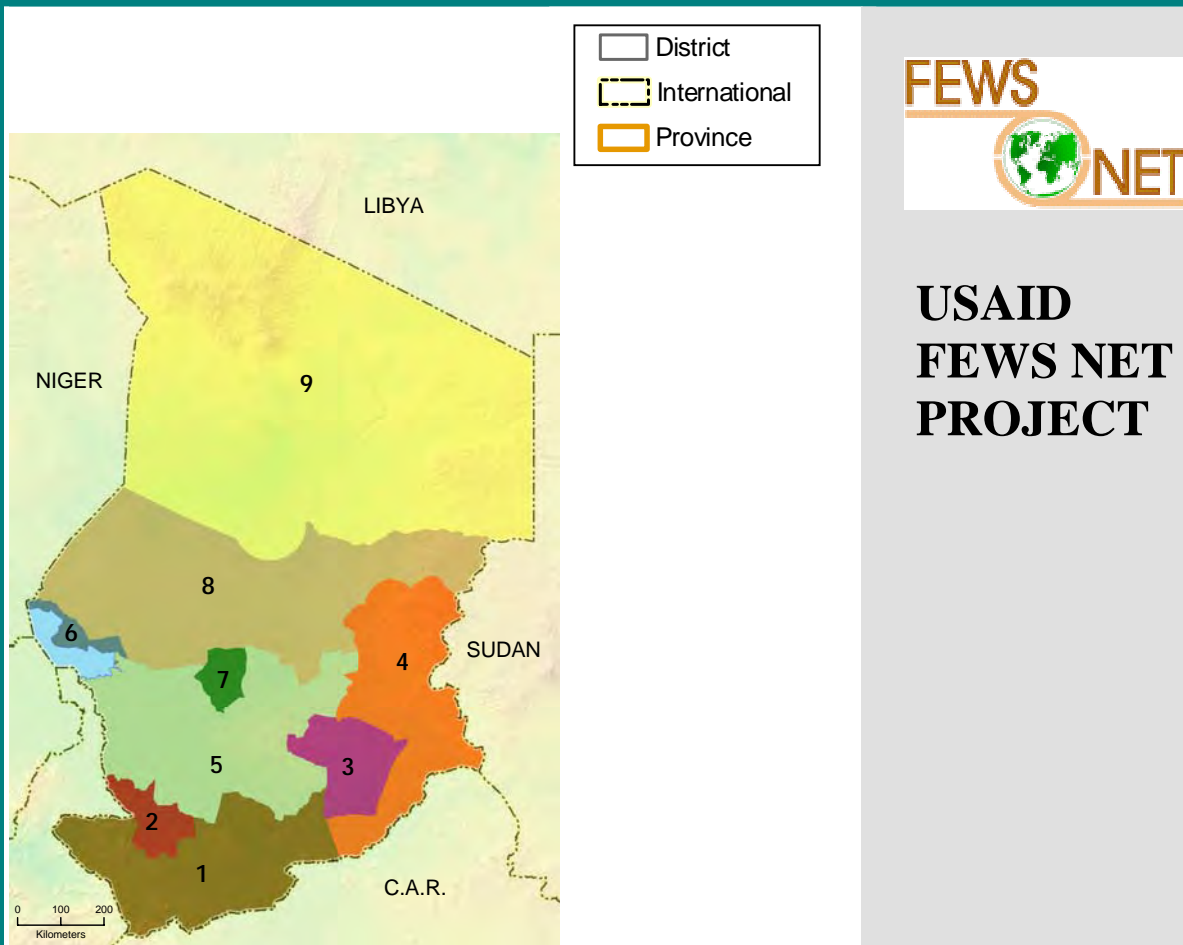


Chad Livelihood Profiles

March 2005



Food Economy Zones

- 1 Southern cotton and groundnuts cash crop zone
- 2 Southern rice cash crop zone
- 3 Southeast flood-retreat cultivation zone
- 4 Eastern rain-fed cereals zone
- 5 Western agro-pastoral zone
- 6 Central agro-pastoral and fishing zone
- 7 Central flood-retreat cultivation and fishing zone
- 8 Northern transhumant herding zone
- 9 Northern camel, date and salt (natron) zone



**USAID
FEWS NET
PROJECT**

TABLE OF CONTENTS

Introduction	3
The Uses of the Profiles	4
Key Concepts	5
What is in a Livelihood Profile	7
Methodology	8
National Overview	9
Introduction	9
Geography and Climate	9
Sources of Food and Cash: Main Findings and Implications	10
Rural Livelihood Zone Summaries	12
Chad Livelihood Profiles	16
Zone 1: Cash crops: Cotton and Groundnuts	16
Zone 2: Cash crops: Rice	21
Zone 3: Southeast flood-retreat cultivation zone	26
Zone 4: Eastern Rain fed Cereals	30
Zone 5: Western Agro pastoral Zone	34
Zone 6: Central Agro pastoral and fishing	39
Zone 7: Off-season farming and fishing	44
Zone 8: Transhumant Livestock Zone	48

Introduction

The livelihood profiles that follow document how populations throughout Mauritania live. A *livelihood* is the sum of ways in which households make ends meet from year to year, and how they survive (or fail to survive) through difficult times.

There is increasing interest in using livelihoods analysis as the ‘lens’ through which to view a number of problems. These problems range from emergency response to disaster mitigation to longer term development. This interest rests upon two basic observations:

- 1) Information about a given area or community can only be properly interpreted if it is put into the context of how people live.
- 2) Interventions can only be designed in ways appropriate to local circumstances if the planner knows about local livelihoods and whether or not a proposed intervention will build upon or undermine existing strategies.

