maximisation and for resilience (DRR) are livestock-based herding. Basic support to existing livestock strategies (in particular to animal health and marketing), could dramatically improve livestock productivity. This would both raise incomes to levels above those of households in many parts of Uganda and would increase resilience, making the even small herds owned by the poor sufficient to support food security (from livestock sales) without depleting herd sizes. When considering the likely impact of climate change – continued increase in the unpredictability of rainfall patterns – this strategy becomes ever more pressing. Current development policies do not adequately support this, and most development programmes give more support to crop based livelihoods than to herding based on freedom of movement. This runs counter to the evidence.

Settlement programmes do not seem to be attracting much support from those among the local population who have an economic alternative: they seem rather to be using aid to attract the destitute. They also attract seasonal migration, rather than the permanent settlement of those with viable livelihoods (i.e. the vast majority).

There are a number of areas which could improve livelihoods still further. Herders could be supported to gain a better share of the final retail value of their animals (again, both increasing incomes and the resilience of the poor). Support could be given to complementary livelihoods, largely based on exploitation of the rangeland, which are compatible with existing ways of life. Issues such as rangeland management and conflict management are not being dealt with adequately. Efforts appear to be constrained by the lack of social structures and institutions capable of enforcing their decisions at the level at which the problems arise, e.g. at the level of populations groups such as the Matheniko, Jie, Dodoth, etc. These groups formally share property (rangeland) and are the identities that provoke conflict or create alliances and yet they

apparently do not have social institutions capable of speaking on their behalf. Interventions based on local level ***activities*** - e.g. arranging local peace meetings or discussions with small groups about tree planting on the range, will not bear any long term fruit unless this issue is better understood and tackled directly at a strategic level.

The current automatic reaction of giving food aid to herders whenever the rains are poor is not only unnecessary in most cases but also has powerful negative consequences. It supports the prevailing erroneous notion of "the Karamojong" as a problem and of pastoral-based livelihoods as unviable, and takes away from local communities the social responsibilities for protecting the economically dependent. This is very much against the interests of the populations concerned.

The overall recommendations are as follows.

1 Livestock-based livelihoods remain the best economic mainstay of households in Karamoja**.** Support to the settlement of agro-pastoral and pastoral households, and the transformation of their livelihoods from semi-nomadic herders to largely crop farmers, is counter-productive, if the objective is to improve their food security.

2 Karamoja needs long term DRR support and long term development support, and not repeated short term or protracted humanitarian relief. (The households who cannot cope need social protection systems, rather than protracted humanitarian relief.) This support should focus on providing animal health services, improving freedom of movement, supporting livestock marketing and supporting the complementary livelihood strategies which are already being pioneered by the local population.

3 A longer term economic transformation of Karamoja can only happen when difficulties issues are tackled, in particular when the land rights of the Karamojong are recognised and respected.

4 **Current policy towards Karamoja is skewed.** It is difficult for humanitarian actors or development partners to work in such a context.

5 Humanitarian and development actors need to be careful about the interventions they support in Karamoja, to ground these in a coherent strategy and to base this strategy on a thorough analysis of livelihoods – including the socio-cultural, political and legal aspects of livelihoods

Introduction

The dominant perception of Karamoja within government, the civil service and among development partners is that the population of Karamoja[1] is a) extremely poor, b) their livelihoods are very vulnerable to frequent droughts and c) pastoral livelihoods are not viable in the long term. This report presents empirical evidence that shows that these three perceptions are not true. The consequence of the fact that humanitarian and development aid policy and practice are being guided by fundamental misperceptions and misrepresentations of the truth will then be analysed.

The empirical evidence was gained during several weeks of extensive fieldwork during which detailed and quantitative information was collected on household livelihoods. The results of this exercise, the livelihood profiles, form part of this overall study. This information was supplemented with previous livelihood studies already carried out in Karamoja (in particular, studies using the same methodology, conducted by Save the Children, OPM, WFP and FEWSNET). Complementary studies were also commissioned to explore further specific questions relating to livelihoods and food security: livestock marketing, complementary (i.e. non-agricultural) livelihood activities; natural resource management from a social organisation perspective; and future trends in livelihoods, including a DRR perspective and a climate change perspective.

Following the studies, two weeks were spent analysing the data, in order to develop a short term food security humanitarian strategy; establish parameters for early warning; develop a medium term livelihood support strategy; and develop contingency planning for response to a slow onset crisis in Karamoja. (The analysis team was detailed in the preface.) An analysis workshop was also held with the authors of the complementary research studies together in order to incorporate all the knowledge and analysis into one coherent understanding of Karamoja livelihoods and a coherent and logical response, based on empirical evidence. This report summarises that analysis.

This report should be read in conjunction with the livelihood profiles and the complementary studies. It does not attempt to repeat or even summarise all that they contain. It should be stressed that the detailed household economic data was collected for 'a bad year' (2008/9), a year of almost complete crop failure in the pastoral and agro-pastoral areas, and with a crop yields down by around 50% in the farming areas. (See livelihood profiles in annex for maps of each of the areas.) Household economic figures are therefore an actual 'worst case scenario'.

Food security in Karamoja – myths and facts

As stated above, the conventional wisdom about Karamoja is that it is poor, livelihoods are vulnerable to drought and nomadic pastoralism is no longer viable and needs to change. Most

[1] It is significant that most studies in Karamoja refer to 'the Karamojong' whereas similar studies in the rest of the country would avoid defining people by their ethnic group. The very citizenship of the population of Karamoja is perceived differently from those of other Ugandans. This report considers the livelihoods of people who live in Karamoja, regardless of their ethnic identity. The use of the term 'Karamojong' will be reserved for occasions when it is considered relevant.

policy makers in Uganda believe these three perceptions. The facts, though, paint a different picture, and these are detailed below as they relate to each of the three myths.

a) "Karamoja is extremely poor"

Economic surveys which equate poverty with low cash ***expenditure*** conclude that income poverty is high in Karamoja. To some extent, this reflects a cultural lifestyle as much as an economic fact. People simply don't spend much money in Karamoja. That does not mean that they don't have any wealth or don't generate wealth. If household income is defined not as a cash "through-flow" (i.e. expenditure) but as a stream of wealth entering a household (i.e. counting increases in assets, such as a livestock herd, as income) then the numbers tell a different story[2]. The total household cash income of "middle" households[3] was around 800,000/- **in the very difficult reference year**, but they still saw an increase in their herds of around 1-2 head of cattle and 6 shoats. The cash value of this (at reference year prices) was an additional 420,000/-, giving a total household income of around 1.2 m/-. This is broadly comparable with the cash income of 'middle' households in other rural parts of the country and was the income in a very bad year. [All money is given in 2008/9 terms. Livestock prices have approximately doubled since then.]

The better off (Agro-pastoralists) had a cash income of just under 1m/-, which is relatively low for better-off households, but the value of the herd increase was around 1.4m/- (but which today would be worth almost 3m/-). An annual household income of 2.4m/-, at 2008 prices, was again reasonably normal for much of rural Uganda, and this, it must be remembered was for a year of almost total crop failure. The herd sizes of the poor and very poor went down marginally, and so their income would have to be reduced by about 10-15% from the cash-stream figures presented in the agro-pastoral area, but only around 5% in the pastoral area. Household income of 500,000/- a year (2008) does indeed reflect poverty, but it is not so far different from the rest of the country – and, even with crop failure, they still found over a quarter of their own food, which would be more than the poor in many places would be able to find. The conclusion is that poverty in Karamoja is widespread and deep, but it is not so obviously different from much of rural Uganda that does not carry the same reputation of poverty.

b) livelihoods in Karamoja are vulnerable to frequent droughts

Crop failure has become increasing common in Karamoja, and 2010 promises to be the first good harvest in 4 years. However, there have been no complete rain failures in recent memory, and crop failures have been caused by poor rain distribution, not by lack of any rain. The distinction is crucial because pasture and browse are not affected in the same way as field crops and so there have been no years in recent memory where pasture or water for livestock have been unavailable. (Access to good pasture has sometimes been a problem because of security, but this is a different problem.) For as long as livelihoods are livestock dependent, then, we can say that there have been no recent droughts in Karamoja. There have only been "droughts" for people who are settled and who rely on farming. (Settlement policy coupled with reliance on dryland farming can thus accurately be described as creating artificial droughts.)

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[2] Clearly this latter definition is more meaningful: one only has to think of a case where a herder sold off all animals from natural increase and invested the money in buying a different kind of livestock, which would obviously be counted as income.

[3] Middle and better of households together make up around a third of all households.

The livelihood profiles show in a quantified way how people coped in a year with no crop production (2008/9). Significantly, they were able to cope. In the pastoral area, no food aid was received during the reference 12 month period. A few extra livestock were sold, but herd depletion was not so great even for the poor that it could be considered an unsustainable survival response. (Even the middle enjoyed an increase in herds despite the extra strain put on the household budget and the increased need to sell animals to buy food.) The main issue of sustainability lies much more in the deforestation caused by firewood and charcoal sales, but this is also a common problem in much of rural Uganda. The conclusion is that even poor families were able to cope with a close to total crop failure in the pastoral and agro-pastoral areas, even with the existing extremely low levels of livestock productivity problems. As discussed below, technical experts estimate that a few simple steps should be able to improve goat reproduction and mortality to levels that would have seen herd **increases** for the poor even in a year of crop failure such as the reference year. As long as households have herds that are large enough, they are extremely resilient to rain failures of the kind that Karamoja experiences. If we define a "sustainable herd" as one which can support the entire minimum food and cash needs for a household for an entire year (i.e. assuming, unrealistically, that there are no other sources of income and a total crop failure), then currently the size is 12-13 cattle and 60-65 shoats. Technicians estimate that with a few simple livestock management and health interventions, this should drop to around 10 head of cattle and 25 shoats. In the pastoral areas the poor had around 10 cattle and 15 shoats. (The impact of market interventions could bring the potential minimum sustainable herd down to as little as eight cattle and 20 shoats.) According to the evidence, at least half the population of the agro-pastoral zone and around two-thirds of the population in the pastoral zone already have "sustainable herds" meaning they need no other income sources. The rest of the population in the pastoral areas and all but a quarter of households in the agro-pastoral zone have herds that could provide them with all their needs with a simple livestock intervention. (Cattle raiding of individual herds can be a factor in determining whether or not a household has a viable herd.)

c) pastoral livelihoods are not viable in the long term

The evidence shows that pastoral and agro-pastoral livelihood strategies are currently capable of supporting households to meet their basic minimum needs without external assistance, even in times of poor rains. A degree of supplementary income is necessary for poor households, but poor rural households in the rest of Uganda have just as great a need for non-farm supplementary income (selling labour, charcoal, etc.)

The most serious difficulties facing nomadic pastoral households are related to security and the accompanying restrictions on freedom of movement. Climatic hazards exist, of course, but they are a much less serious threat.

The conclusion from the facts is inescapable. A livestock based livelihood (pastoralism or agro-pastoralism) is highly resilient to the natural shocks that the populations in Karamoja face. This should not be surprising. The very reason why people there have practised pastoralism and agro-pastoralism is because this guarantees their survival even with the climatic shocks that frequently occur. Although it is rightly said that there have been major changes in the economic context in the past few decades, livelihoods have adapted well to these changes (e.g. increasing sales of milk where a market exists, livestock markets integrated with national markets, etc., as well as development of supplementary livelihood activities).

Humanitarian response in Karamoja – myths and facts

Since the end of active conflict with the LRA and the end of the humanitarian crisis in northern Uganda, Karamoja has become the main focus of humanitarian concern in Uganda. In fact, Karamoja has being receiving some humanitarian aid (i.e. food aid) for the past 3 decades at least. The justification is obvious. Karamoja is the poorest part of the country and on top of this, droughts have become more frequent. Until the local economy can be "transformed", many will continue to depend on aid in order to survive.

This justification may be obvious, but the evidence indicates that it is quite erroneous. Karamoja does not suffer from frequent droughts, natural disasters are rare, and the populations there do not need repeated short term or protracted food aid in order to meet their needs.

The agricultural zone does not suffer from frequent harvest losses: this only affects the pastoral and agro-pastoral areas (i.e. the majority of the Districts of Kaabong, Kotido, Moroto, Amudat, Nakapiripirit, see the maps of the livelihood profiles of each zone for details). In these areas, the vast majority of households can meet their basic (humanitarian) needs without external assistance when their food crops fail. This has been analysed in great detail in the livelihood profiles which specifically researched a year of almost complete crop loss. During the 12 months under study in the pastoral area, no food aid was received and households in all wealth groups were able to meet their basic food needs. Herd depletion from sales to buy food was small for those with small herds (c. one shoat[4] and less than one head of cattle per household). Much of the population saw an increase in herd sizes even in a year of crop failure.

Development in Karamoja – which way forward?

Over many years there have been intermittent attempts to move towards a policy of settlement of the population of Karamoja. This has indeed been a recurrent theme of official policy towards pastoralism across the Horn as whole. In several countries, these attempts have usually been supported – knowingly or unwittingly – by many humanitarian and developments agents, in different ways. Food aid is often a magnet to movement. When agencies (implementing agencies and donors as well as local Government) invest in water development, their choice to do so in areas of planned permanent settlement (i.e. for crop farming) or in 'traditional', semi-permanent living areas (i.e. where agro-pastoralism is practised) can also act as a pull or push to settlement. Aid to settled farming livelihoods in Karamoja continues to be more than support to a livestock based livelihood. It is impossible to be "policy neutral" in aid in this regard, and agencies who do not recognise this are not thereby policy-neutral but merely unwitting in whichever policy they are happening to support. In the past, such attempts have largely failed – agro-pastoralism has continued to be the dominant livelihood. However, the Government of Uganda's policy remains both explicitly stated and is clearly implicit in its development programming (see box 1): pastoralism and agro-pastoralism are not viable, and populations should be supported to take up settled farming instead.

What is the right policy for other agencies? This study does not look at the political choices facing agencies, e.g. the implications of supporting livelihoods which the government believes

4 A "shoat" is either a sheep or a goat, which in economic terms are often fairly interchangeable.

not to be viable, or the relationship between security issues and livestock or farming. We look here exclusively at technical and economic aspects of the different livelihoods.

Questions need to be answered at two levels: at household level (what is best for any individual household?) and at regional level (what is best for communities as a whole?) At each level, there are two different questions: what gives the best return under optimal conditions and which livelihood is most resilient to shocks.

a) Household level, income maximisation

The livelihood research was from a year with poor rains and so it is not possible to use the data directly to answer the question about the best livelihoods under optimal conditions. Some assumptions would have to be made to make any kind of modelling calculations.

A very optimistic assumption would be an additional yield (on top of the yield in the reference year) of 1,500kg of sorghum/maize and 500kg beans. (This would not be feasible for the poor or very poor.) After replacing the food aid which they received in the reference year (around 100kg), and assuming that they would have invested less time in alternative income (charcoal, collecting bamboo and poles) the middle households might have earned 1.2m-1.4m/- and the better off around 2m/- or more[5]. Poor households would be relatively less affected by greater harvests in absolute terms, but might have earned up to around 0.9m/- as a maximum.

In the agro-pastoral and pastoral zone, the herds of the 'middle' households are described in the profile. A typical herd could be 25 head of cattle and 50 shoats. On the multiplication rates of the reference year (extremely high abortions for goats, higher than acceptable mortality for all species) and at reference year prices (about half those of today), this herd gives a potential annual income of just over 1m/-, without reducing the herd size, assuming no income from milk sales in the pastoral area, and an income of around 1.3m/- in the agro-pastoral area. The better off could have an income from livestock sales of around 1.6m/-. On fairly optimistic assumptions about agricultural yields, and using relatively low livestock prices from a “bad” year, the agricultural area would be only slightly better off than the pastoral area on income – by about 20-25% - and no better than the agro-pastoral area. If a small contribution were made by agriculture in these areas, on the scale at which it is currently practised, the differences would be very small. It must be remembered that the pastoral area had just three wealth groups, whereas in the agricultural and agro-pastoral zones there were four, making the “middle' in the upper half of the population (see profiles, in annex). Current livestock prices are about twice those of the reference year and food crop prices are about 50% higher. Using these figures, the pastoral zone would have a slightly **higher** income than the agricultural zone and the agro-pastoral zone would be about 30% higher.