Two main products are offered here:

National Livelihood Zone Map	The map shows the division of the country into homogeneous zones defined according to a livelihoods framework.
Livelihood Zone Profiles	The profiles describe the major characteristics of each zone, including a brief differentiation of the food security status of different wealth groups. There is some emphasis on hazards and the relative capacity of different types of households in different places to withstand them.

In compiling the profiles, a balance has been struck between accessibility and level of detail. The aim has been to present sufficient information to allow a rounded and balanced view of livelihoods nationally. The profiles provide a rapid introduction to livelihoods in the country; they do not offer localized detail.

The preparation of these profiles was a joint activity between the USAID FEWS NET project, the Government of Mauritania, and the Permanent Interstate Committee for Drought Control in the Sahel (CILSS). The main focus of FEWS NET’s work is early warning, food security monitoring and emergency assessment. The livelihood profiles have been structured primarily with these types of activity in mind. However, it is hoped that they will also prove useful to the wider development community.

This document is divided into 3 main sections.

1. **Introduction**—This has 6 sub-sections
 - **The Uses of the Profiles**--which describe 3 main ways the profiles can be used.
 - **Key Concepts**--which defines the key concepts used in livelihoods based analysis.
 - **The National Livelihood Zone Map**—which introduces the concept of livelihood zones.
 - **What is in a Livelihood Profile**—which describes the layout and content of each profile
 - **Methodology**—which describes the methods used to develop the map and profiles.
2. **National Overview**— The national livelihood zone map, together with a national overview of livelihoods in Mauritania.
3. **The Livelihood Zone Profiles**—The profiles for each zone.

The Uses of the Profiles

The livelihood zoning and profiles presented here offer an analysis of urban and rural food security on a geographical basis. The country is divided into homogeneous zones defined according to a livelihoods framework. A brief description of each zone is provided, including an analysis of the position of different wealth groups within the zone. It is envisaged that this product will be useful on three levels, as follows.

1. An Introductory Guide to Food Security in the Country

The profiles pack considerable information and analysis into a few pages of presentation. They should therefore form a useful briefing for a newcomer who needs to get a quick grasp of food security conditions around the country. The geographical divisions are relatively small--as far as this is consistent with ground realities--so that the reader can take in the general pattern and the basic differences between areas and populations without being overwhelmed by too much detail.

Development planners can also benefit from using the livelihood profiles. One objective of development is to reduce people's vulnerability to hazard and to increase their capacity to cope. An important first step is to understand who is vulnerable, to which hazards, and why. Likewise, efforts to reduce poverty require an understanding of how the poorest households survive in different areas of the country and the reasons for their poverty.

2. Early Warning and Response Planning

Local food security is often equated with agricultural production outcomes. Hence, a chronic or temporary production deficit against local food requirement is immediately translated into chronic or temporary food insecurity. Consequently most early warning and food security monitoring systems draw heavily from two information sources: (i) crop and/or livestock production data; and (ii) market price information.

This is almost never the whole story. A full account of the 'food economy' addresses both food availability - that is, what food people produce—and food access—what cash people earn to purchase food. Data on casual employment or wild foods, or charity from relatives or the sale of handicrafts may be equally important to the livelihood story as data on crop and livestock production, and knowledge of the relative importance of these can guide the design of more appropriate monitoring systems and better rapid emergency assessments.

Using a livelihoods framework, we can inquire into household capacity to cope with stress, especially failed crop or livestock production; and we can appreciate household activities at different periods in the yearly cycle. All of which feeds directly into our analysis of need, helping to answer key questions such as; which areas and what types of household are likely to cope should a hazard strike and which will need assistance? What types of intervention will be most appropriate, and when and for how long should they be implemented?

Thus for instance one could point to the position of poor households in a given geographical area who are highly dependent on urban employment. If urban employment declines, their labor will be less in demand: can they find alternative income elsewhere – and will they be competing with people from other zones in these activities?

National officers working within their national early warning system have an immense knowledge of their countries. The livelihoods approach helps to provide a framework for the full use of that knowledge, as well as adding a new level of information to it.

3. Policy Development

Disaster management has been the main impetus to the spread of early warning systems. The rationale in early warning is to improve the efficiency in the scale and timing of emergency food aid. However, increasingly planners are looking at alternatives to food aid in early emergency intervention—and this often requires changes in policy and practice. A case in point is the stabilization of market prices for basic foods. Livelihoods analysis can expose the likely effects of such interventions on different households' capacity to survive a crisis. The analysis can also recommend the optimum timing for intervention.

Livelihood analysis can also be applied to other policy changes. For example, if government taxes on kerosene were reduced, or charges made for government veterinary drugs, what would be the impact on households? More generally, the household viewpoint offers a more secure footing for looking at the increasingly voluminous discussion of poverty alleviation. It allows one to look at the story which lies behind national statistics.

Key Concepts

The terms **risk**, **hazard**, **vulnerability** and **need** are frequently used in ways that can be confusing in the context of food security. Their established meaning for the purposes of disaster management - and the sense in which they are used here - is perhaps best explained with an example (see below).

Defining Risk, Hazard, Vulnerability and Need

- Drought is a major **hazard** affecting crop and livestock production in many African countries.
- Poor households are more **vulnerable** to (i.e. less able to cope with) drought than better-off households; they have fewer reserves of food or cash to fall back on, and fewer options for generating additional income.
- Poor households living in drought-prone areas of the country are more **at risk** of a food shortage than other households because they are both exposed to and vulnerable to the drought hazard.
- Once a drought strikes, the poor are the most **in need** of assistance.