It must be remembered that multiplication rates in the reference year were far from acceptable. Pastoralists complained in particular of a very high level of abortions in goats. It is believed that most of these abortions are caused by brucellosis, which could be controlled by vaccination. Livestock experts and pastoralists agree that birth rates of goats should have been almost double and mortality rates in both species down by about a quarter. Using figures which are generally

5 For simplicity's sake, it is assumed that extra harvest would be sold and all count as income rather than be divided as food and income.

agreed to be easily attainable through simple and cheap animal health interventions (i.e. not requiring any major change to herd management or introduction of new genetic material), household income figures for the middle would be 1.6m/- from the herd alone and 2.5m/- for the better off. This is higher than the agricultural zone, even using the low value for livestock from the reference year. At today's comparative values, the livestock-based livelihood areas would be more than 50% better off than the agricultural zone.

Conclusion: In order to optimise livelihoods in good conditions, livestock based strategies would be considerably more profitable than crop-based agriculture with even a small intervention providing basic veterinary care; and even without any support, they are already at least as good as settled dryland farming from a household perspective – even in good years for farming.

b) Household level, resilience (DRR)

The evidence on resilience is very clear. In the event of poor rains ("drought") of the kind typical of Karamoja that causes a severe or even total reduction in crop harvests, livestock livelihoods are least affected. Pasture and browse conditions remain viable, and as a result, conception, births and milk yields are marginally affected. Although average animal prices do tend to fall, livestock condition never deteriorates to the point where prices are seriously affected. Price falls are instead due partly to increased supply (households selling more livestock to buy food) and to the fact that households with smaller herds may be forced to sell animals before they are market ready (e.g. steers sold at two years rather than three).

Households from all wealth groups in the pastoral areas were able to meet their needs without assistance in a year with no harvest. They had no need to engage in distress strategies – although some were forced to sell off more animals from their herds than were born in that year, herd depletion was marginal. As shown in the profiles (see annexes), even those with small herds were able to source almost half their food needs from their herds in the pastoral zone. The poor households in the agro-pastoral zone received a little less, almost a third of their food needs, from livestock, but this is partly because there is a market for milk in their area, and they chose to sell some of their milk. If the grain they bought with this income is also factored in, their rate of self-sufficiency is similar. As discussed above, this relates to a year with low livestock productivity, which could be easily improved.

In the agricultural zone, the crop failure was much less (down by around 50%), and yet poor and very poor households had no greater self-sufficiency. When looking at income from non-agricultural sources, it is clear that they were close to their coping limit, and engaging in environmentally destructive activities. In the event of a complete crop failure, it is hard to see how they could have coped without external assistance. From the interviews, it can be concluded that there were no obvious income sources that had remained unexploited.

The results of the comparison should not be surprising. Livelihoods have developed in a particular way in response to a natural and economic context. This comparison is between the pastoral and agro-pastoral economy and the long-settled population in the agricultural zone, i.e. those adapted to their environment, who are living in the most favourable areas for crop production and farming the most favourable land within those areas. If settlement were to increase significantly, this would tend to necessitate farming less favourable land within the wet belt. Newly settled populations would also have less well developed coping strategies for this area

and this livelihood and therefore would tend to suffer more because:

- the risk of crop failures would be higher
- the hazard (i.e. impact) from a crop failure would be higher, because of a lower ability to cope.

In other words, the poor rains typical of Karamoja do not constitute a drought for pastoralists or even agro-pastoralists, but they do constitute a drought for settled farmers. This means that encouraging settlement is actually artificial drought-creation.

If this is the case, why are households choosing to abandon pastoralism in order to settle and take up farming? The research evidence shows that households are not deciding to do so out of choice at all. Those who are settling are those who have been unable to continue as agro-pastoralists. Dr Nalule describes the different kinds of settlers in her study. They include victims of raiding, especially widows whose husbands were killed and who have no herds; the very poor, often attracted by the prospects of food aid; children and young women who have been forcibly removed from urban centres; and young men, who have no intention of settling permanently, but who use the settlements for seasonal income opportunities (either farming themselves, or more often taking advantage of the seasonal demand for labour). They either use this money to maintain their pastoral livelihoods or even to invest in livestock. The settlements are thus far from 'communities' of any normal kind, but they are composed of people with no clan or family relationship and with a very skewed social and demographic make-up. This is extremely important for economic reasons: in times of hardship, the poor rely on the better off to support them, e.g. by hiring them to work (in forms of relationships often classified as "patron-client"). A settlement composed almost entirely of destitute and widows is not, on any definition, a viable community.

Conclusion: Settled dryland crop farming in Karamoja exposes people to greater risks from natural calamities[6] than pastoral livelihoods strategies. Support to pastoral (and agro-pastoral) livelihoods represents a far better investment in DRR than support to settled crop farming systems.

c) Community level

Simplistic calculations can be made purporting to show that a given area of land will be more economically productive if used for crop farming than for livestock. True comparisons are much harder to make, since livestock management under pastoralism uses different kinds of land in different ways. Certain areas are kept as dry season reserve grazing lands. These areas are those most at risk of being taken for settlement because they are the most favourable for crop farming. However, taking these areas out of the pastoral system can undermine the economic usefulness of the drier areas if migration patterns are disturbed. This will not be revealed by a simple HEA livelihood profile. More detailed study confirmed what was already well known: limitation on movement a) caused by the removal of key areas from the pastoral grazing system for settlement, and b) caused by enforcement of rules preventing livestock from moving from one District to another – exacerbated by the creation of new District boundaries – is already having a detrimental effect on livestock. Continuation of this policy will make pastoralism harder and harder to sustain. A full economic evaluation of settlement would have to consider the overall impact to the whole pastoral economy of removing dry season reserve grazing areas from use

6 This is an economic analysis and it excludes evaluation of the additional risks to livestock keeping from cattle raiding or other security issues.

Box 1: Food security policy for Karamoja

The Government of Uganda has no official policy on pastoralism, but it has recently unveiled a broad 5-year food security programme costing US$40m. A look at the budget gives insight into the Government's priorities and their commitment to support agro-pastoralism.

	BUDGET (US$)
Provide agricultural and farm inputs (100 tractors, improved seeds and fertilizers)	13,766,667
Settlements, with windmill / solar driven irrigation systems from major dams	1,547,619
small scale irrigation schemes, from boreholes	1,380,952
Crop agriculture : SUBTOTAL	**20,938,095**
Introduce improved livestock breeds, and production of fodder	809,524
Support to animal health	**571,429**
Promote ostrich and camel farming	214,286
Livestock: SUB TOTAL	**1,876,190**
'Water for production': SUB TOTAL	**2,223,810**
environment: SUBTOTAL	**3,476,190**
Introduction of food silos: SUBTOTAL	**4,214,286**
Agro-processing and marketing: SUBTOTAL	**3,128,571**

Aource: *Karamoja Action Plan For Food Security (2009 – 2014)*, Office of The Prime Minister, Government of Uganda, March 2009.

Using this budget to deduce Government priorities and policy, it is clear that the Government priority and policy is to channel less than 5% of the total budget to support livestock in a semi-nomadic pastoralist area. Of that, nearly all is for the introduction of new species or breeds, which will most likely be for the better off (chosen) elites. The only support to local livestock rearing systems is in red – just over 1% of the total budget! Out of $40m, only two budget lines may possibly be of interest to the population of Karamoja – support to animal health (if this is not used for veterinary care for the 'improved breeds'; and the introduction of camels if the aim is promote widespread ownership. (Ostrich farming, unlike camel herding, is done by enclosing land which does not favour widespread ownership and which would be counter to the wishes and interests of the majority of the population.) 95% of the budget goes to 'settling' semi-nomadic people. It is not hard to foresee the impact of this programme (if ever funded and implemented) on the household economy of poorer livestock keepers. The programme clearly reveals how unfavourable Government policy is towards pastoralism.

for livestock. This has not yet been done.

Future trends in livelihoods in Karamoja

The studies here give very clear evidence for the economic viability of pastoralism, for its comparative advantage over crop farming in Karamoja and for its drought resilience as a livelihood system. What though of the future? Are there reasons to believe that the relative profitability of pastoralism will change in the medium to long term? To examine this, we look here at four issues:

- Carrying capacity of the land

- Climate change
- Future market factors
- Rangeland management and security

a) Carrying capacity[7]

The population of Karamoja is growing. If the same proportion of the population continue to depend on livestock for a livelihood, herd sizes would need to grow in order to ensure that all households have a viable herd. Livestock experts are convinced that increasing herd multiplication rates is easily achievable and can lead to increased livestock numbers in Karamoja. Are there reasons to think that this will not be possible in terms of the rangeland itself?

The consensus conclusion is that there remain large areas of potential grazing land which are not currently being exploited for livestock. This is often for security reasons, where areas between two groups are left as a 'no-man's-land' to avoid the risk of attack. There are areas which have been heavily over-grazed and have become degraded. This is not caused by excessive livestock numbers in total but because normal herd management practices have been disrupted, especially by the 'protected kraal' system, which continues in one form or another in some areas. If good herd management is possible, then it is generally accepted that livestock numbers can increase significantly without any threat to the long term sustainability of the rangeland. An additional reason for believing that increased herds are possible is the recent popularisation of camels in Karamoja. Camels are not traditionally kept in Karamoja, but they offer an important economic opportunity. Camels do not compete with cattle for pasture but rather take advantage of currently under-exploited browse.

b) Climate change

Whether or not man-made global warming is the cause, climate change is already occurring and is likely to continue. The exact nature of future weather patterns in Karamoja is not known for sure. Temperatures are expected to increase though the impact on rainfall patterns is very hard to predict accurately. The most significant change in weather patterns over the past decades has been increased unpredictability. While it is very obvious that such disturbances to weather patterns will present a major threat to crop based livelihoods, one of the key strengths of pastoralism in Karamoja has been that it is largely unaffected by changes in the distribution of rainfall.

Conclusion: Pastoralism promises a much more secure future in the threat of climate change.

c) Future market developments

Essentially, livelihoods in Karamoja depend upon the relative terms of trade of three broad categories of goods: livestock (and their products); food and other crops; other manufactured goods that they need. It is very hard to predict how these will change in the future and any

[7] There are some who have argued that the concept of 'carrying capacity' is inappropriate to pastoral systems which are not managed to maintain equilibrium, but to manage livestock numbers dynamically. The term carrying capacity is used here quite loosely, and that debate is not relevant here.

possible analysis was beyond the scope of this study. It is generally believed that as societies become richer, the demand for meat and animal products increases, which would bode well for livestock livelihoods.

Of more relevance in the Karamoja context are the very specific current market conditions and how they could be changed. This is clearly analysed by Ezaga, who shows that there is enormous scope for improving the prices which pastoralists receive for their animals even with existing market conditions in Uganda as a whole. They currently receive a lower percentage of the final retail value of their animals than is possible, due to poor marketing infrastructure, weak coordination of markets and the threats of insecurity. As a result, most herders sell their animals to local middle-men who make a sizeable profit. The value chain analysis also shows very high percentages being made between the markets in Karamoja and those outside (e.g. Mbale). Serious attention to livestock marketing would greatly improve the value of herds. Essentially this is of importance both to development and humanitarian actors. On the one hand, increasing the price herders receive would increase their income very significantly. This would be of most benefit to those able to sell the most animals. At the same time, in years of difficulty it would reduce the number of animals that a household needed to sell in order to meet its basic needs. This would reduce the size of a "sustainable herd", meaning that many more households would have sustainable herds, i.e. large enough to sell off more animals in a bad year without undermining the long term viability of the herd. This is of most importance to the poorer households. Livestock marketing interventions are therefore an area deserving of serious study for humanitarian actors, as well as for development actors.

One final market that could be changed is for milk and dairy products. Herders in the agro-pastoral zone who live closer to urban centres enjoy the possibility of selling milk. This income is important. Even the 'poor' households (5-10 head of cattle in total) earned around 40,000/= roughly enough to buy grain for a household for one month. If pastoral households had this possibility, it would make a significant contribution to their food security, adding around 10% to the total annual cash income of poor households. The fairly recent development of a milk market in the agro-pastoral area shows clearly that economic development is possible within a so-called "traditional" pastoral system. It is clearly not necessary (or advisable) to introduce completely new and inappropriate techniques, such as zero-grazing, in order to develop a milk market. Kenyan pastoralists have shown that developing a sizeable export market of camel milk to the US is possible within "traditional" pastoralism.

d) Rangeland management and security

Economic development can best be brought about if social harmony brings both greater security and the prospects of improved rangeland management. Insecurity affects people's lives both directly – it is the major threat to food security at household level – and indirectly, resulting in lower prices received for traded goods. Nalule's study of social organisation around land management shows that there are very weak hierarchies within each 'group' (Jie, Dodoth, Matheniko, etc.) above *manyatta* level. In other words if a group of elders of one 'group' makes an agreement with a group of elders of another 'group' there is no structure for enforcing that agreement on any other elder from a different *manyatta* even within the same 'groups'. Equally, if a *manyatta* decides to put aside some grazing land as a dry season reserve, it cannot enforce this on anyone else. Since its dry seasons reserves are on land owned by the group and not by the *manyatta*, what is needed is a social structure at the level of the owning group which can enforce its own rules amongst all its members. If this exists at all, it is so weak as to be marginal.

Until such structures are created and supported and accepted by the members of each group as legitimate with legitimate authority to enforce rules accepted by the groups' members, then work on conflict resolution, peace building and on rangeland improvement are almost certain to be of short-lived and marginal impact. Nalule's findings would suggest that agencies looking to support peace are not focussing their efforts on establishing the preconditions for their work to succeed. Current efforts take the form either of military intervention and disarmament or peace meetings. No serious observers expect the disarmament approach to have promising long term prospects for bringing peace. Equally, bringing peace to Karamoja will be a decades' long endeavour that begins not with 'peace meetings' but with supporting the social organisation within the respective social/ethnic groups.

Other development possibilities

The food security of the population of Karamoja could be improved by giving them income (of cash or food) in one of four ways: from livestock; from crop agriculture; from complementary activities; or from formal employment, inside or outside Karamoja.

a) Livestock income

This has already largely been discussed. There is scope for increasing the economic value of a herd by at least 20-30% through fairly simple interventions in livestock and milk marketing.

A major constraint to herd productivity is currently the lack of freedom of movement of herders. The stress which this places on a herd is well known and already documented – reduced feeding times and lower milk production; increased disease transmission; and the combined impact of the two, increased morbidity and mortality of animals whose resistance has been reduced. Where herds are kept together and guarded by military personnel, there is also a direct loss to households of the milk which they are unable to collect and use. Where access to this milk is lost, it is a large economic loss to families and it reduces their food security directly. Restoration of freedom of movement would bring a dramatic rise in food security, though it is currently rarely discussed as a humanitarian issue.

Current reproduction rates, especially of small stock, are much lower than they should be because of abortions and high mortality. Veterinary experts believe that the majority of the abortions and deaths are caused by easily preventable or curable diseases. Herders have shown that they are very willing to pay for good veterinary services. If services were put in place, the reproductive rate of a herd could be increased: for cattle by over 25% and for goats by over 100%. The implications for development actors are obvious. The implications for humanitarian actors are just as important. Action to prevent abortions and mortality would allow a poor household to sell several more animals **without depleting their herd**. At very conservative assumptions, including of prices, excess mortality and abortions cost a poor household the number of animals which, if sold, could purchase food for a household for around six months. It would be a fairly simple matter to compare the cost of establishing good veterinary services with that of providing food aid for six months, though this is a calculation that is beyond the scope of this study. (This is the "humanitarian benefit" calculation only: the full economic benefit of proper animal health care would of course be far more than this, especially considering the

benefits to larger herds.)

It is probable that herd values and income could be increased by some changes to herd management practices. This was beyond the scope of this study to examine. Simple 'quick fixes' such as the introduction of so-called 'improved' breeds of animals are almost certainly irrelevant at best and potentially risky, until the current breeding and selection practices of herders are studied and optimised.

Support to the introduction of camels – already happening slowly – would be of great benefit in some areas. Camel milk would make a sizeable contribution to food security, since the milking season is much longer than for cattle (and, of course, milk yields per head are higher).

b) Crop farming

Rain fed crop farming is already exploited by the population of Karamoja, even most of those who think of themselves as pastoralists. The potential to improve yields within existing farming systems was beyond the scope of this study. The caution remains that rain fed crop farming is a high risk venture with a significant probability of complete failure on regular basis. It makes sense as a secondary activity, if carried out with no investment and minimal time investment or when there are few other economic uses of time (i.e. opportunity cost of time is very low). Only those capable of risking losing everything over successive years can gamble on rain fed agriculture in a serious way, outside the agricultural belt. **The evidence of the field research is also very clear, that, contrary to a widespread misconception, crop farming in the agricultural belt is less secure as a livelihood than pastoralism in the dry belt, even for the poor.** The returns on rain fed crop farming can almost certainly be improved. However, it should be noted that this is true of rain fed farming across Uganda and most of sub-Saharan Africa, and decades of agricultural research, extension and NGO projects have not yet succeeded in making a transformation. The idea that Karamoja should be the targeted area for success is not one founded on any empirical evidence.