To be at risk of food insecurity you must both be exposed to a hazard, as well as be vulnerable to that hazard, as in the case of poor households in the drought-prone areas of the country in the above example. Because vulnerability is so closely linked to hazard, it follows that there is no general state of vulnerability; people can only be vulnerable *to something*. For example, farmers cultivating along a river margin may be vulnerable to flood (which is likely to wash away their crops), but may not be vulnerable to drought (since they can irrigate their crops using water from the river). Likewise, pastoralists may not be very vulnerable to drought provided they can move freely in search of water and grazing. They may, on the other hand, be highly vulnerable to conflict if that inhibits their movement to key water points and grazing areas.

Once a hazard has struck, it no longer makes sense to talk about vulnerable groups. Put simply, people are **vulnerable before the event**, (since this refers to their ability to cope should a hazard strike). They are **in need after the event** (i.e. once they have been affected by and have been unable to cope with a hazard). Going back to the drought example, the poor are vulnerable to drought before the rains fail, but once they have lost their crops or livestock they are in need of assistance.

One of the most widely used livelihoods-based approaches for analyzing food security is the **food or household economy approach**, first developed by Save the Children UK in the 1990s¹. The basic principle underlying the approach states that:

an analysis of local livelihoods is essential for a proper understanding of the impact— at household level - of hazards such as drought or conflict or market dislocation.

Total crop failure may, for example, leave one group of households destitute because the failed crop is their only source of staple food. Another group, by contrast, may be able to cope because they have alternative food and income sources. These alternative sources - such as livestock to sell or relatives elsewhere who can assist - can make up the production shortfall. Thus, effective hazard impact assessments must be based upon

¹ See 'The Household Economy Approach', Seaman J., Clarke P., Boudreau T., Holt J., Save the Children UK 2000.

a livelihood analysis. The food economy analytical framework sets out the type of analysis required to understand the impact of a hazard on food security and local livelihoods, and has been used to help define the key information to be included in the profiles.

The objective of a food economy analysis is to investigate the effects of a hazard on *future* access to food and income, so that decisions can be taken about the most appropriate types of intervention to implement. The rationale behind the approach is that a good understanding of how people have survived in the past provides a sound basis for projecting into the future. Three types of information are combined; (i) information on baseline access to food/cash income, (ii) information on hazard (i.e. events affecting access to food/cash income, such as drought or conflict or market dislocation) and (iii) information on household-level response strategies (i.e. the sources of food and income that people turn to when exposed to a hazard). The approach can be summarized as follows:

Outcome = Baseline + Hazard + Response

Baseline: The baseline analysis has three components:

The Livelihood Zone Map: Patterns of livelihood clearly vary from one area to another, which is why the preparation of a **livelihood zone map** can be a useful first step for many types of livelihoods-based analysis. Local factors such as climate, soil, access to markets etc. all influence livelihood patterns. For example, people living in a fertile highland area generally have very different options from those living in a semi-arid lowland area. In highland areas people can generally pursue an agricultural pattern of livelihood, while in the lowlands they can grow few crops and will be either pastoralists or agro-pastoralists. Those living in a coastal or lakeside zone may follow a livelihood based upon fishing or combining fishing with other activities, and so on.

Agro-ecology is only one aspect of geography which determines patterns of livelihoods, however. Another is market access, since this affects the ability of people to sell their production (crops or livestock or other items) and the price obtained for it. Since patterns of livelihood depend so much upon geography, it makes sense to divide a country or a region into a number of **livelihood zones**. These we can define as areas within which people share broadly the same pattern of livelihood (i.e. broadly the same production system - agriculture or pastoralism for example - as well as broadly the same patterns of trade/exchange).

Livelihood zone boundaries do not always follow administrative boundaries. It is, for example, quite common to find different patterns of livelihood within a single administrative unit (e.g. pastoralists living alongside agriculturalists, or agro-pastoralists alongside fishing communities). However, because resource allocation and service provision decisions are made on the basis of administrative areas, not livelihood zones, it is important that livelihood zone boundaries should wherever possible follow lower level administrative boundaries. In Djibouti, however, this has not been possible because only administrative level two (district) boundaries are clearly delineated, and patterns of livelihood in Djibouti do not neatly follow district boundaries.

The Wealth Breakdown: Geography is clearly not the only thing that determines the pattern of livelihood. Geography tends to define the different livelihood *options*, but the extent to which people exploit these options depends upon a number of factors, of which *wealth* is generally the most important. It is obvious, for example, that better-off households owning larger farms will in general produce more crops and be more food secure than their poorer neighbors. Land is just one aspect of wealth, however, and wealth groups are typically defined in terms of their land holdings, livestock holdings, capital, education, skills, labor availability and/or social capital. Defining the different wealth groups in each zone is the second step in a food economy analysis, the output from which is a **wealth breakdown**.

The Food Economy Baseline²: Having grouped households according to where they live and their wealth, the next step is to generate **food economy baseline** information for typical households in each group for a defined reference or baseline year. This involves investigating the different sources of food and cash income and their relative contribution to the household budget over the year as a whole. It also involves developing a **seasonal calendar** of activities to see how access to food and cash income varies within the year. These types of information are critical in terms of understanding how households living at different levels of wealth and in different zones will be affected by a particular hazard. It follows, for example, that households that depend heavily upon local livestock production will be affected quite differently by drought compared to those that have relatives living and working in the capital city from whom they receive regular assistance or remittances.

Hazard: Food economy baseline data provide a starting point for investigating the effect that a hazard will have on livelihoods and household food security. Hazards may either be natural (e.g. drought or flood) or man-made (e.g. conflict or market dislocation). The consequences of a hazard will vary according to the hazard itself and according to the local pattern of livelihood. A drought may result in a loss of crop or livestock production, loss of crop and livestock sales income, loss of farm-based employment, etc., posing a threat to households that are heavily dependent upon crop or livestock production or upon local agricultural labor. Insecurity, on the other hand, may be associated with the theft of crops or livestock, reduced access to certain areas (markets, wells, grazing areas or fields) and disruptions to trade and transportation, all of which will pose a threat to groups living in, moving through or trading with the insecure area.

Response: When exposed to a hazard most households will do their utmost to try and deal with its effects. If the hazard tends to reduce their access to certain sources of food and/or cash income they may try and expand other sources, or they may turn to new or little used sources. Common response strategies³ in certain settings might include an increase in the collection of wild foods, an increase in the sale of livestock or temporary out-migration in search of employment. Where these strategies are effective, they can significantly reduce vulnerability to a range of hazards. It has to be borne in mind, however, that response strategies may have long-term as well as short-term effects, some of which may ultimately undermine local livelihoods, e.g. the sale of productive assets, the unsustainable sale of livestock, an increase in the sale of firewood where this has negative environmental effects, and so on.

What is in a Livelihood Profile

The profiles are divided into a number of sections:

Main Conclusions and Implications summarizes the main findings from the zone. This section also provide insights that will inform the planning of various types of intervention, including emergency response, disaster mitigation and development programming.

Zone description offers a general description of local livelihood patterns (crop production, livestock rearing, off-farm income generation etc.).

² Note that the information provided in the profiles does not constitute a full food economy baseline. A full baseline provides quantitative information on the *amounts* of food accessed and the *amounts* of cash income generated from different sources for at least three main wealth groups within a livelihood zone. The livelihood profiles, in contrast, include information on the *proportional contribution* of different sources of food and cash income to the whole. Put simply, the units of measurement for a food economy baseline are kilocalories (i.e. food energy) and cash, whereas the unit of measurement for a livelihood profile is percentage of total. The national livelihood zone map and livelihood profiles are designed as a stand-alone product (see section on Uses of the Profiles), but they are also intended as an intermediate step towards the development of a full food economy baseline.

³ The term response strategy is preferred to coping strategy for two reasons. Firstly, the term coping strategy is often used to refer to regular components of everyday livelihood (e.g. firewood sale), which strictly speaking are only coping strategies when intensified in response to a hazard. Secondly, 'coping' can be taken to imply that the strategy in question is cost-free, which is not always the case.

Markets contains basic information on the marketing of local production and on any importation of staple food into the zone.

Seasonal Calendar sets out the timing of key activities during the year. This is useful in a variety of ways, e.g. to judge the likely impact of a hazard according to its timing during the year, or to assess whether a particular activity is being undertaken at the normal time in the current year.

This is followed by four sections that provide the **core information on the 'food economy'** of the zone (see preceding section):

The **Wealth Breakdown** section describes three main wealth groups ('poor', 'middle' and 'better-off'), explaining the differences between these groups and how this affects potential access to food and cash income⁴.

The **Sources of Food** and **Sources of Cash** sections examine patterns of food and cash income at each level of wealth, relating these to the characteristics of each group.

The sections on **Hazards** provide information on the different types of hazard that affect the zone, differentiated by wealth group where this is appropriate.

Response Strategies describes the various strategies available to different types of household in the zone, together with a judgment of the likely effectiveness of these.

Early warning involves identifying and interpreting key events that indicate that a severe food shortage or famine may be developing. The final section, **Indicators of Imminent Crisis**, draws upon the classification of early warning indicators proposed by Fred Cuny⁵. This section provides information on the key indicators and their likely timing by zone, based upon an understanding of local livelihoods and local patterns of response to food shortage⁶.

Methodology

The livelihood zone map and profiles presented here have been compiled through a combination of interviews and workshops with national and Wilaya (Regional) and Moughataa (District) level key informants and also with reference to existing secondary data sources. At a national workshop in November 2003 a preliminary national livelihood zone map and a brief description of each zone were prepared by participating key informants. In February/March 2004 three field teams were formed to visit administrative centers within each livelihood zone (or in the case of Zone 1, Pastoral Nomads, in Nema and Chinguetti, since there are none within the zone). Here meetings and interviews were organized to refine the preliminary map and collect further information on each of the zones in order to construct the typical livelihood profiles. Rapid village visits were conducted to cross-check the information provided by the key informants.

⁴ It is important to bear in mind for this analysis that we are thinking of wealth in relative (and local) terms. Statistical data may indicate that 80% or even 90% of the population in a particular area lives below the national poverty line, but this is measuring poverty on a national, absolute scale. In a livelihoods analysis we are interested in understanding some of the differences between different groups within the community and the reasons for these – in which case it is not particularly useful to lump 80% or 90% of the population together into one group.

⁵ 'Famine, Conflict and Response: A Basic Guide', Cuny F. C. and Hill R. B. Kumarian Press, 1999, pp 33-42.

⁶ Fred Cuny identified two types of early warning indicator, those that provide advance warning of a famine (indicators of imminent crisis) and those that confirm the existence of famine (indicators of famine). The latter group includes indicators such as distress sales of productive assets (e.g. plough oxen), consumption of seeds, increased malnutrition and increased mortality. Indicators of famine are not generally context specific (i.e. a single list could be prepared that would apply to all livelihood zones). They are also of little use in predicting or preventing severe food shortage or famine. For these reasons they have not been included in the livelihood profiles.

Chad Livelihood Profiles

National Overview

Introduction

Despite its potentially strategic location for trans-African commerce, Chad continues to struggle with high levels of poverty and underemployment. Population density increases as one moves southward: about half of the population lives in the southern belt (one-fifth of the country's territory), the location of most of Chad's major cities including the capital city N'djamena. The south also has relatively high investment in industry, including newfound petroleum deposits. Of the population remaining, the majority reside in the central belt, while only about 100,000 pastoralists live in the Saharan region in the north.