Irrigated faming does have some potential. Technical options for small-scale irrigated farming from rain water harvesting have been explored in the KALIP report. This study did not look to repeat the in-depth work already carried out by these experts. A strategy of building food-security through investment in this area, though, rather than by investing in livestock, would need to consider two further questions: which one gives the greatest and quickest return on the investment? Which one is more likely to be taken up quickly (where consideration of what people are already doing would be relevant)? It is likely that investment in livestock herding would be advantageous for most people on both counts. This does **not** argue against investment in rain water harvesting as a complementary activity, particularly for those with the smallest herds; and those with a more peri-urban livelihood.

Larger scale irrigation may be possible from a technical point of view, but it would be hard to understand why anyone would choose this as a strategy for improving the food security of agro-pastoralists and pastoralists in an environment extremely favourable for pastoralism. The drivers of large scale irrigation are often from those individuals who seek to gain economic advantage from exploiting the land currently used as rangeland by the local population. Everyone who has been involved in large scale irrigation schemes knows that they are many

times more complex than simple technical considerations would make it appear. Social organisation and the ability to maintain the systems would be a tremendous difficulty. It is not really possible to justify any support for this idea from the point of view of the food security of the local population.

Almost certainly, the most cost-effective and culturally appropriate way into this area would be through low-cost and zero-maintenance infrastructure such as sub-surface dams and sand dams. These would enable small communities to have closer access to water for their households, for their livestock, and they would support both higher value fruit and vegetables and also some fodder crops and fodder trees. Much could be grown by exploiting a higher and more reliable water table rather than by having to water crops. If their siting was undertaken together with the local communities, rather than only by the technical experts, they could be made in such a way that was compatible with a pastoral livelihood and lifestyle, i.e. they would remove the often presented opposition between 'improved farming through settlement' and 'pastoralism through herding on the rangeland'. . This study did not undertake an economic analysis of such an investment, but the return on capital would appear to be immense. Since these kinds of structures hold water in the soil, they also help support crops when rainfall occurs but in an irregular way. They would therefore be a major contribution to DRR/DRM and potentially climate change mitigation. If the Government of Uganda "food security programme" for Karamoja genuinely seeks to improve the food security of the local population, it is hard to see why these would not feature highly.

c) Complementary livelihoods

Although these are sometimes referred to as 'alternative livelihoods', it should be made clear from the outset that the study team, including all the individual consultants and the HEA field research team, understood this as what is better termed 'complementary livelihoods', that is, alternative sources of income to complement (agro-)pastoralism and not alternatives source to replace livestock keeping.

It was not the intention of this study to undertake a full financial analysis, technical and feasibility studies, etc of many specific possible income sources. Rather, the study sought to explore where people are currently looking to complement their livelihoods and where there is a justification for investing further attention to carry out such studies. Ondoga's research highlights a number of key conclusions. His analysis of specific activities will not be repeated here, but the broader lessons should be re-stressed:

First, local people are already looking to take advantage of opportunities. (The household economy field research shows that activities complementary to livestock and crop farming are about 20% of the cash income of the pastoral poor, and over a third of the cash income of the poor in the agro-pastoral areas, where access to markets is better.) Those who do not engage in complementary activities are largely those who do not have to. It was also interesting to note how women from all wealth groups can be interested in complementary activities, since in some sense they see themselves as all being poor – in a society where wealth comes from cattle, which is controlled by men, and an increase in cattle is frequently used to increase the number of households (wives) that the herd must support. (In other words, a man may be considered "rich" if he is the head of many, poor households.)

Second, people know how to take advantage of opportunities, but marketing of products is often

the bottle neck to economic progress. This finding should guide any further investment in this field: external support should look to identify and solve specific bottlenecks and see itself as "teaching people how to make money from...". If support were given to people, building on what they already know how to do, by helping them find better markets and to produce for the market, a significant contribution could be made to their food security. **It would also be possible as a short term humanitarian intervention to directly provide such a market,** for example for processed aloe sap. This could provide many people with an income that would be enough to guarantee the food security of a household over a difficult period, as an alternative to food aid or cash-for-work. It should go without saying why such support would be vastly preferable from so many perspectives – and vastly cheaper! – than running cash-for-work projects.

Third, there is great economic potential in sustainable exploitation of the rangeland – gum Arabica, aloes, tamarind, honey, etc. Any investment in improving the rangeland will not face technical problems and will not need to 'sensitise' people as to the importance. However, it will face serious problems from land ownership issues. The law clearly gives the Karamojong full land rights (i.e. ownership rights) over that part of the rangeland which is not yet gazetted. The rangeland is private property, shared by the community of people who, by local custom, would be entitled to exclude others from using it. However, these rights seem not to be respected and are in fact not even recognised as existing by Government, local Government, or by most agencies working in Karamoja. This is a very dangerous state of affairs[8]. Only when specific Karamojong communities know that a certain area of land is for their exclusive exploitation and when they have a level of social organisation that operates at this level which is capable of sanctioning its own members who fail to obey their own natural resource management rules, can serious investment in improving the rangeland be considered. Investment in creating this state of affairs would be a huge contribution to the long term food security of the population of Karamoja.

d) Formal employment

Education levels in Karamoja are still very low, and formal employment opportunities are few. In the long term, transforming this situation may be a necessary strategy for economic development. However, this will be a process taking 20 years or more, particularly for education to bring economic benefits. As such, it is not relevant as part of a short term humanitarian food security strategy or a mid-term livelihood support (DRR) strategy.

What to do when the rains fail? A humanitarian strategy for Karamoja for drought

The question which most humanitarian agencies worry about is: what should they do when the rains fail in Karamoja?" The first observation is that this is necessarily the wrong question, as will become more explicit below. Any actions which begin after the rains have already failed will

[8] It is potentially dangerous for an international agency and even a donor. If a settlement is created on non-gazetted rangeland, that is actually the private property of herders (though they do not know it), they could potentially sue any organisation involved in creating the settlement. A donor may have to be able to prove that they did 'due diligence' in attempting to establish that there were no such land rights before financing the project. Such due diligence, is of course, not being carried out at present.

almost certainly be too late. The question that agencies must ask is: what should they be doing now, in order to start gearing up to act if the rains are predicted to fail?

Livelihoods in the agricultural zone are not much more vulnerable to rain failure than are agricultural livelihoods in neighbouring parts of Uganda. The rains rarely, if ever, fail completely, except in one or two micro-ecological zones, such as Nyakwae sub-county (which sits in a rain shadow). Household economy analysis was carried out specifically in this sub-county previously and the conclusion was very clear and unsurprising: livelihoods were well adapted to the prevailing climate and people were food secure. In times of harvest failure, they had other options which they used successfully, including, agricultural labour outside the sub-county, exploitation of bamboo forests, etc. Household economy modelling ("outcome analysis") clearly showed that coping mechanisms were adequate and there was no food or livelihood deficit even if crop harvests were removed. The rest of this section will therefore concentrate on the agro-pastoral and pastoral zones.

When (agro-) pastoralists need food, they buy it. In order to get the money to buy it, they sell livestock. This is the simple truth of the basis of the Karamoja economy. When the rains fail and crops fail, it is almost unheard of for pasture also to suffer badly in Karamoja (unlike in the Kenyan arid lands). Relief aid will therefore only be necessary if food prices are exceptionally high, if livestock prices are exceptionally low or if livestock production is very badly hit (e.g. by some epidemic or by further restrictions on the freedom of movement of herds). If relief were to be necessary, the obvious way to support the food security of the population is by support to the ways in which they currently gain access to food. This means, supporting their ability to buy food from their herds.

Food insecurity would become evident if herders were engaged in distress strategies in order to gain food, i.e. engage in activities which have potential long term negative consequences to their well being. The main danger is that they are forced to sell too many animals from their herds to buy food, rendering their herds unsustainable. It is normal for pastoralists to deplete herds during bad years: that is exactly why they are concerned to build up the herd size in good years, since that is the whole point of the herd. It is not easy to gauge at exactly what point sales become 'distress'. However this point can be 'shifted' markedly by; a) improving the price which herders receive for their animals and b) increasing the reproductive rate of the herd. The poor rely largely on goat sales. Goat reproduction is low because of abortions and disease. In a "bad year", the poor could sell six or seven more animals a year than in the reference year without endangering herd sizes if kidding rates were more normal. This probably requires a programme of vaccinations, ideally linked closely to effective and efficient veterinary service delivery and improved livestock management practices. [Note: this study did not include a veterinary study. It uses the opinions of vets consulted which should be verified in an independent study.] At current prices (2010), this would bring in 240-280,000/- ($110-130), or enough to buy grain for around 5-6 months. **An animal health programme capable of bringing about normal kidding rates for an environment such as Karamoja would give the same benefit to any household owning at least 25 goats as a 100% food ration for 5-6 months** (and a lot more to households with herds bigger than this)**.**

However, vaccinations must be carried out before conception; otherwise, the vaccination itself may be harmful to the pregnancy. The peak conception times are March and September. An abortion control programme would thus have to take place in January and July/August. Although the direct benefit of a prevented abortion would not be economically realisable for 18 months, a

January intervention would allow a herder to make more sales in November –December of the same year (i.e. after a failed harvest) in the knowledge that replacement animals were already growing. It is essential to consider though that the timing of such an intervention does not depend upon the food security calendar but on the 'livelihood calendar', i.e. the seasonal cycle determined by livestock management.
A second intervention could be a direct market intervention to improve the price which herders receive for their animals. Conducted as a short-term humanitarian intervention, this could increase the poor households' ability to buy food by around two months worth of food. Combined with the animal health programme (i.e. a higher sustainable level of sales), it could add purchasing power for three months of food.

Clearly, these two interventions would better be run as long term structural programmes and not as short term relief interventions. **This again highlights the need to redirect economic development activities. Most current development plans and interventions, such as OPM's food security programme, do not focus in these areas, or, like KALIP, make it a secondary focus. It is very difficult to understand why the activities which would do most to ensure food security for the population of Karamoja are so poorly supported, if supporting their food security is indeed the objective.**

Do no harm?

Many agencies prefer to err on the side of caution. If crops fail, then perhaps, it is argued, some people will go hungry and in order to prevent the possibility of hunger, it is better to give relief. Although this argument would appear reasonable, there are many difficulties in adopting it. First, it makes the assumption that handing out relief does not have negative consequences, so any negative implications of withholding relief aid are not set off against the negative consequences of giving relief. Once this is appreciated then the calculation becomes more serious, for we have to set off the **possible** negative consequences of withholding aid with the **certain** negative consequences of giving it. The negative consequences of having given out relief aid[9] every year for decades are multiple.

The most neglected consequence is that pastoralism is now presented as unviable, a "hopeless case", as livelihood system only propped up by relief aid and therefore one that has no right to claim support. This is a very common perception of pastoralism now, supported by the observation that "Karamoja has needed food aid every year for decades". In fact, this is simply not true. Karamoja has received food aid every year, but there is no evidence that it has actually needed mass food aid for many years. Most observers, including most people working in development in Karamoja do not believe that food aid has been necessary in most or all of the years in which it has been given. (Many called it a "political famine", i.e. a famine invented for political purposes.) There are those who are not economically independent in Karamoja, just as there are in the rest of Uganda (and the rest of the world). The need for social protection systems in Karamoja for these "vulnerable" individuals and households is real and urgent - , but this is not the same as saying that the livelihood system is broken. Those who need help are not the pastoralists, but the drop-outs, who live around the urban areas or who have been enticed into settlements. The consequence of the belief that pastoralism is no longer viable is that it is not being supported. The vast majority of livelihood support going into Karamoja is for settlement and not for livestock herding. This is a human tragedy and an economic mistake. The evidence from the actual facts about livelihoods clearly shows that livestock herding is viable, highly resilient and that with some support (vet services, marketing) it can be made even more profitable. Any agency supporting relief in Karamoja needs to consider the extent to which it is acting on preconceptions about the needs of "the Karamojong" and also the extent to which it is helping to perpetuate such a misconception. [Note: this is one, more subtle, advantage to giving any needed food security support by helping with direct marketing of products such as aloe sap, etc. This would be seen as supporting activity and not as supporting the inactive.]

Relief aid has certainly brought, or added, a degree of corruption to Karamoja. Food aid is clearly recycled back through the commercial networks, which are partly driving demands for food aid, in order to feed their commercial activity (i.e. exporting cheap food from Karamoja).

This study did not attempt to quantify the degree of dependency which has been created by an annual supply of relief, but few dispute that the local initiative of some has been degraded by constant relief. The idea that when aid is made conditional upon donating labour it does not

[9] Except for the specific point dealing with food aid, the observations below do not depend upon the type of aid given, whether cash or food. They are about whether or not relief aid should be given, and not about the type of aid that is most appropriate.

have this impact is not based on any evidence or logic.

The local economy in Karamoja does need substantial help – it has been marginalised for many years. When the actors involved in assisting are all taken up with relief that may not be needed, much needed development activities are consequently neglected.

There are some specific consequences which will depend upon the type of aid given. Food aid will tend to depress local food prices and cash aid would tend to push these up. Since cash aid has never been given on any large scale, problems have not (yet) been seen. This study did not try and calculate the impact upon agricultural production that was caused by the effect of constant food aid on the prices which producers in Karamoja receive for their produce. There is much anecdotal evidence that many have been discouraged from investing in production, though this study is cautious in general about the reliance which it places on anecdotal evidence.

There will always be those calling for the need to hand out relief. Care should be taken to analyse closely the motivations of those doing so – which may be economic, political etc. **Recent studies which have been used to show that relief aid for food security was necessary did not consider or attempt to calculate households' ability to purchase food from the sale of livestock.** No food security assessment in either the pastoral or agro-pastoral zones can be considered as meaningful which ignores the main income/livelihood source of the majority of the population. Any household with 7-8 cattle, of which just 2 were milking, could cover half their food needs from milk during the six months immediately preceding the next harvest following a failed harvest – what would normally be considered the 'hungriest' time. (This means almost everyone in the pastoral zone and two-thirds of the households in the agro-pastoral zone). Again, these calculations must be included for any food security to be meaningful.

Early warning and contingency planning

A process has of training in early warning analysis and contingency planning has run in parallel to this study. Only three observations will be made here.

First, if, as we argue, Karamoja is not really prone to regular humanitarian catastrophes caused by drought, and if, as the evidence shows, households can cope with natural climatic hazards without humanitarian interventions, then a focus on "early warning" rather than on development support is unfortunate, and a focus on early warning for natural hazards (i.e. drought) is inappropriate to the needs of the local population. (The differences between Karamoja and pastoral areas in Kenya or the rest of the Horn of Arica must be stressed.)

Second, any early warning system must combine three key features;

- It must measure what is important, in this case to food security
- It must give advance (early) warning of impending problems, and not merely report what has already happened
- It must be linked to (early) response.

The livelihood profiles indicate the parameters which are important to the livelihoods of the agro-pastoralists and pastoralists. These are:

1 freedom of movement / security
2 livestock diseases

3 livestock prices
4 birthing rates
5 grain price
6 milk price (also as a proxy for milk yields)
7 availability of work
8 crop yields

Early warning implies that the analysis is predictive. Use of the livelihood profiles and the accompanying spreadsheets will allow actors at every level (local, district, central, international, etc.) to make transparent predictions in scenario development and thus to make predictions about the likely state of food security in months ahead. Because this will be on the basis of transparent scenarios, other actors can either agree or disagree in a constructive way.

Third, contingency planning and early response can only happen if there is a coordinated strategy based on a shared analysis of livelihoods and impending threats to those livelihoods. This will only be possible if pastoral livelihoods can be analysed in a way free of politicisation and preconception and based solely on objective evidence. This has not previously been the case. It is hoped that the accompanying livelihood profiles can go some way towards providing a focus for this to happen.

It is also hoped that the contingency planning training that followed the shared analysis behind this report will help support that process. The contingency planning training uses the crisis calendar approach, which is one that analyses livelihood support in the context of the livelihood calendar as it is predicted to develop in the impending crisis. Support to livelihoods is thus not designed on a timetable dictated by considerations such as childhood malnutrition levels, which are actually irrelevant to the livelihood interventions themselves. Crisis calendar analysis promotes objective and transparent strategy development that will support timely intervention to prevent crises, and hence prevent the need for life-saving aid.