The economy is in great part agricultural and pastoral, as petroleum production is a recent development (since 2000). Over three-quarters (76%) of Chad's population of approximately 9.5 million live in rural areas and mainly make their living by subsistence cultivation, herding and/or fishing. Locally produced cereals are generally sold for consumption within Chad. Cotton production in the south provides the principal cash crop as well as significant rural employment. Apart from the petroleum sector, industries are limited to processing salt (natron), cotton and meat products, and the production of bottled beer, soap, cigarettes and construction materials.



Although poverty is widespread, considerable wealth differences between households in a given community do exist and are relevant to household food security in the face of natural and man-made hazards. When there is serious crop failure due to poor rains and/or pest attacks, it is the level of household assets and savings which determines which households will be able to comfortably purchase sufficient food and which will either be impoverished by the extra food purchase or finally go hungry. In Sahelian areas the availability of land is often not primary constraint; it is the capacity to use land which counts, both in terms of labor and inputs. Better-off households have a higher productive capacity, because they tend to be larger than poorer households and have more working hands, are generally able to employ additional labor for domestic production, and are more likely to own productive assets such as ploughs, traction animals and fishing boats. They also own more livestock, which are in fact the main target of investment of profits and the main asset marketed when extra food needs to be purchased. Better-off households support poorer households through employment as field hands and contract herders, as well as through gifts and loans often in the form of grain. However, during difficult years there are fewer resources to go around, and the poorer households are progressively thrown back on dependence upon their inadequate assets and savings.

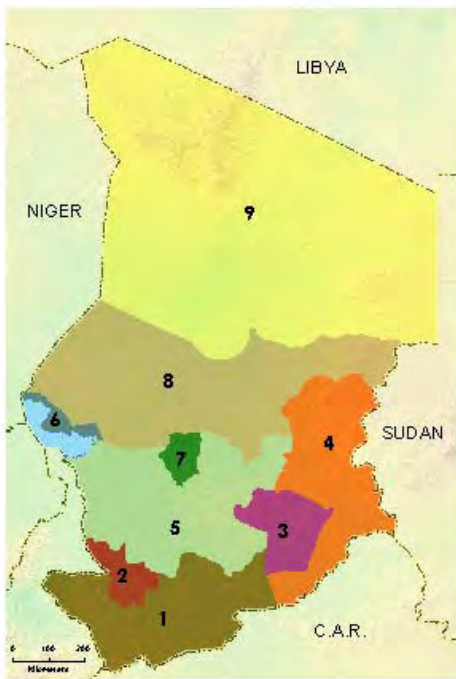
Geography and Climate

Chad is a landlocked country approximately 1.3 million square miles in size. Of that area only a minority receives enough annual rainfall in the single rainy season to allow crop cultivation, whilst the north is the domain of pastoralists who sell animals to purchase grain, and finally of outright and extensive desert. Yearly rainfall ranges from virtually zero in the desert, through 350mm in the central arable areas to over 800mm in the far south. Whatever the average annual rainfall in a given belt, there are wide inter-annual swings in total precipitation as well as in favorable spacing of showers over the season, and in much of the arable south there is roughly one 'poor' year in three. However there are important areas of flood-retreat

agriculture on annual river flood-plains in the far south-west and south-east, favoring the production of rice and sorghum/millet respectively. Lake Chad supports active fishing in several livelihood zones.

Chad shares a flourishing cross-border trade, especially with Cameroon, the Central African Republic and Sudan, exchanging livestock, groundnuts and market garden produce in return for manufactured goods, sugar and other items. There is also a trade exchange with Libya via both trucks and camel caravans. Although the road network is currently being upgraded in some areas, in many zones poor roads constrain market exchange and affect market prices, especially during the rainy season in more remote areas, as roads become waterlogged and impassable for hours and days at a time.

Sources of Food and Cash: Main Findings and Implications



Sources of Food:

Different zones (and wealth groups within them) present different balances between own crops and animal products on the one hand, and market purchase on the other. In the Eastern Rain-fed Cereals zone, where harvests are relatively substantial, better off households are usually able to satisfy nearly all their cereal needs. But poorer households depend on purchasing grain from the market, as do the poor in nearly every other zone. The Northern Transhumant Herding zone provides a contrast: crop production is limited so that even the better off are only able to satisfy about one-third of their household requirements, and both they and the middle group depend heavily on market purchase. The poorer group, however, who make a major part of their living by working for others, tend to receive payment in kind which amounts to a far greater proportion of the grain they eat than what they purchase on the market. It is notable that in pastoral areas, although more milk is drunk than elsewhere, it is purchased grain (or grain received in payment) which is by far the main staple in the sense of providing the bulk of calories, even amongst households with substantial herds.

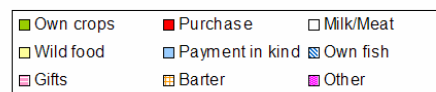
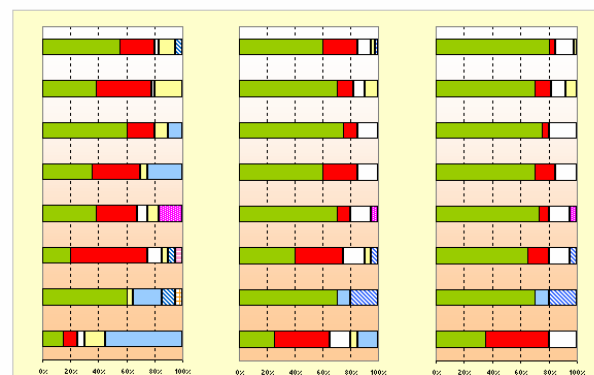
Food Economy Zones

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- 8 Northern transhumant herding zone

Poor

Middle

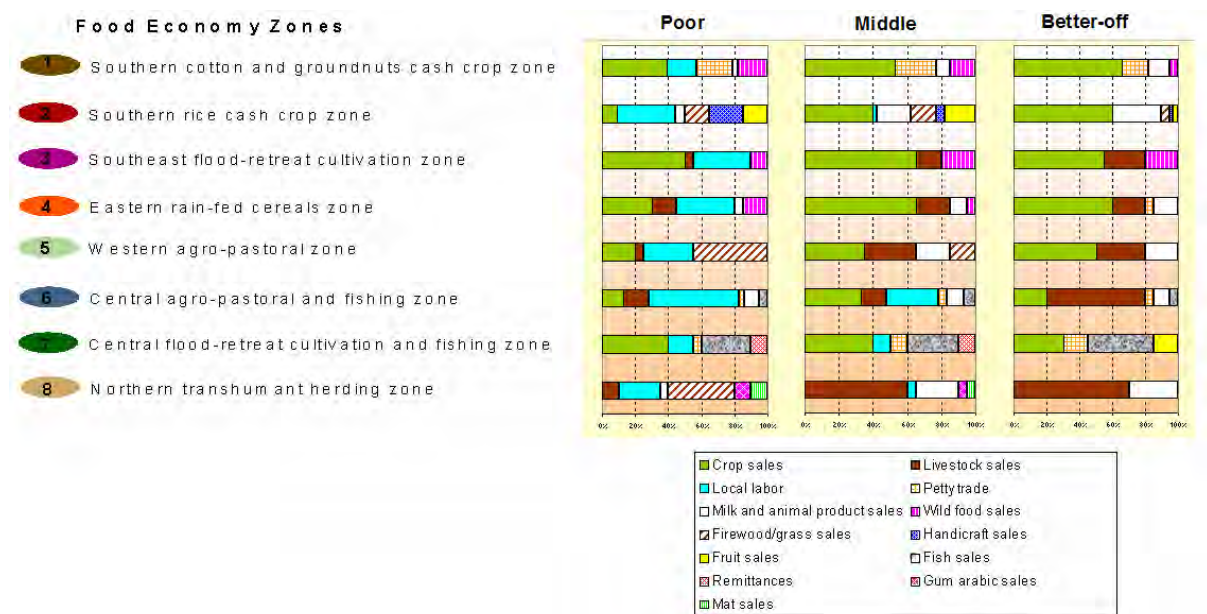
Better-off



Lesser food sources include gifts, loans, small scale fishing, hunting, and the gathering of oily shea nuts, wild fruits, and spirulina from Lake Chad. Payment in-kind features especially during the pre-harvest hunger gap when food stocks are low and market prices high. This practice increases during a difficult year. Gifts to the poorest are especially important in the northern, Moslem part of the country where the practice of Zakat places a charitable obligation on those who have to make a donation to those who have not.. Poor households in some zones, notably the South-eastern flood-retreat cultivation zone, borrow food during the months just prior to a harvest when their stocks have generally run out. The loan is repaid out of the forthcoming harvest, often in an amount reflecting the cash value of the original loan; this is in effect a means of food purchase with deferred payment at high cost.

Sources of Cash

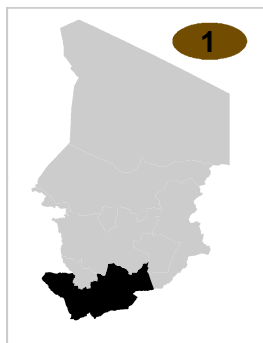
Whilst the poor everywhere earn money by working for others, middle and better off households make money directly from their production, whether crops (including non-food cash crops) livestock, or fish catches (where ownership of equipment, especially boats, gives a great advantage). Better-off households are also able to sell their commodities for higher prices because they can afford the cost of transportation to more lucrative markets, e.g. livestock and fish to markets in Nigeria, and cereals to N’djamena. Seasonal labor includes working in fields, tending livestock, providing transport, fishing labor, brewing beer (in the south), making bricks, or low-wage employment in towns. Poor households, as well as some middle households, supplement their income variously by gathering and selling firewood (or charcoal) and wild foods and gum Arabic, through petty trade, and making and selling mats. The Central Flood-retreat Cultivation and fishing zone differs from the rest of the country in that there is a relatively high prevalence of household members migrating for work in Ndjamenana or other towns, occasionally sending remittances home. The need for (usually) men from poor and some middle households to sell their labor limits the time available for their own productive activities, which to some extent therefore fall not only to women but to children.



For poorer households, their own cereal production everywhere quite insufficient to cover household food requirements; yet they are obliged to sell some of their harvest in order to meet other immediate needs, as well as to pay off debts incurred during the lean months of the year, just before the harvest is ready. This is a serious annual constraint for many households because it limits their ability to profit from higher market prices, which often occur at the same time that loan repayments come due. This became a serious issue throughout cotton growing areas when delayed payment from the national board forced many poor households to sell their cotton harvest at reduced prices in order to earn some cash to pay back loans

Rural Livelihood Zone Summaries

1: Southern Cotton and Groundnuts Cash Crop Zone



This zone borders with the Central African Republic and Cameroon. The defining livelihood activity is the cultivation on the plains of rain fed cotton and groundnuts as cash crops. Since the late 1990s, cotton has been a very important source of income for the country. To the extreme east of this zone, rain-fed cereal crops are as important as cash crops. Livelihoods depends primarily on the profits from selling the harvest, which in turn depends on relative access to land, available labor for working in the fields, and to some extent on the market price (although proximity to international borders means that it is possible to find more lucrative markets if the local markets fail). Households supplement their crop

production with livestock which serve primarily as a source of savings and insurance. Compared with other zones in Chad this zone is relatively densely populated and grazing land for animals is limited. This limits poorer households to keeping only small animals while better off households can afford to contract for their cattle to be taken elsewhere for grazing, generally in Cameroon or the Central African Republic. Other elements of livelihoods include cash earning activities such as fishing, market gardening and working for others either in their fields or in town - where there has been some industrial development. Poor households also earn cash from petty trade and selling gathered products such as shea nuts and wild fruits. As yet the new oil rigs have not provided work opportunities for unskilled laborers. The improved road system to serve the petroleum industry will facilitate market exchange for this region where currently some roads become impassable during the rainy season.