Conclusions and recommendations

The dominant perception of Karamoja within government, the civil service and among development partners is that Karamoja is a) extremely poor, b) livelihoods in Karamoja are very vulnerable to frequent droughts and c) pastoral livelihoods are not viable in the long term. The evidence shows that in fact these three beliefs are almost the exact opposite of the truth. As a result, both humanitarian and development aid policy and practice are being guided by fundamental misperceptions and misrepresentations of the truth. Unsurprisingly, the consequences of this are serious.

Livestock-based livelihoods remain the best economic mainstay of households in Karamoja. They are viable and are the most resilient to natural shocks.
Support to the settlement of agro-pastoral and pastoral households is counter-productive, if the objective is to improve their food security. Large scale settlement of semi-nomadic livestock herders will almost certainly create 'artificial droughts' – i.e. food crises in years of poor rains, where previously herders would have had no serious food security problem.

Karamoja needs long term DRR support and long term development support, and not short term humanitarian relief.

There are a number of low cost measures which could be run as DRR initiatives which would have a huge impact on the livelihoods of the majority of population of Karamoja.

A longer term economic transformation of Karamoja can only happen when difficulties issues are tackled: the land rights which State law gives to the Karamojong are recognised and respected, including over land where mining concessions have been granted; they are extended land rights over areas currently gazetted which form an integral part of their grazing areas; social organisation is supported so that there are social structures capable of making and keeping decisions made about communal activity.

The evidence overwhelming supports the conclusion that Karamoja rarely, if ever, faces the need for large scale relief. The pastoral and agro-pastoral populations are able to cope even in years of total crop failure without recourse to distress strategies. The agricultural zone rarely faces complete crop failures. There are a number of destitute people/households who cannot survive independently. This situation, as elsewhere in Uganda, needs to be addressed through social protection measures, whether State or community based, rather than by emergency relief.

Current policy towards Karamoja is skewed

It is difficult for humanitarian actors or development partners to work in a context where the policy towards Karamoja is so fundamentally skewed.

Almost none of the development needs of the population of Karamoja are being addressed by either policy or current interventions. Exploitation of economic opportunities in Karamoja, such as mining, are not being managed in a way that shows any consideration for the local populations.

Humanitarian and development actors need to be careful about the interventions they support in Karamoja, to ground these in a coherent strategy and to base this strategy on a thorough analysis of livelihoods – including the socio-cultural, political and legal aspects of livelihoods.

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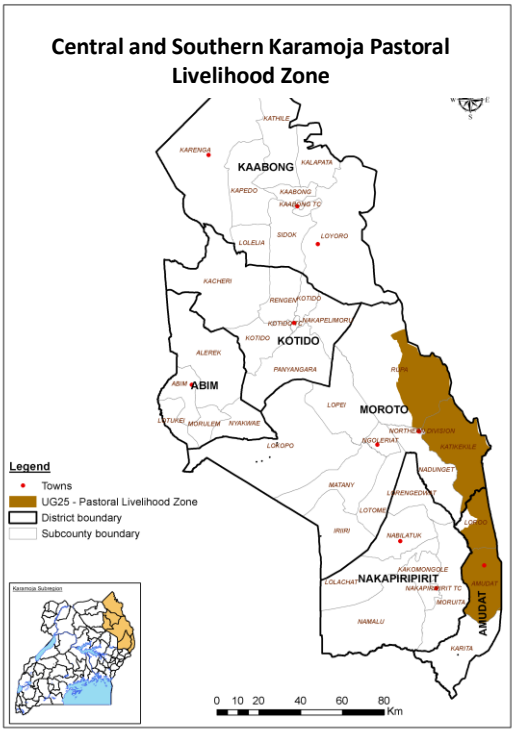
Annex 1: Pastoral Livelihood Zone Profile, Karamoja Region, Uganda

Central and Southern Karamoja Pastoral Livelihood Zone
May 2010

Zone Description



The Central and Southern Karamoja Pastoral Livelihood Zone is located in Karamoja Region and comprises parts of Moroto and Amudat districts. The livelihood zone's population is estimated at 108,100[10]. Resident tribes include the Matheniko and Tepeth in Moroto District and the Pokot in Amudat District. The zone is bordered along the east by the Republic of Kenya (adjacent to the Turkana and the Pokot of Kenya); to the west lie Moroto and Nakapiripirit districts in Uganda; to the south one finds an agricultural zone in Karita sub-county; and to the north is the Northeastern Karamoja Pastoral Livelihood Zone in Kotido and Kaabong districts. Amudat is the major town in this zone. Other trading centres within the livelihood zone are Loro in Amudat District and Tupac, Kothiroyi and Nakiloro in Moroto District. The main roads include: Rupa-Nakiloro leading to Turkana in Kenya; Moroto-Amudat-Kitale; Amudat-Nakapiripirit; and Moroto-Nakiloro. The main seasonal rivers are Kanyangara in the south, Musuba in the north and Lopei, which passes through the livelihood zone.

This is a semi-arid zone characterised by prolonged dry seasons and erratic rainfall. There is one rainy season which normally runs from April to September, leaving October to March dry. The northern and southern parts of the zone are dominated by flat plains and covered with scanty shrubs, thorns, *Balanites*; aloe vera and other hardy plants. To the east, towards the border with Kenya, patches of savannah grassland are found with limited diversity in species (for example star grass and *Napia* grass). The central parts are mountainous with thick vegetation and many seasonal rivers which run across the zone towards the west. Along the zone's seasonal rivers, big trees and forests are found. The southern parts are covered with shrubs (*Acacia Melifera* is dominant, providing good browse for camels). Gold deposits are found in the north, specifically at the base of the mountainous areas of Rupa sub-county in Moroto District. Marble mining occurs in Rupa and Katikekile sub-counties at Kothiroyi. Aloe vera, which has a broad spectrum of medicinal uses, and a wild sisal-like plant used for making ropes for tethering animals and building houses, are common in the zone. The gum arabic plant is also found, mainly in the northern part of the zone.

[10] Data from Uganda Bureau of Statistics 2002 Census projected to 2010.

Livestock production is the main economic activity, based on cattle, goats, sheep, poultry and a few camels; this is supplemented by charcoal burning, firewood collection, some honey production, limited mining and opportunistic farming. Animals are raised using a free range system on communal grazing areas, with grass, browse and very limited crop residues. There is no history of households in this zone purchasing livestock feed. Flowing rivers, ponds, dams, borehole pumps, natural water and man-made reservoirs are the main sources of water for livestock in the wet season. Dry season water is obtained from shallow wells dug by herders in the river beds and some limited deep wells free of charge. Younger boys look after the small stock, while the larger stock is looked after by strong men because of the constant risk of raiding. During the dry season, strong men migrate with the main herds of livestock, leaving lactating and sick animals behind in the care of the women, young boys, and in some instances girls (in homes without boys).

Herd replacement occurs through natural reproduction within the herd and through cattle raiding. Better off households also purchase new livestock, something that the poor and middle cannot afford. Gifting animals is not a common practice. Sick and unproductive small ruminants are slaughtered for meat during the hunger season (December to April). It is common to share the meat with neighbours and relatives rather than selling it.

There is very limited crop production in this zone, despite high potential fertile soils - sandy clay in the north and loamy clay in the south. Rain-fed agriculture is the norm, with no irrigation, which means that this potential is severely limited by low and erratic rainfall patterns. Sorghum is the main crop, but maize and pulses are also grown for household consumption. Crop inputs are not typically used. There is no cash crop production. Land is cultivated manually, by both men and women, using hand tools like hoes, machetes, and axes. Weeding is generally done by women. Crop production is more common in the northern and central parts of the livelihood zone; in the southern parts it is restricted to areas along the river. Generally oxen are not used for cultivation although limited use of oxen was reported and observed in the northern part of the zone.

Other economic activities in the livelihood zone include honey production, charcoal burning, firewood collection and the sale of aloe vera (to markets in Kenya), especially by communities in the southern parts of the livelihood zone. Bee keeping is a common practice, with local traditional hives used for the most part, and wild honey also harvested from trees and inactive ant hills. This activity is mainly done by men. Honey is harvested towards the end of the dry season and the beginning of wet season (March-April) with a smaller harvest in September and October. Honey is sold locally in the villages and occasionally in the main markets.

Small scale charcoal production occurs in areas close to main markets and busy roads that lead to areas outside the livelihood zone. Men cut down the trees and burn the charcoal; women take care of transportation and sales. Charcoal is mostly produced and sold during the hunger period (December to April) by poor and middle households. Households from all wealth groups sell firewood, with younger women normally responsible for this activity. Very few people are involved in gold or marble mining, and those who are tend to be pastoral drop outs devastated by raids, livestock diseases, and/or drought.

Water sources include rivers, wells, springs, ponds, dams and boreholes. These are shared by humans and animals during both the wet and dry seasons. People do not pay for water.
The zone is known as a food deficit zone, with food security particularly problematic in the last

two years (2008 and 2009). In most years the population relies on a combination of milk and meat, livestock sales and minimal crop production to get enough to survive, with a pronounced hunger season between December and March.

No general food distributions took place in the zone in the reference year (April 2008 – March 2009), with the exception of a few villages that reported getting a single distribution of relief food from the Office of the Prime Minister.

Markets

Livestock and livestock products are mainly sold in areas close to towns. Geographical barriers and bad road conditions limit marketing opportunities in the wet season. The rural Pokot, and Tepeth who live in the mountains, have difficulties selling their livestock and purchasing cereals due to bad roads during the wet season, lack of transport and market information, and long distances to the market. Most of the animals sold are exported from the livelihood zone and the buyers are mainly from Mbale, Soroti, and Katakwii. Imported food items such as maize, sorghum, beans and other non-food items also enter the zone via the same routes from December to May. The livestock buyers act as brokers for both livestock and food, bringing staple and non staple foods into the zone, and taking out livestock on their return.

Amudat town, Loro, Kothiroyi, Nakiloro and Tapac trading centres are the main markets found in the zone. The main market routes are: Nakapiripirit-Sirongo-Mbale; Amudat-Konayao (Kenya); Rupa-Nakiloro-Kenya; Rupa-Naitakwae-Moroto town; and Moroto-Amudat.

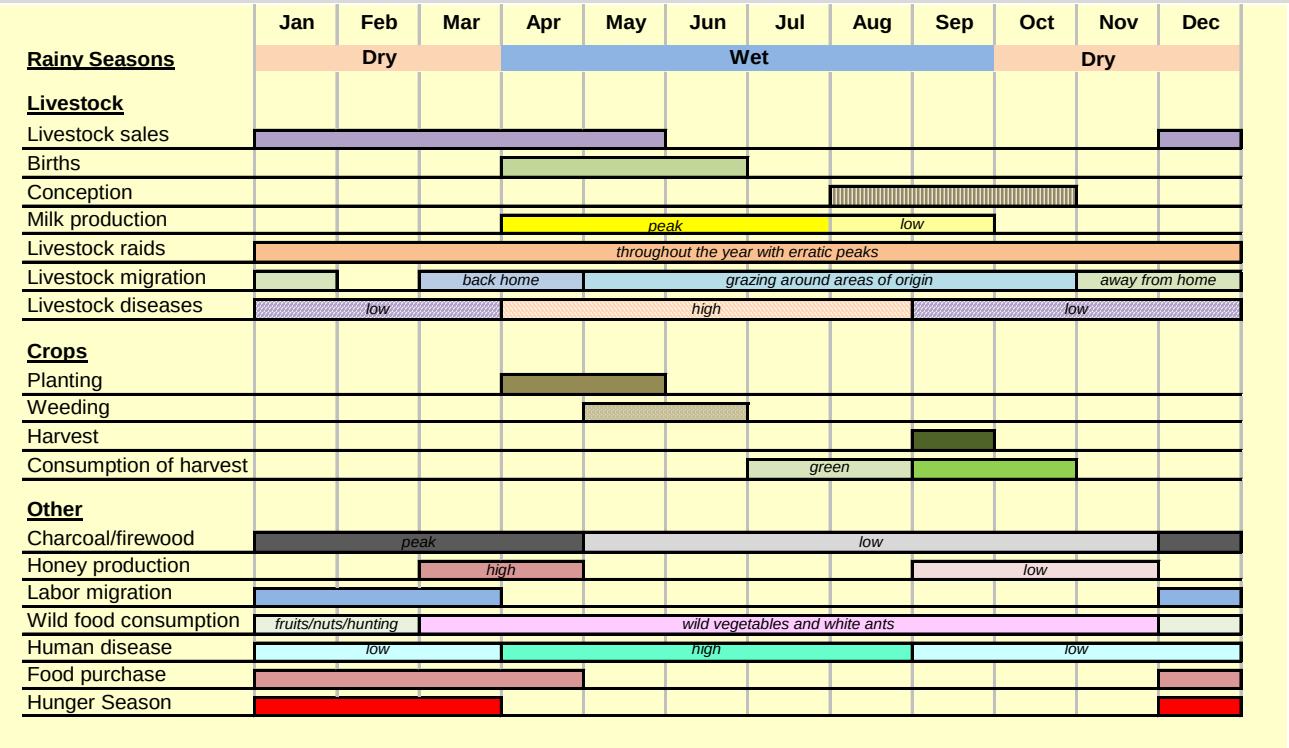
Cattle are mainly sold in the hunger period from December to April. Mature male animals, and on rare occasions, mature old and sick females, are offered for sale on the market. The middle and better off households can afford to wait to sell their cattle until they are around four to five years old, when they are worth more. Poorer households usually have to sell their animals when they are younger, up to the age of two years.

Shoats act as an immediate cash source for pastoralists and are sold any time of the year that households need to purchase goods or services, with a peak in sales during the hunger season when more grain is needed. Shoats are typically sold between the ages of seventeen months to two years across all wealth groups.

Camels are rarely sold because they are expensive to replace and not plentiful compared to the other livestock.

There is a limited local labour market, with some people in the zone undertaking agricultural labour locally for better off households and different types of casual labour in the main trading centres. Some people go outside the zone during bad years or hunger periods to Kenya and Moroto town. No people migrate into the livelihood zone for labour.

Seasonal Calendar



Although there are sporadic showers in March, the wet season (*akiporo*) proper begins in April and lasts through September; the dry season (*akamu*) begins in October and lasts through March. The main conception period for livestock is from August to October and the main calving period is from April to June/July, during the rains. Milk production is highest as the rains replenish pastures in early April and peaks from May to July, diminishing from August to October.

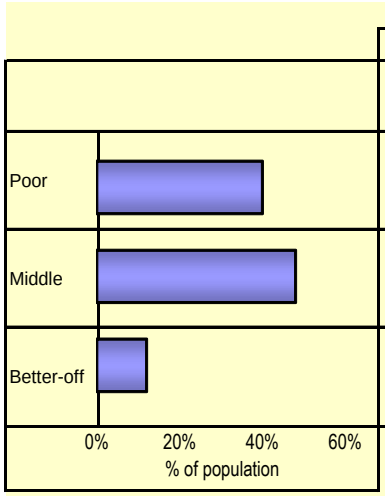
In typical years livestock migrate to dry season grazing areas in December, remaining there until March. From Amudat, livestock are taken to Karita, which is an agricultural area south of the zone. From Loro, Katikekile and Rupa sub-counties they are taken to Nakonyen, which is in the agropastoral part of Nakipiripirit District. Rupa-based livestock are also moved to Niaitai and Apule in the neighbouring agro-pastoral zones during the dry season. In bad years this same pattern is followed, but the migration begins a month earlier, in November, and livestock do not come back until at least April. In some years, migration is disrupted by insecurity as was the case in the reference year.

Land preparation begins in mid-March. Cowpeas and vegetables (including kale, okra and tomatoes) are planted between April and June and eaten green after one month. Sorghum and maize are planted in April and harvested in August and September.
Wild foods are collected and eaten throughout the year when available and are a normal part of the diet.

Livestock, firewood and charcoal sales are highest during the hunger period (December to early April). Demand for purchased food peaks at this time for all wealth groups, and livestock and bush product sales provide the cash to cover these requirements. Livestock and human diseases are high during the wet season and low during the dry season.

Wealth breakdown

Livestock ownership is the main determinant of wealth in this livelihood zone. Livestock holdings in Karamoja have generally diminished over the years for all wealth groups because of inter-ethnic conflicts (which resulted in raiding and limited access to grazing lands), livestock diseases and recurrent drought. Rebuilding herds is a challenge for poorer households, who do not have the means to pay for veterinary services, and who must sell more livestock than they can afford every year to make it through the hunger season. The better off have the means to purchase animal drugs; they redistribute herds to friends and relatives to share the burden of labour involved in livestock rearing. However, loans of animals from better off to poor, and sharing of animal products now (with the smaller herds) is relatively limited.



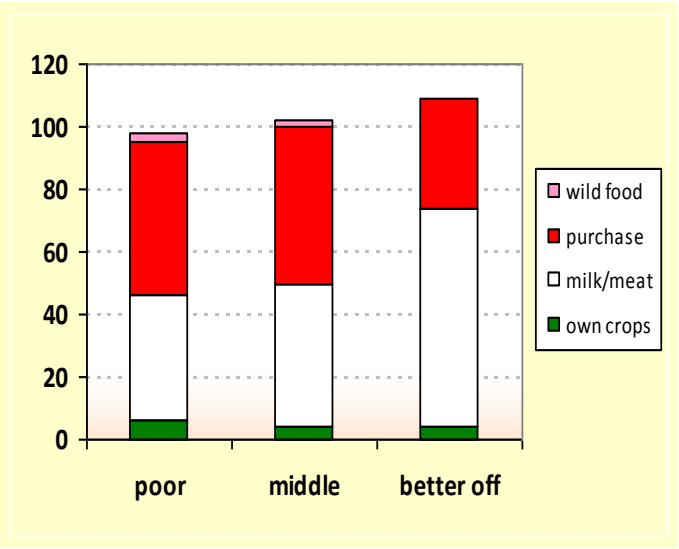
	Wealth Groups Characteristics				
	HH size (per wife)	Wives per man	Land area cultivated (per wife)	Crops cultivated	Livestock holding (per wife)
Poor	5-7	1 - 2	0.5 - 1	Sorghum, cowpeas, vegetables	5 - 15 cattle, 8 - 12 goats, 0 - 10 sheep, 0 - 2 donkeys; 0 - 4 beehives
Middle	6-8	1 - 3	1 - 1.5	Sorghum, cowpeas, vegetables	15 - 35 cattle, 20 - 40 goats, 0 - 50 sheep, 1 - 2 donkeys; 1 - 3 beehives
Better-off	7-9	2 - 4	1.5 - 2.5	Sorghum, cowpeas, vegetables	40 - 60 cattle, 30 - 60 goats, 25 - 35 sheep, 0 - 15 camels, 1 - 5 donkeys; 0 - 2 beehives

Note: Figures for percent of households in the above table represent midpoints not absolute figures. All figures refer to a household headed by a woman.

All three wealth groups grow the same types of crops. Poor household crop production is limited by inadequate labour within the household and insufficient cash to hire labour and to purchase inputs. Better off households are able to mobilise large labour parties to help them carry out agricultural labour in exchange for beer; some middle and better off households in the northern areas of the zone use oxen. But all households are equally constrained by poor rainfall and lack of crop extension services.

Sources of Food – A bad year (2008-09)

Households in this livelihood zone rely on four main sources of food: own crops, milk/meat, purchase, and wild foods. The graph to the right shows the relative importance of each of these sources in the reference year, a bad year for crop production by local standards.
Crop production was negligible in the reference year and households only consumed what they could obtain from their green harvest, which covered less than a month of annual food needs.



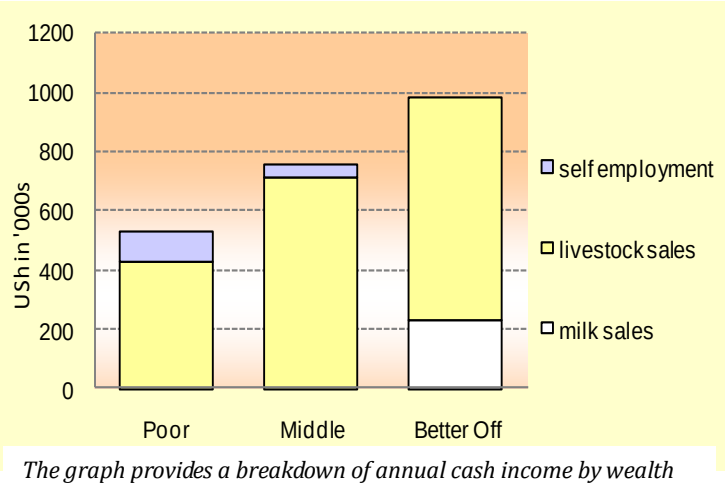
In the graph, food access is expressed as a percentage of minimum food requirements, taken as an average food energy intake of 2100 calories per person per day.

Milk is produced and consumed throughout the year. Poor households milk an average of four cows and seven goats or sheep; middle households have around five milk cows and fifteen milking goats or sheep. The better off rely on around seven milking cows and twenty-seven goats or sheep; some of the better off also have one to two camels that they milk. All the milk produced is consumed except for small amounts sold by better off households living near the trading centres.

Meat is not regularly consumed by any wealth group, although animals that are sick or die from natural causes are eaten. In the reference year, with higher livestock deaths than in a good year, this translated into around one cow and two shoats for poor households, two cattle and seven shoats for middle households and three cattle and ten shoats for better off households. Consumption of blood was not reported during the reference year, because taking blood in a below average year puts too much stress on the animals. However there are reports of blood consumption during good years and sometimes during festivals.

There is some hunting of small animals, and wild foods and honey are also collected, although these do not contribute too heavily to the annual diet. Wild foods are consumed as a normal part of diet and not just as a coping strategy. School feeding only took place in a few schools which were functioning in the reference year and its contribution was negligible.

Sources of Cash – a bad year (2008 - 2009)



The graph provides a breakdown of annual cash income by wealth group.

Annual income (USh)	454,500 – 580,000	702,000 – 790,000	940,000 – 1,300,000

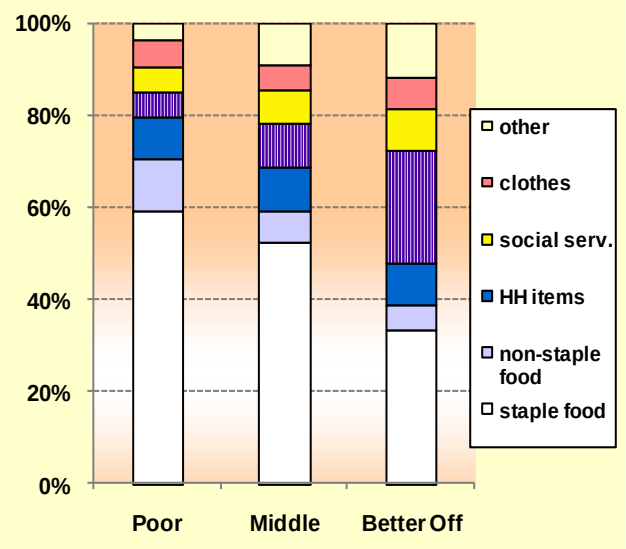
Livestock sales are the most important source of cash income for all households. Better off households also sell some milk to town centres. Poor households end up selling their livestock at lower prices, in part because they are forced to sell before their livestock reach the age at which they would garner the most money, and in part because they do not have the means to keep their livestock in top condition.

Formal employment is not common.

Poorer households are actively engaged in charcoal making, firewood sales, and other forms of self employment, such as honey and aloe vera sales. There is mining in limited areas. Casual labour such as fetching water and housekeeping is done in Moroto and Amudat towns by members of poor and middle households who live near the trading centres.

Expenditure Patterns – a bad year (2008 – 2009)

Staple food purchase comprises a large proportion of all wealth groups' total expenditure. Sorghum and maize are the main staples bought. Poor households spend almost seventy percent of their annual income on food (staple and non-staple), which is a higher proportion than the other wealth groups.
All wealth groups purchase the same types of household items (salt, soap, utensils, etc.). Better off households spend three times more than poor households on inputs, largely in the form of livestock drugs. Primary education (under 'social serv.' in the graph) is free, but those who had children in school still had to pay for uniforms and other scholastic materials.



The graph provides a breakdown of total cash expenditure according to category of expenditure

Some middle and better off households send one or more child to a secondary day school. Although health services (also under 'social serv.') are free, households across all wealth groups spent cash on drugs that were not available in the health centres. It was only the better off who purchased animals to replace those that died. A large portion of cash income for middle and better off households was spent on local beer and tobacco (under 'other'). Expenditures on festivals and transport were not common in the reference year as it was a below average year.

Hazards

The hazards affecting livelihoods in the zone include inter-ethnic conflicts, livestock diseases, drought, human diseases, crop pests and wild animals.

Since successful livestock production in arid areas is highly dependent on mobility, **conflict** can be a damaging hazard.

Livestock diseases are another common hazard, negatively affecting herd numbers and the productivity of all livestock types. Specifically, tick born disease, worm infestation and foot rot affect all livestock; *contagious bovine pleuropneumonia* (CBPP) afflicts cattle; *contagious caprine pleuropneumonia* (CCPP) and *peste des petits ruminants* (PPR) are the main threats for shoats, along with mange, which also affects camels. The main methods used to treat these diseases are spraying, drugs such as *acaricides* for external parasites, de-wormers for internal parasites, antibacterial for bacterial disease and vaccinations for viral diseases. These are provided by NGOs and the government free of charge and are purchased from the local markets for cash.

Drought is another common hazard, with obvious negative consequences for both livestock and crop production. It is reportedly becoming increasingly frequent, which reduces the ability of the population to recover in between bad years.

Human diseases can have a damaging effect on labour availability at household level. Malaria is

particularly problematic in this part of the country.

Sorghum *ergot* (honeydew) disease, *Striga* weed and birds are the main **crop diseases and pests** affecting sorghum and maize crops. There are no reported methods of treatment and prevention; however birds are scared off by small children in years when the harvests are good.

Coping Strategies

Common household response strategies to deal with hazards include the following. Most of these strategies are not new and are already being exploited to some extent.

Switching of expenditure – Reduced expenditure on non-essential items and on more expensive food items is a strategy pursued by all wealth groups in bad years, so that they can purchase cheaper staple foods like maize and sorghum.

Increased bush product collection and sale – The sale of firewood and charcoal is intensified in bad years. The environmental implications of this strategy are likely to be damaging.

Labour migration – Members of poor and, to some extent, middle households travel to the main urban centres to look for casual work in very bad years. From the southern half of the livelihood zone (where the population is Pokot), household members move to Konyao (in Kenya), Mbale and Tororo. From the northern half of the zone, individuals move to the agricultural areas of Nakapiripirit and Napak Districts and to major towns like Mbale, Tororo, Soroti and even Kampala.

Increased livestock sales – Households from all wealth groups sell additional livestock to cover food and other essential purchases in bad years. Livestock sales serve the dual purpose of increasing income to cover basic food and non-food expenses and of destocking to reduce the pressure on pasture and browse and to reduce the expenses required to maintain the herd (in terms of livestock drugs). However, the extent to which this strategy of increased livestock sales can be pursued without damaging future livelihoods is quite limited. Middle and better off households are in a better position to exploit this strategy.

Increased reliance on crops and farming – The diversification of livelihoods into agriculture has been a mid- to long-term strategy in some livelihood zones to cope with the damage that successive years of drought and livestock disease have inflicted on livestock herds.

Increased consumption of wild foods – Most households collect and consume wild foods in normal years. In bad years, households increase the amounts collected and consume them over a longer period of time. A large number of wild nuts and fruits[11] and at least one wild root[12] are available in the livelihood zone.

[11] These include *ebeei, engomo, ngimago, epodo, ekaliye* and *edapal* in Karamajong and *sitil, amodo, makow* and *kinyat* in Pokot.

[12] Called *sipi* in Pokot.

Key Parameters[13]

The following are the key parameters – or significant aspects of the local household economy – that need to be monitored every year:

Item	Key Parameter - Quantity	Key Parameter – Price
Crops	Sorghum Maize Cowpeas	
Livestock production	Cattle (changes in herd size) Shoats (changes in herd size) Milk (changes in yield)	Cattle Shoats Milk
Other food and cash income	Agricultural labour Charcoal Firewood Aloe Vera	Labour rates Charcoal Firewood
Expenditure		Staple food (cheapest)

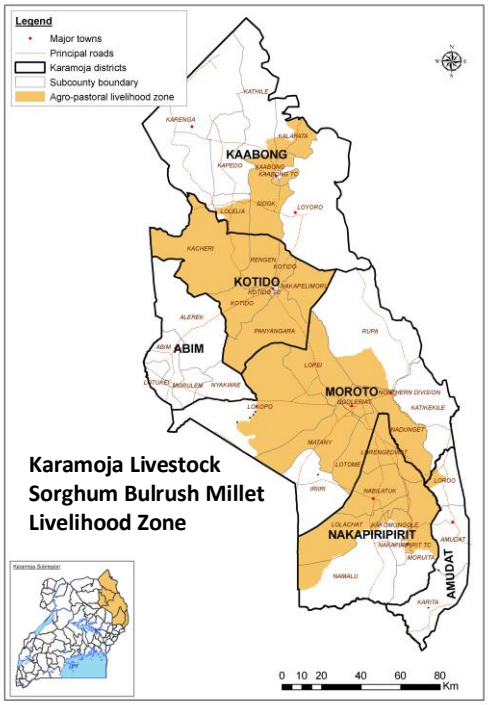
[13] Key parameters are food or income options that make up at least 5% of any two wealth groups' annual sources of food or income; or 10% of any one wealth group's annual food/cash income.

Annex 2: Agropastoral Livelihood Zone Profile, Karamoja Region, Uganda

Karamoja Livestock Sorghum Bulrush Millet Livelihood Zone[14] May 2010[15]

Zone Description

The Karamoja Livestock Sorghum Bulrush Millet Livelihood Zone is the agropastoral area that stretches through the central part of Karamoja Region from the border of southern Sudan into the northern part of Nakapiripirit; it includes parts of Nakapiripirit, Moroto, Kotido and Kaabong districts in Karamoja Region. The Karimojong, Matheniko, Pian, Bokora, Dodoth, Tepeth and Jie all occupy the zone, with an estimated population of 613,300.[16]



Grasslands with scattered shrubs and acacia trees cover the landscape. Soils are predominantly sandy loams (*ekitela*), with some black clay (*aroo*) soils. Sandy clay alluvial soils are found in the valleys and plains. Undulating plains with seasonal rivers and gullies are typical in the southern areas of the zone; northern parts in Kaabong are hillier. Seasonal rivers include Nabilatuk and Lolachat in Nakapiripirit; the Omaniman River in Moroto and Nakapiripirit; Lopei and Nadunget rivers in Moroto; and Dopeth and Komuria in Kaabong and Kotido districts.

The rainy season is from March to September and is less reliable than in western parts of Karamoja Region, with an annual average of 500-800 mm. Areas of higher elevation receive more rainfall than in the plains. It is typical for a short period of dryness to occur during the rainy season, especially in the months of June and July.

The zone is highly dependent on livestock and is renowned for its livestock production. Cattle, goats, and sheep predominate, with some poultry. Donkeys are used to provide transportation in rural areas, especially to take goods to and from markets. According to the livestock census[17] carried out in 2008 and published in 2009, Nakapiripirit District was recorded as having the highest number of goats in the country, followed by Kotido and Kaabong districts. Karamoja sub-region as a whole registered 19.8% of the total national cattle population, and Kotido recorded the largest number of sheep in the country. Cattle are milked by the men and youth; sheep and goats are milked by children under the age of 18. Women raise the poultry and care

[14] In the FEWS NET livelihood zoning workshop of 2009, this was recorded as UG23.
[15] Field work for the current profile was undertaken in May 2010. The information presented refers to August 2008 – July 2009, a relatively bad year by local standards (i.e. a year of poor crop production and rural food security, when judged in the context of recent years). Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2015).
[16] (Kaabong District: 173,700; Kotido District: 183,100; Mororto District: 181,700; and Nakapiripirit: 74,800) Uganda Bureau of Statistics (UBOS) 2002 Census, projected to 2010.
[17] A summary report of the 2008 national livestock census – May 2009 – Ministry of Agriculture Animal Industry And Fisheries (MAAFS) and UBOS.

for the sick and milking animals that are left behind during the dry season livestock migration. Free range grazing is practiced for all livestock types. The government established the protected kraal system in 2005/2006 as a response to insecurity emanating from cattle raids by different groups. The system entailed keeping livestock in kraals protected by government forces during the day while grazing and at night in the kraals. As of 2009 the program was disbanded because of numerous problems related to restricted grazing hours, distances to grazing areas, and concentrations of livestock leading to increased disease outbreaks and deaths. Now herders generally only take their animals for protection at UPDF detachments at night.