Livestock

Cattle
Sheep
Goats
Pigs

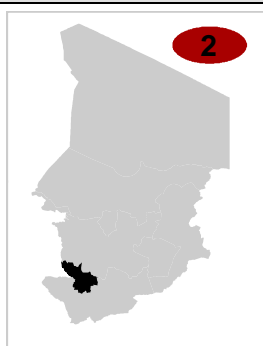
Main Income Sources

Cash crops
Food crops
Livestock
Labor
Hunting/
Fishing /
Gathering

Main Food Sources

Maize
Millet
Sorghum

2: Southern Rice Cash Crop Zone



This zone, bordering with Cameroon, is in a flood plain along the River Logon. There is much cross border trade of livestock and foodstuffs in return for especially kerosene and petrol.. Livelihood success depends on the area of land cultivated with rice, the major cash crop, which in turn depends on access to labor. Better off households benefit from being able to employ people to work in their paddies while the poor, often with few working hands and no capital, produce relatively little staple food (sorghum/millet) or rice on their own account and the need to diversify their sources of food and cash by working for others and selling craft objects and gathered fuel-wood. To the extent they can afford to, households keep livestock both for

both food and cash (pigs, goats, chickens) and to act as insurance in a difficult year (cattle amongst the middle and better off). But livestock are relatively few compared with other zones, given the intensive arable uses of land. Other activities include small-scale fishing and fruit growing. With relatively high rainfall, this zone is prone to flooding which can isolate villages for days at a time and which has a short term impact on local market prices. The recent development of the petroleum industry within this zone has increased the cost of living in urban centers near the rigs.

Livestock

Cattle Sheep
Goats Donkeys
Pigs

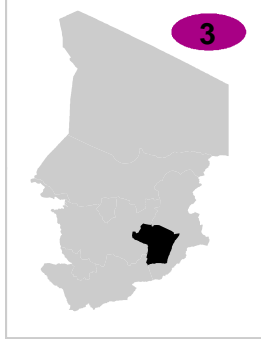
Main Income Sources

Food crops
Livestock
Agricultural
Labor
Craftwork

Main Food Sources

Rice
Taro
Sorghum
Millet

3: Southeast Flood-Retreat Cultivation Zone



This zone is located in the flood plains of south-east Chad and is characterized by the cultivation of off season crops (i.e. main crops cultivated after the end of the rainy season) which are adapted to the clay soils which hold in moisture. A smaller harvest comes from crops cultivated in the rainy season, mainly by poorer households. The heavy volume of rain renders roads waterlogged, isolating parts of this sparsely populated zone from the rest of the country for days at a time. This has a short term impact on market prices. Wealth is primarily based on extensive cereals cultivation, and the better off commonly employ members of poor households to work for them. Cattle are relatively numerous, and even a poor household may own one two beasts, providing a safety net during a difficult year, although not a reliable buffer against severe economic shock. But normally even the poor are able to cover over half of their needs from their own production, making up the remainder through a combination of gathering, and daily labor. They often resort to 'borrowing' food during the hunger gap, which is repaid at a higher rate from the following harvest. Strong family ties within the Central African Republic are important for facilitating cross-border trade and grazing.

Livestock

Cattle
Sheep
Goats
Donkeys
Horses

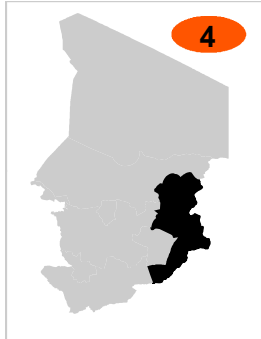
Main Income Sources

Food crops
Market gardening
Livestock
Labor
Gathering

Main Food Sources

Off-season
Millet
Sorghum
Maize

4: Eastern Rain-fed Cereals Zone



This sparsely populated zone borders with Sudan, stretching down to the Central African Republic. There are good opportunities for cross border trade where animals from Chad are exchanged for manufactured goods and fuel. Livelihoods are based on the cultivation of rain-fed cereals complimented by small scale livestock rearing and market gardening. Rainfall is highly variable from year to year, with either insufficiency or flooding about one year in three. The area of land cultivated depends on household labor availability more than on land ownership. Poorer households compliment their own production of food, which normally covers less than 40% of their needs, by working for others, receiving payment in

both cash and in kind. Market gardening, especially of onions and garlic, is important and produce is sold in N'Djamena and neighboring Central African Countries. Cereals and other crops grown in this zone are primarily sold within Chad. Cattle are kept in some numbers by better off and middle households, whilst the poor are only able to keep goats or sheep in any number. The zone forms part of the migration pathway of the transhumant herders who move from the north to the south during the dry season and returning north at the start of the rains. This boosts the main livestock markets within the zone. In the rainy season some roads, especially those in the south, become impassable for several hours or days at a time which has a short term impact on local market prices.