Rain-fed crop production is practiced throughout the zone, although the environment and climate are more conducive to livestock rearing than crop production. Crops grown include sorghum, maize, millet, groundnuts, sunflower, cowpeas and beans. Small amounts of tobacco are grown for local sale and home use. Households use hand hoes and oxen for ploughing. Tractor cultivation has been introduced in some areas by the government and supported by a number of organisations to open large fields for the multiplication of planting materials (especially for cassava). The most common planting practice is to broadcast and intercrop sorghum with sunflower, beans, cowpeas and some cucurbits. Groundnuts are planted as a single stand and millet is intercropped with maize. Fertilisers and manures are not typically applied, despite the abundance of livestock residue.

This is a food deficit livelihood zone in two out of every three years (on average). The majority of households depend on food purchases from the market, supplemented by food from their own crop production, and milk, meat and sometimes blood from their own livestock. In good years, own crops can cover a large portion of annual household food needs. Wild foods (roots, vegetables, fruits and wild game) are a normal part of the diet in both good and bad years; their consumption should not be seen as an indicator of stress on its own.

Markets

The road network linking large towns and leading outside the country to neighbouring Sudan and Kenya is fairly well-developed, allowing for a steady flow of goods to enter and leave the zone. However, poorly maintained roads sometimes limit access to markets during the wet season. Another factor that limits access to markets is the long distances to trading centres. Sometimes insecurity prevents communities from accessing the markets because road ambushes are planned at times to coincide with market days. Nonetheless the zone is served by well structured weekly markets for livestock and other commodities, especially when compared to the neighbouring pastoral zone.

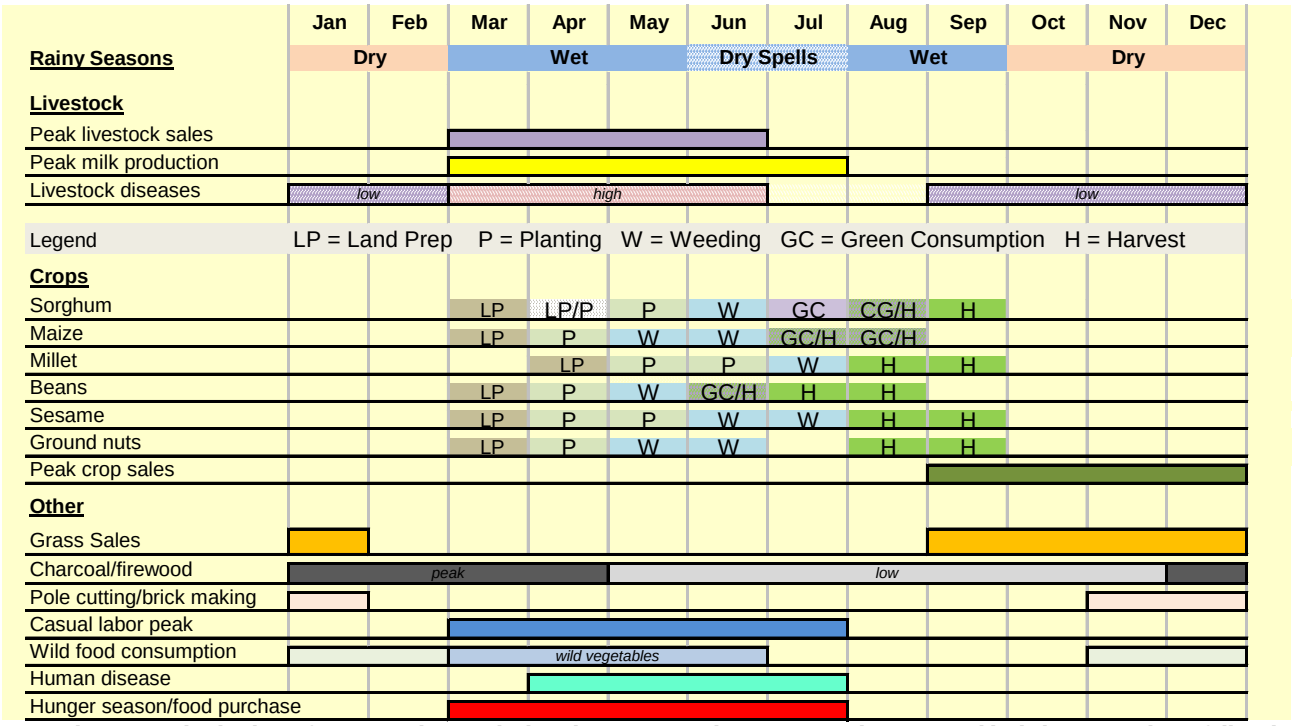
The main markets in this zone are located in district headquarters. For Moroto District there are markets in Moroto town, Matany, Kangole and Iriri. Kotido District has markets in Kotido town, Lokitelaebu, Losakucha (in Kacheri) and Kanawat (the biggest in Kotido). In Nakapiripirit District there are markets located in Nakapiripirit town, Namalu, Lolachat and Nabilatuk. Kaabong District has Kaabong town market and Kapedo. The larger markets are supplemented by smaller trading centres and shops. The mobile telephone network is reasonable compared to similar areas in other parts of the Horn of Africa, providing access to information on market prices to traders operating within the zone.

The zone is a net importer of crops and a net exporter of livestock. Cattle, sheep and goats are the main livestock sold. Livestock sales are continuous throughout the year, but sales peak in the hunger season, from March to June, when household food reserves are low. Livestock traders make arrangements with their local focal points and are able to purchase and transport livestock out of the zone to places like Kitgum, Gulu, Mbale, Soroti, southern Sudan and Kampala. The same traders usually bring various food crops and non-food goods for sale to households within the zone. Most food crops are imported from Mbale, Soroti, Kitgum, Pader and Lira.

Seasonal Calendar

The zone has one long rainy period, usually from March through September, with a short interruption in June/July. The dry season lasts from October to February. Land preparation for most crops begins in March after the onset of rains. Planting and land cultivation are sometimes carried out at the same time. Harvesting takes place from July/August to September/October. Prior to 2006, livestock migrated seasonally to dry season grazing lands, leaving home areas in October and returning in February/March. Since 2006, livestock have stopped migrating far from home because of insecurity and the introduction of the government's protected kraal system.

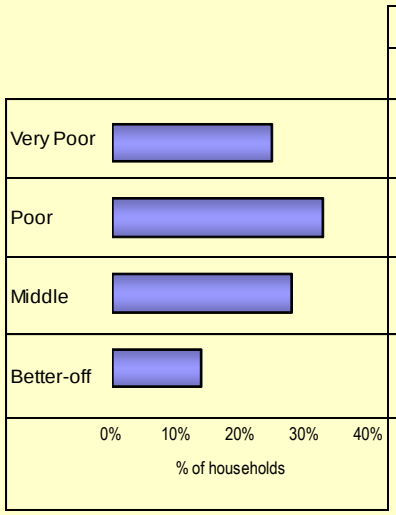
The hunger season generally runs from March to July, coinciding with peak livestock sales (especially by poorer households) and a heightened search for agricultural labour. Firewood and charcoal sales occur throughout the year, but peak from December to April. Cutting poles and brick making are mostly carried out from November to February. Grass sales (by women and girls) take place from September to January. Wild foods consumption occurs mostly from October through February, although some wild vegetables are also consumed from March to July. Although there is some green consumption in June/July, the main consumption year runs from August to the following July. The reference or baseline year chosen for this study was August 2008 – July 2009 (the most recent full consumption year at the time of the assessment in May 2010).



Note: The seasonal calendar is for a typical year. The last three years in the zone were characterised by below normal rainfall and prolonged dry spells that led to failure of most crops.

Wealth Breakdown

The number of livestock – and especially cattle – a household owns determines its wealth in this zone. Livestock ownership is a male domain but all wives have a share in the milk, meat, and cash from livestock sales, and they have access to ox ploughing (if the man owns oxen). Sheep and goats are commonly kept, with more sheep in northern areas and more goats in southern areas. In some areas poultry is kept for eggs and meat, but their contribution to income and food needs is relatively low compared to cattle, sheep and goats. In addition, chicken are highly vulnerable to Newcastle disease, which can wipe out entire holdings. The number of donkeys increases with wealth, with very poor households having none, and better off having 2 -4. The poor and middle fall in between these extremes.



	Wealth Group Information				
	HH size	Wives per man	Land area cultivated	Livestock (per wife)	Oxen
Very Poor	5-7	1	0.25-1 acres	cattle: 2-5; goats: 3-8; sheep: 2-5	0
Poor	5-8	1 - 2	1-2.5 acres	cattle: 5-10; goats: 8-15; sheep: 5-17	0-1
Middle	7-8	2 - 3	2-3 acres	cattle: 15-40; goats: 10-35; sheep: 15-35	1-2
Better-off	7-9	3 - 5	2-4 acres	cattle: 25-55; goats: 20-60; sheep: 20-55	1-2

Note: Figures for percent of households in the above table represent midpoints not absolute figures. All figures refer to a household headed by a woman.

Herd sizes are constrained by endemic diseases, raids and the need to sell off livestock in bad years in order to purchase food. The last three years have been difficult for households in this livelihood zone. Abnormally high livestock deaths were registered in the reference year due to the spread of disease associated with concentrations of animals in protected kraals. Since access to animal health services is directly related to purchasing power, better off households are more successful at responding to limiting deaths among their herds. A new disease called PPR[18], which affects sheep and goats, was particularly devastating in the reference year.

Another factor limiting the size of any one man's herd is the practice of taking on a new wife once his herd has increased to a certain size. He is required to pay for her dowry in livestock, thereby redistributing some of his livestock to another household. Very poor and poor men usually have one wife, middle men have 2-3 wives and the better off have 3-4 wives. Some of the wives are considered 'not official' or 'informal' because their marriage procedures (mainly payment of dowry) have not been finalised, but they share the man's resources with official wives.

The amount of land cultivated by a household is determined in part by its access to oxen and ploughs; these are mostly owned by better off households. Poorer households tend to have less labour and limited access to oxen; the better off plough larger fields and hire labour for farming activities. Households often cultivate more than one plot in different locations. Some tobacco is grown near the homestead for home consumption or for selling to neighbours. Very poor households in southern parts of the zone cultivated slightly more land than the same wealth group in northern parts of the zone.

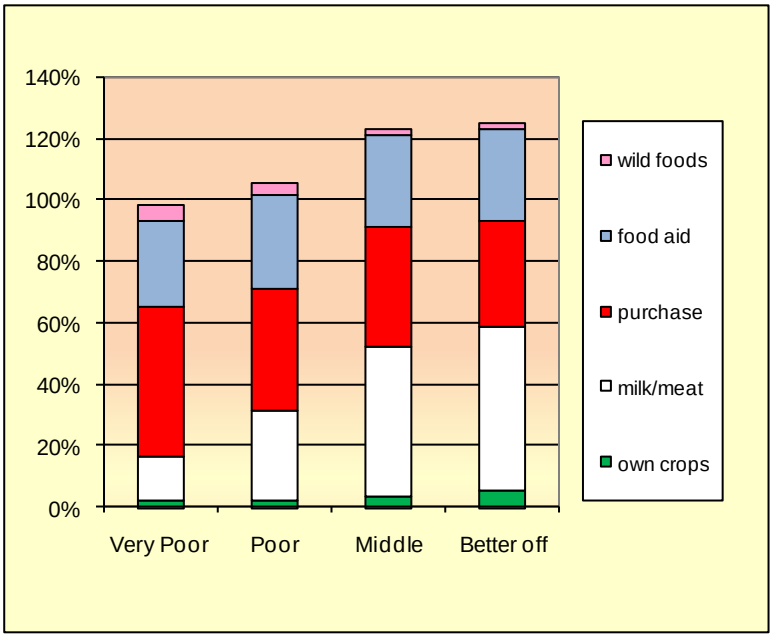
Social support is high and comes in the form of better-off households hosting children from poor households. In fact, poorer households tend to have fewer people living at home because they have members staying with better off relatives; better off households tend to be larger as a result. Other social support is in the form of gifts of meat and milk from the better off to the poor.

[18] *Peste des petits ruminants*.

Sources of Food – a bad year (2008-09)

Milk and meat, purchased food, own crops and wild foods are typically the main sources of food in this zone. In the reference year, own crops were minimal and food aid contributed significantly. All groups covered 100% of their minimum annual food needs (based on 2100 calories per person per day) except the very poor who fell very slightly below this level.

Purchased grains include sorghum (more in the north than south, where it is found in Acholi market), maize (more in the south than north, from Elgon sub-region). Beans are also commonly purchased. In a better year, the proportion of food coming from own crops would be larger, and the proportion from purchase would have been smaller. Poorer households rely more heavily on purchased grains than better off households, who can draw more successfully on their own production.



In the graph, food access is expressed as a percentage of minimum food requirements, taken as an average food energy intake of 2100 calories per person per day.

Milk and meat[19] combined contribute substantially to household food income, up to about half of annual household food needs for better off households. The better off have more livestock than the poor, allowing them to take advantage of this productive resource.

Relief food was an important source of food for all households in the reference year and included both school feeding for children and general food distributions. Food assistance was targeted to drought and flood affected households in 2008 but extended to all households in 2009.

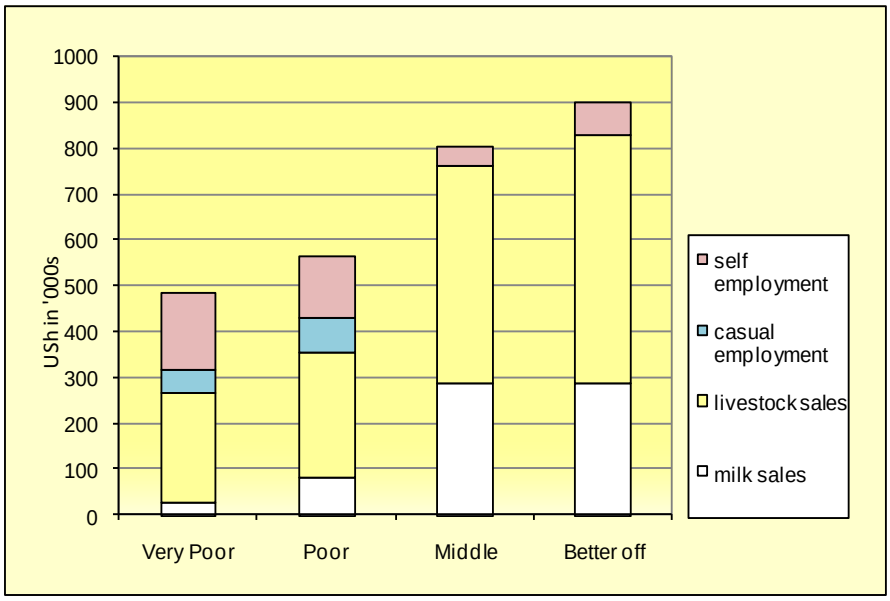
Wild foods - including wild fruits (e.g. tamarind), mushrooms, tubers, white ants, game meat and wild vegetables - are consumed by all wealth groups; the poor and the very poor consume more than other groups. Hunting increases in the dry season and tapers off in the wet season.

Labour in direct exchange for food was not common in the reference year because better off households, who normally hire poorer households, did not have enough surplus to use for payment.

[19] It is normal for households to consume meat from animals that have died from natural causes.

Sources of Cash – a bad year (2008-09)

Livestock sales are the main source of income for all wealth groups, followed by milk sales for middle and better-off households. More milk is sold in areas close to trading centres than in remote areas



The graph shows annual cash income by wealth group in USh.

All wealth groups sell natural products (especially firewood and charcoal) every year, increasing the quantities sold in bad years. In bad years, charcoal is also exported out of the region to other parts of Uganda. With increasing supplies of firewood and charcoal in bad years, prices decrease, leaving people with less of a return on their time investments. Charcoal and firewood sales are an important income source for women from all wealth groups, who may not have easy access to the cash from livestock sales (a transaction generally controlled by men).

Annual income (USh)	450000 - 500000	500000 - 600000	750000 - 850000	850000 - 950000

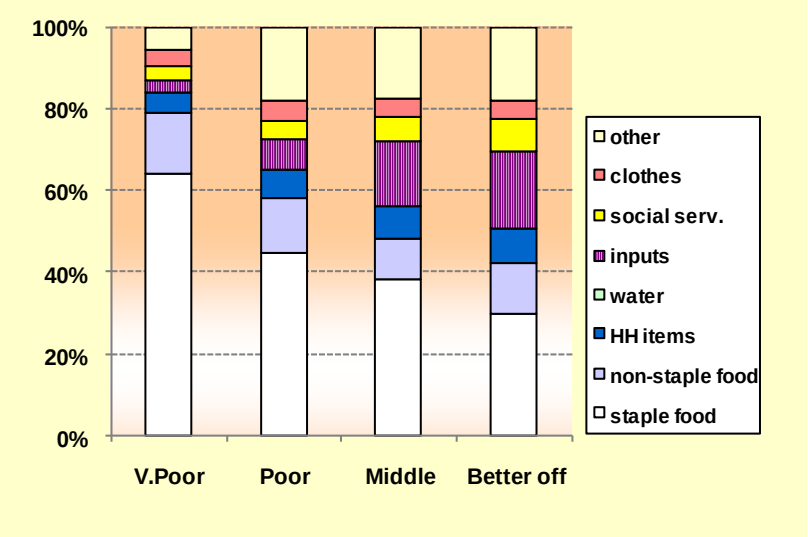
Self-employment is especially important for poorer wealth groups, comprising mainly firewood, charcoal, grass and pole sales. Agricultural labour and some milk sales also contribute to poorer group cash income. In bad years the poor are forced to sell more livestock than they can afford, undermining their ability to maintain a viable herd.

Better off households earn most of their cash selling sheep and goats, local beer, grains and, as a last resort, cattle. Brewing was a minor income source (included in 'self employment') for better off households in the reference year, but is practised more extensively in average and good years, when more crops are available to make the beer. In bad years, beer is imported into rural areas from small trading centres, towns and market centres.

In good years, crop sales provide income for all wealth groups. Sorghum, sesame and groundnuts are sold, usually from September to December.

Expenditure Patterns – a bad year (2008-09)

Food purchases - mainly of sorghum, maize, beans and sesame - make up a significant proportion of expenditure for all wealth groups in the reference year. Very poor households devoted almost 80% of their available cash to food, and even better off households spent over 40% of their cash on food, making up for the poor own crop production. For poorer households, very little income remains for other basic items like health and education. Food prices tend to be higher in northern parts of the zone compared to southern parts.



The graph provides a breakdown of total cash expenditure according to category of expenditure.

'Inputs' in the graphic below includes expenditure on seeds and simple tools like hoes and machetes (*pangas*) for poorer groups and ox ploughs and young breeding stock for better off households.

Money spent on social services (education and health) is minimal across all groups, increasing from poor to better off.

Hazards

Insecurity - in the form of cattle raids, road ambushes and indiscriminate killings - is a major hazard in the zone. Livestock and crop diseases, crop pests and drought add to the factors undermining livelihoods for local households.

Common diseases affecting livestock include tick borne diseases, worm infections, *contagious bovine pleuropneumonia* (CBPP or *loukuoi*), *contagious caprine pleuroneumonia* (CCPP), bacterial infections and *peste des petit ruminants* (PPR), an emerging disease that has affected goats in the last two years. Poultry are often wiped out by Newcastle Disease (local people refer to the disease as *cholera* of poultry).

Common crop pests include birds and weevils. Birds are mostly scared away manually using labour. Sorghum is affected by honey dew disease (*ergot*), black smut (*esinai*) and shoot fry (*eremonu*); maize stalk borer and maize streak (*emuron ekidikidi*) reduce maize yields. The *striga* weed has been affecting cereal yields in last few years. There were no serious measures to combat these diseases in the reference year.

Coping Strategies

Common household response strategies to deal with hazards include the following.

Switching of expenditure – Reduced expenditure on non-essential items and on more expensive food items is a strategy pursued by all wealth groups in bad years, so that they

can purchase cheaper staple foods like maize and sorghum.

Increased bush product collection and sale – The sale of firewood and charcoal is intensified in bad years. Charcoal is exported out of Karamoja to other regions within the country. The environmental implications of this strategy are likely to be damaging.

Labour migration – Members of poorer and, to some extent, middle households travel to Soroti, Mbale, Lira and Pader in search of labour opportunities in both rural and urban areas.

Increased livestock sales – Households from the better off wealth group sell additional livestock to cover food and other essential purchases in bad years. Even for the better off, however, the extent to which this strategy of increased livestock sales can be pursued without damaging future livelihoods is quite limited.

Treatment of livestock diseases – Better off households sometimes purchase livestock drugs to treat their herds. The government and its development partners have been providing free vaccinations.

Increased consumption of wild foods – Most households collect and consume wild foods in normal years. In bad years, households increase the amounts collected and consume them over a longer period of time.

Key Parameters[20]

The following are the key parameters – or significant aspects of the local household economy – that need to be monitored every year:

Item	Key Parameter – Quantity	Key Parameter – Price
Crops	Sorghum Maize Millet Sunflower Groundnuts Cowpeas Beans	Sorghum Sesame Groundnuts
Livestock production	Cattle Shoats Milk Meat	Cattle Shoats Milk
Other food and cash income	Agricultural labour Charcoal Firewood	Labour rates Charcoal Firewood

[20] Key parameters are food or income options that make up at least 5% of any two wealth groups' annual sources of food or income; or 10% of any one wealth group's annual food/cash income.

Annex 3: Agricultural Livelihood Zone Profile, Karamoja Region, Uganda

Abim Simsim Groundnuts Sorghum Livestock Livelihood Zone, May 2010

Zone Description

The Abim Simsim Groundnuts Sorghum Livestock Livelihood Zone is an agriculturally-based zone that extends across all of Abim District and a small part of Moroto District.[23] The main ethnic group in the area is the Labwor. The projected 2010 population for the livelihood zone is 61,100.[24]

The zone is hilly, with mountains that drain water into lowlands, where crops are produced. The zone has sandy and black clay loam soils in the plains and alluvial soils along river courses that support a wide variety of crops. Average annual rainfall is between 700 - 1000 mm. There is one long rainy season lasting from March/April to September/ October, with a drier spell typically occurring during June/July. Compared to the rest of Karamoja Region, the zone is a high potential area for crop production due to good soils and higher rainfall amounts.
In typical years the main food sources are households' own crop production, supplemented by purchased food, payment in kind (in exchange for labour), and wild foods. Rainfed crop production is the norm, leaving households vulnerable to years when rains are poor. The vegetation in the highlands and lowlands is host to a number of wild foods that local households depend on, particularly wild yams, shea nut fruit and oil from the nuts.

The main crops are sorghum, millet, beans, cowpeas, pigeon peas, groundnuts, sweet

[21] This is the Karamoja part of a larger livelihood zone that is shown on the map and was identified in a national zoning workshop in 2009 (organised by FEWS NET): South Kitgum Pader Abim Simsim Groundnuts Sorghum Livestock Livelihood Zone (UG21).

[22] Field work for the current profile was undertaken in May 2010. The information presented refers to August 2008 – July 2009, a relatively bad year by local standards (i.e. a year of below average production and rural food security, when judged in the context of recent years). Provided there are no fundamental and rapid shifts in the economy, the information in this profile is expected to remain valid for approximately five years (i.e. until 2015).

[23] According to the Uganda livelihoods zoning map completed by FEWS NET in 2009, this zone includes Kacheri sub-county, Kotido District. However, this assessment concluded that Kacheri should actually be included in the neighbouring agro-pastoral zone (Karamoja Livestock Sorghum Bulrush Millet Livelihood Zone).

[24] Uganda Bureau of Statistics estimates put the projected 2010 population of Abim at 55,300; and Apeitolim Parish, Lokopo Sub-county, Moroto District at 5,800.

potatoes, sesame and sunflower. Maize and a variety of cucurbits (cucumber, water melon and pumpkins) are grown on a small scale. Cassava, a recent introduction in the area, is gaining importance as farmers grow to appreciate its tolerance to drought. Sorghum, beans, cowpeas and sunflower are often intercropped in the same field. Groundnuts, sweet potatoes and cassava are planted as pure stands; cassava can be intercropped with beans in the early stages. Some fruit trees, especially mangoes, are owned by households. Cultivation is mainly done by oxen and hand hoes, with poorer households generally using hand hoes and better off households using oxen. It is not typical for households to apply manure or fertilisers.

For the most part, crops are grown for consumption, although some (sorghum, groundnuts, sesame, sunflower and cassava) may be sold at harvest time to generate the cash needed to pay for school fees or medical expenses. Seasonal food shortages occur from May through July. During this time, most households depend on purchased food while waiting for crops to mature in August.

Cattle, goats, a few sheep and pigs are the main livestock reared in this zone. Some poultry is also kept, but in very small numbers. The livestock sector was severely undermined by raiding, but has slowly started recovering since 2006. Before herds were decimated, households used cattle for milk and oxen for ploughing. Households with sufficient means have tried to re-stock, first by acquiring oxen/bulls from neighbouring Kotido, followed by purchases of milking cattle. Re-stocking efforts have occasionally been boosted by the government and some agencies that have provided breeding stock. Sheep and goats are tethered near the homes during the wet season to prevent them from damaging crops. They are let free in the dry season from September/October to March/April; this freedom results in high conception rates, leading to the majority of births occurring in March and April. Water for livestock is from the seasonal rivers and a few boreholes. Unlike in the agro-pastoral and pastoral zones, goats and sheep in this part of the region are not milked.

Crop sales and livestock sales (mostly goats, sheep and to a lesser extent poultry) are the main income sources. In typical years before the raids, cattle were also sold. In addition, households depend on local agricultural labour and migrating to neighbouring districts to find work (especially in bad years), charcoal and firewood sales, and brick making.

Drought is the main threat to food security in this livelihood zone. Households experienced poor rainfall during the last three years, resulting in food aid deliveries. Food aid was targeted to 'extremely vulnerable individuals' (EVIs) in 2008 and extended to the general population in 2009. Children in primary and secondary schools received relief food through school feeding programs.

Key informants reported that access to health services is inadequate, with a lack of health facilities, drugs and trained staff. There were also concerns voiced about inadequate school facilities, especially at the secondary level.

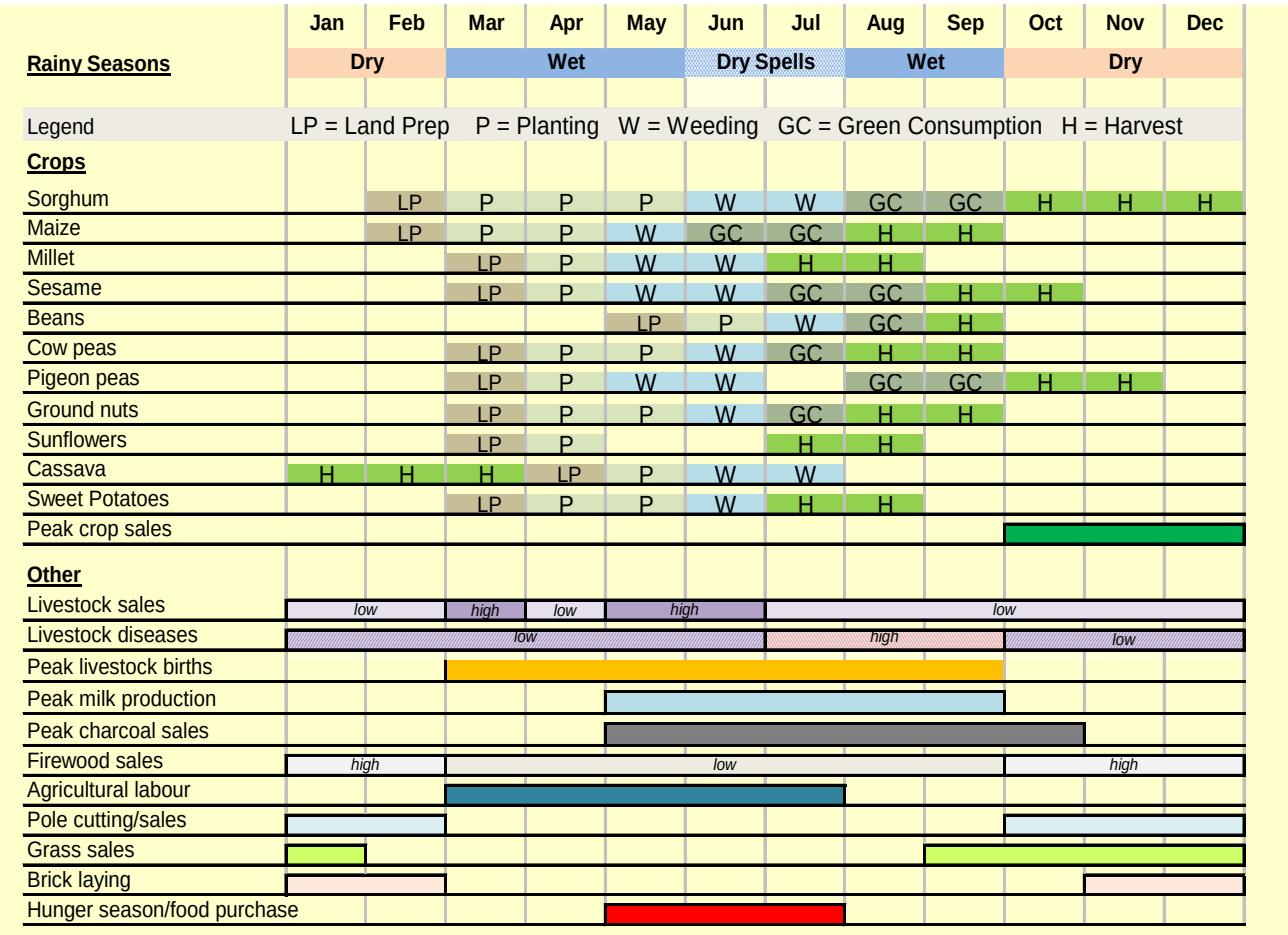
Markets

Markets play an important role in the livelihoods of this zone, providing opportunities for households to exchange livestock and crops for needed cash. Sub-county markets located within the zone operate as often as twice a week. Major crops sold in the markets include sorghum, maize, groundnuts, sweet potatoes, cassava, sesame, beans, imported vegetables and

fruits. Dried small fish, clothes, utensils, and hygiene products are also found in weekly markets. Households time their purchases of most items with market days. In times of crop shortages, the large traders supply local markets with food commodities originating from Lira, Kitgum, Acholi, Lango, Pader, Soroti and Mbale. Specialised livestock markets are organised weekly at the sub-county level; unlike other areas of Karamoja that export livestock beyond the region's boundaries, local goats, sheep, pigs and poultry are mainly sold *within* the zone.
The local population travels to markets mostly on foot, along a fair network of earth roads. Roads become impassable in the wet season and access can also be hindered by occasional insecurity. The government has put in place several army units along the trading paths to mitigate insecurity. Mobile telephone networks have provided an opportunity for traders to access information about local demand and prevailing prices, making it possible for traders from supply areas like Mbale, Soroti, Acholi, Kitgum, Lira, and Pader to know beforehand the commodities in demand on market days.

Seasonal Calendar

The zone has one long rainfall season starting in March/April and ending in September/October, with intermittent dry spells in June/July. Land preparation for sorghum and maize can commence as early as February. Land preparation for sesame, groundnuts, sunflower, sweet potatoes, cow peas and millet takes place in March. Land preparation for beans and cassava is carried out mostly in May. Most crops are planted in March/April followed by weeding. The hunger season is from May to July; this is when food stocks run out and households depend more heavily on purchased food until August, when the main harvests start to come in. It is during this period that poorer households increase their reliance on casual labour and self-employment to earn the much needed cash to purchase food.

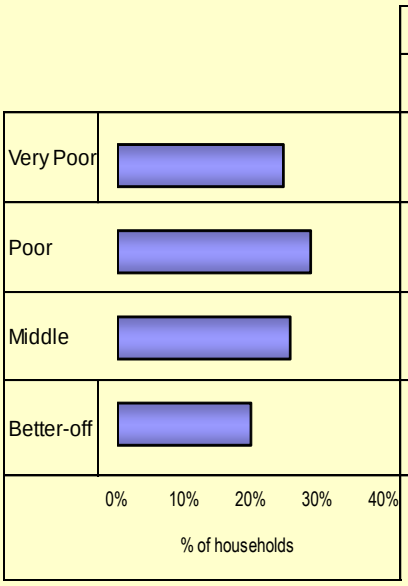


July marks the start of the harvest for short maturing crops like sunflower; long maturing crops, like sorghum, are harvested through December. Most maize is consumed green. Cassava is usually harvested in February to May of the year after planting. Crop sales typically take place immediately after harvesting. Sorghum, maize, millet and groundnuts are stored in granaries without threshing/shelling.

Poultry are sold throughout the year; goats, sheep and cattle are sold mostly during the hunger season and at the start of school terms in March, May and September. Charcoal sales occur from March to September, during the wet season, when there is increased demand for charcoal by town residents. Households typically make more charcoal than necessary in the dry season to stock so they can sell it during the wet season when prices are highest. Peak firewood sales take place in the dry season. Brick making operations are possible during the dry season only.

Wealth Breakdown

The amount of land *cultivated* – as opposed to the amount of land *owned* – is the key determinant of wealth in this zone; and this, in turn, is determined by the number of oxen and ploughs a household owns. Only better off households, with oxen and ploughs and the means to hire extra labour, are able to take advantage of the available land. Poorer households are limited to the amount of land they can cultivate using hand hoes. An additional constraint - insecurity - kept some households in the reference year from cultivating fertile land located far from their homes. The effect of insecurity was, however, limited mainly to the peripheral areas (bordering the other districts of Karamoja) and did not affect the interior parts of the zone or those bordering Acholi and Lango sub-regions.



	Wealth Group Information			
	HH size	Land area cultivated (acres)	Livestock	Ploughs
Very Poor	6-8	0.5 - 1	oxen: 0, goats: 0-2; pigs: 1	0
Poor	6-8	1 - 1.5	oxen: 0; goats: 1-4; pigs: 2-3	0
Middle	6-8	1.5 - 2.5	oxen: 0 - 2; goats: 2-6; pigs: 3	1
Better-off	7-9	2.5 - 3.5	oxen: 1 - 3; goats: 5-15; pigs: 2	1

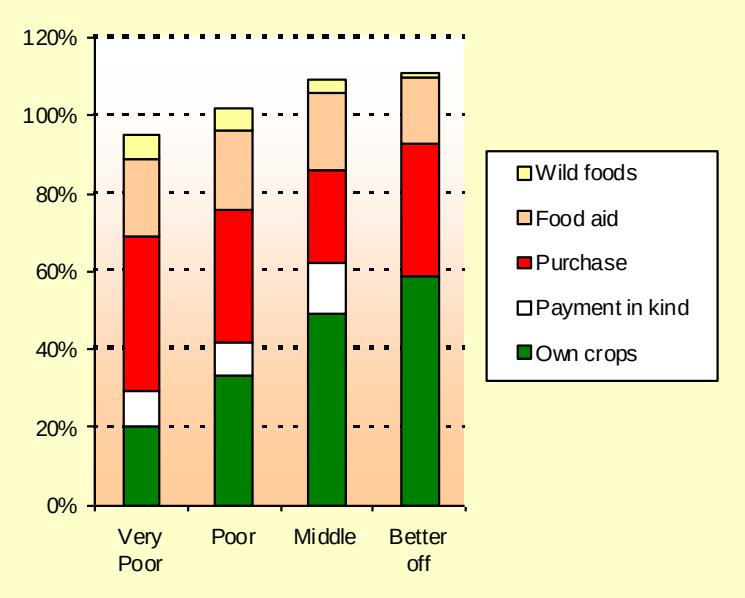
Note: The'% households' figure represents the mid-point of a range.

As previously mentioned, raiding has decimated the livestock population, and so households in this zone have very low numbers of livestock compared to the rest of Karamoja Region. As a

result, better-off households only invest in purchasing oxen for ploughing, as opposed to purchasing cattle for breeding, as was the case before. There has also been an increase in the rearing of pigs, which are not targets for raiders. Goats and pigs are important sources of cash, especially in bad years and when cash is required at a short notice.

Sources of Food: a bad year (2008 - 2009)

As shown in the graph to the right, households in this zone relied on five sources of food in the reference year, a relatively bad year: own crops, payment in kind, purchased food, food aid, and wild foods. The consumption year runs from August to July. Although green consumption of some crops may begin as early as June/July, August usually marks the beginning of the consumption year because harvesting of crops like sorghum, maize, millet, sesame, groundnuts, beans, and sweet potatoes starts during this month. In the reference year purchases and own crops (mainly sorghum, millet, sweet potatoes, cowpeas, beans and sunflower) were the main sources of food for all wealth groups.



The graph shows food access as a percentage of minimum annual household food requirements, assuming an average requirement of 2100 calories per person per day.

Most of the food crops produced were consumed, unlike in good years when a portion of the crops are sold. The total contribution of own crops to annual food needs ranged from about 20% for the very poor to about 60% for the better off.

Purchases contributed 20 – 40% of annual food income, with better off households needing to buy less than poorer households since they managed to produce more of their own crops. All groups purchased sorghum, beans, groundnuts, sesame, dried small fish, oil and vegetables. In addition, the poorer and middle groups supplemented their calorie intake by purchasing cheaper maize and cassava. Neighbouring areas of Acholi and Lango supplied the food purchased from the markets. Meat was purchased only by middle and better off groups.

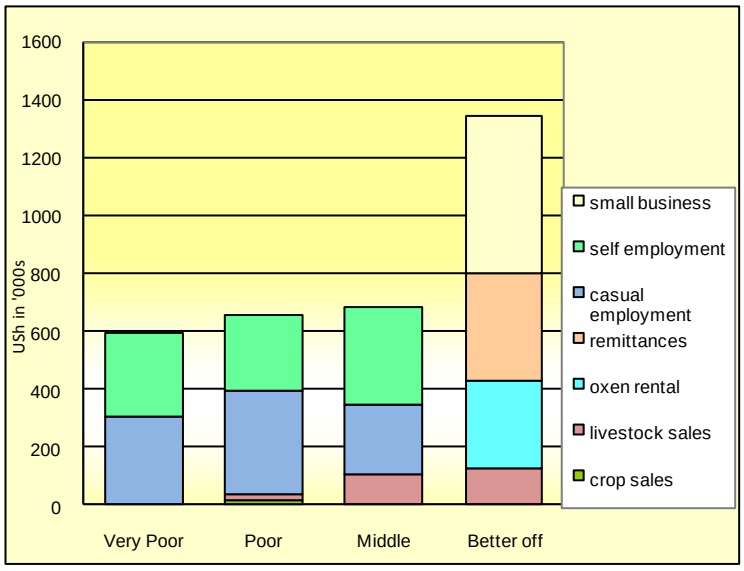
Poorer and middle households relied on payment in food in exchange for labour ('payment in kind') to make up about 10 - 15% of annual food needs. Usually this is payment in exchange for agricultural work, but it can also be for brick-laying and construction work. Some households reportedly migrated for short periods of time to neighbouring districts (Lira and Pader) to work in exchange for sorghum, maize, and sometimes cassava.

Relief food aid was received by all wealth groups and included school feeding during school

terms. Relief food covered approximately 20% of households' annual food needs and included cereals, pulses, oil, corn soya blend (CSB) and salt.

Wild foods, including wild vegetables, yams, and shea nut fruits and shea nut oil, also contributed.

Sources of Cash: a bad year (2008 - 2009)



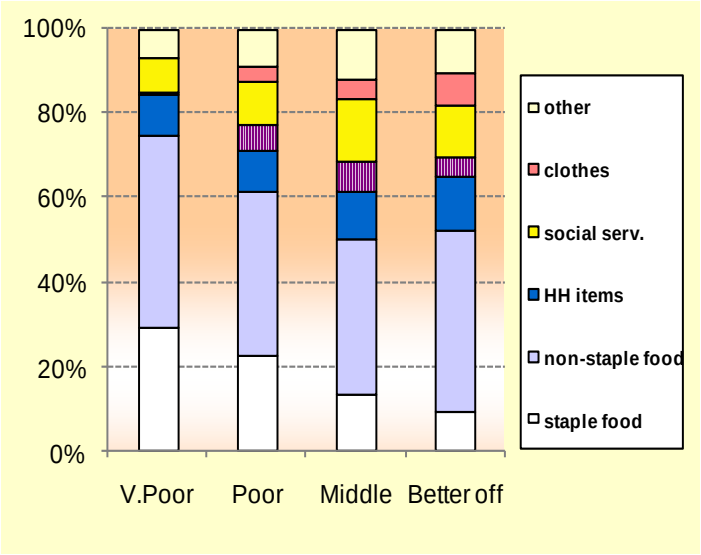
The graph shows a breakdown of annual cash income by wealth group in USh

Annual income USh	550000 - 650000	600000 - 700000	650000 - 700000	1000000 - 1500000

Because of the small amount of crop production in the reference year, crop sales were extremely limited The main sources of cash income for poorer households and middle households in the reference year were casual labour and self employment. Better off households relied on livestock sales, renting out oxen, remittances and income from small businesses.

'Casual labour' refers mostly to agricultural labour (sometimes in the neighbouring districts of Pader and Lira), domestic labour - like fetching water - and house construction.
'Self employment' includes firewood and charcoal sales, sales of building materials (poles, ropes, bamboo) and handicrafts. The better-off participated in mixed businesses that included brick-making, quarrying, charcoal sales, brewing and petty trade. Remittances were a significant source of income for the better-off. This was largely used to meet school fees.

Expenditure Patterns: a bad year (2008 - 2009)



All groups purchased food in the reference year. In relative terms, poorer households had to spend more of their income on food than better off households, who could rely on more of their own crops. Although the proportion of expenditure on non-staple foods is similar across all groups, the very poor spend a larger portion of their available income on this item compared to the poor and the middle groups. In absolute terms, the better off spent more than double what other household groups spent on non-staple foods. The better off were the only households to purchase meat.

Expenditure on household items (salt, soap, kerosene and grinding), inputs (mainly seeds), social services (health and education), clothes and other items increased with wealth. The category 'other' includes beer and tobacco.

The better off spent significantly more (in absolute terms) on agricultural inputs, including the purchase and maintenance of ploughs, hiring of agricultural labour, and seeds. Better off households spent more on education than other groups. Very poor households did not have enough money to purchase inputs.

Expenditure on household items (salt, soap, kerosene and grinding), inputs (mainly seeds), social services (health and education), clothes and other items increased with wealth. The category 'other' includes beer and tobacco.

The better off spent significantly more (in absolute terms) on agricultural inputs, including the purchase and maintenance of ploughs, hiring of agricultural labour, and seeds. Better off households spent more on education than other groups. Very poor households did not have enough money to purchase inputs.

Hazards

Insecurity is a chronic hazard undermining both crop and livestock production. Livestock raids have led to the loss of all types of livestock in the past. In addition to the loss of livestock, human lives are often lost during the raids. Insecurity prevents households from cultivating productive land that is located in insecure areas, reducing overall production. Insecurity also limits access to wild foods and game.

Livestock diseases diminish income that can be realized from livestock sales, in addition to reducing milk and meat yields. Diseases that threaten livestock production are East Coast Fever (ECF), rinderpest, *contagious bovine pleuropneumonia* (CBPP), foot and mouth disease

(FMD) for cattle and recently *peste des petits ruminants* (PPR) for goats. Poultry is often attacked by Newcastle disease.

Prolonged dry spells/drought are a persistent threat, and have led to crop failures in the last three years resulting in food insecurity throughout the zone and the whole of Karamoja Region.
Flooding: The last serious flooding was reported in 2007. Normal seasonal water-logging occurs in low lying areas.

Weeds affect crop production yearly especially in years of good rainfall. The *striga* weed has affected sorghum production in the last two years and if not controlled will continue to reduce sorghum yields in future.

Coping Strategies

To reduce the risk of attacks, households cultivate lands that are near their homes. Several households usually herd their animals together to form a united front against potential raiding. People organise and move in large groups when going to the markets. Key informants reported that the increased emphasis on pig rearing was a response to cattle raids.

In an effort to combat livestock diseases the government and its development partner agencies have been providing vaccinations for livestock free of charge. Better off households usually purchase drugs to treat their livestock. There have also been distributions of seeds and planting materials and tools by government and development partners to encourage and raise the levels of production. The government is also promoting alternative income sources, especially pig raising, apiculture and aquaculture to enable the communities cope with the loss of livestock due to insecurity.

When communities are suffering food shortages, they look for more labour opportunities in addition to selling firewood, charcoal, poles, bamboo, and other construction materials. Some members of the households will temporarily migrate to nearby districts in search of labour and be paid in kind with grain.

The better off may sell their goats, sheep and even cattle to get income in order to access food in bad years. Increased collection of wild foods is an option exploited by many people in the zone during periods of food insecurity.

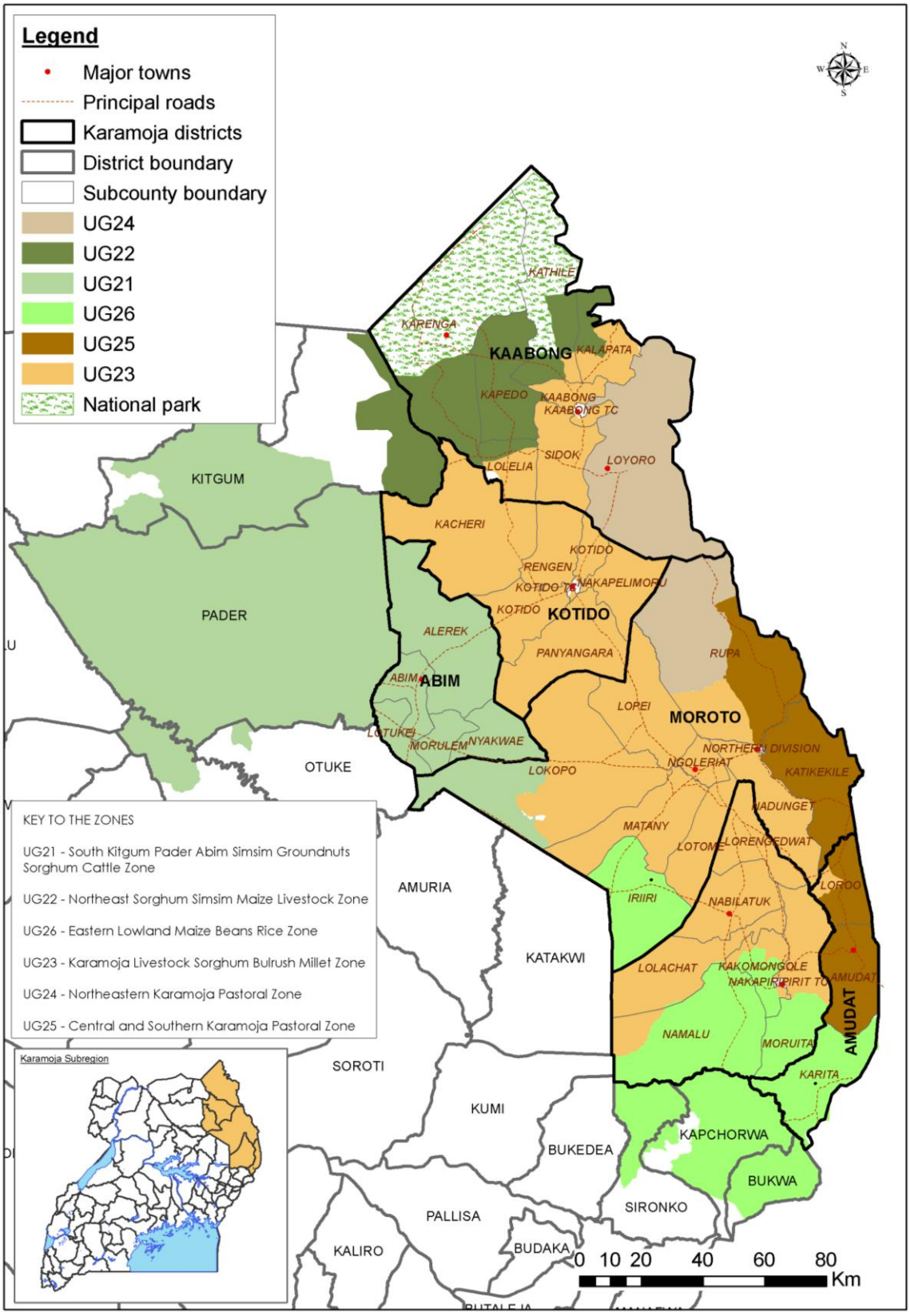
Key Parameters[25]

The key parameters listed in the table below should be monitored every year to provide warning of potential losses to the local household economies.

Item	Key Parameter – Quantity	Key Parameter – Price
Crops	Sorghum Cassava Millet Groundnuts Cowpeas Pigeon peas Beans Sesame Sweet potatoes	Sorghum Cassava Millet Groundnuts Cowpeas Pigeon peas Beans Sesame Sweet potatoes
Livestock production	Goats (herd size)	Goat prices
Other food and cash income	Agricultural labour (availability) Oxen hiring Construction labour Brick making Remittances Firewood Charcoal Building materials	Daily casual labour rates Oxen hiring Firewood Charcoal Building materials

[25] Key parameters are food or income options that make up at least 5% of any two wealth groups' annual sources of food or income; or 10% of any one wealth group's annual food/cash income.

Annex 4: Livelihood Zones of Karamoja



Annex 5: Livelihood Zones of Baseline Assessment