Livestock

Cattle
Sheep
Goats
Donkeys

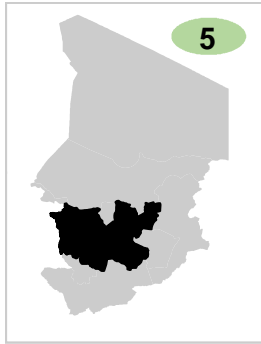
Main Income Sources

Food Crops
Livestock
Labor
Trade and Crafts
Gathering

Main Food Sources

Millet
Sorghum

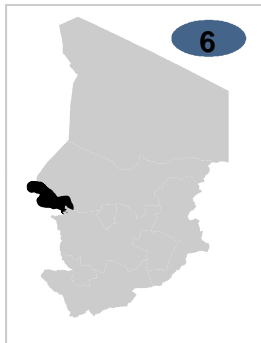
5: Western Agro-pastoral Zone



This large zone stretches eastwards from the southern edge of Lake Chad and covers a large part of the south-centre of the country bordering the eastern flood-retreat cultivation zone. The zone encompasses variations in reliance on sedentary livestock ownership and on agriculture. Livestock are more important further north where it is semi-arid, whilst agriculture is predominant further south where annual rainfall is higher. The rivers in the west provide a valuable alternative livelihood option through small-scale fishing and this part of the zone is relatively more populated. Livelihood success is dependant on having enough animals to supplement food crops as well as to provide insurance during difficult times. Households without sufficiently large herds must additionally rely on activities such gathering of honey and gum arabic, market gardening or trade to survive those years (about one in every three) when rainfall is poor and households become more dependent on purchased cereals. N'djamena normally provides a valuable market for selling produce, while in a difficult year it acts as a source of grain and potential employment

Livestock
Cattle Sheep Goats
Main Income Sources
Food crops Livestock Agricultural Labor Gathering Trade
Main Food Sources
Sorghum Millet Off-season millet

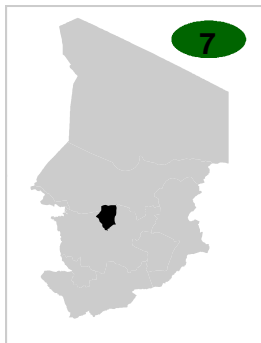
6: Central Agro-pastoral and Fishing Zone



This zone is in the semi-desert area around the diminishing Lake Chad in the west on the border with Niger and Nigeria. Livelihoods within this sparsely populated zone depend on the combination of agriculture in the lake bed and temporary streams, livestock herding, and fishing in varying balance depending on wealth and on proximity to the lake. There is an important cross border trade in livestock and natron (ground salt), especially into Nigeria which also provides an important market for smoked fish. Better-off households near the lake have the advantage of ownership of small fishing boats and nets while the poor rely heavily on seasonal labor provided through small-scale fishing activities. Livestock are the key to survival in difficult years and households will migrate far with their herds in search of grazing land. However poor households tend not to own sufficient animals to be able to withstand severe economic shocks. Animals are herded on the islands in the middle of Lake Chad during the dry season but spend the rainy season around the homestead.

Livestock
Cattle Goats Donkeys
Main Income Sources
Food crops Livestock Fishing Seasonal Labor Trade
Main Food Sources
Millet Maize Beans Wheat

7: Central Flood-Retreat Cultivation and Fishing Zone

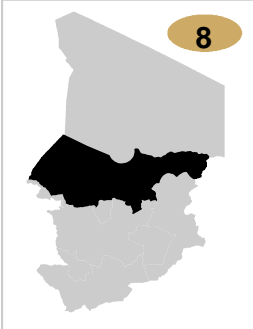


This zone, located around Lake Fitri is in the centre of Chad, is surrounded by strongly livestock based economies and forms part of the migration corridor for the transhumant herders. Livelihoods in this sparsely populated zone depend on the cultivation of both off- season and rain-fed crops combined with fishing in the lake and some herding of goats and sheep. During the rainy season the local market prices are often temporarily affected by the isolation of villages as roads become waterlogged. Livestock are an important element, and the majority middle households commonly own some 10 cattle and 30 small stock. But the main keys to wealth in this zone are access to sufficient family and/or hired labor for cultivating and fishing, ownership of small fishing boats and nets, and ability to find lucrative jobs in

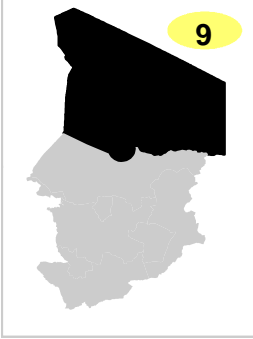
Livestock
Cattle Sheep Goats
Main Income Sources
Food Crops Fishing Local labor Remittance Trade
Main Food Sources

town. A distinguishing characteristic of this zone is the fact that most households have someone who is working in town at least some months of the year who will occasionally send money home to support family in the rural areas.	Off-season millet Sorghum Rain-fed millet
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8: Transhumant Livestock Zone	
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	<p>This extensive zone forms a belt across the centre of the country, extending from Niger across to Sudan and dividing the desert north from the arable south. Successful livelihoods depend on the size of the livestock herd with animals providing cash income as well as food: purchased cereals (or cereals earned by the poor as in-kind payment for labor) provide far more food calories to all households than animal products. The zone - 'home' is the location where the transhumant herders start and end their annual migration in search of grazing, which takes them far into zones further south. . During the migration period, herders use their animals to earn money by providing transport, manuring people's fields and by selling them in exchange for grain. While part of the household travels with the animals for most of the year, some household members stay behind and cultivate cereals during the rainy season. The harvests are small compared with the other zones in Chad Wealthier households supplement their income by selling natron (ground salt) while poorer households work for them, and make charcoal and sell gathered wild foods. Access to natron in this zone is limited because the mines are privately owned.</p>	<table border="1"> <tr> <td data-bbox="1234 331 1412 378">Livestock</td> </tr> <tr> <td data-bbox="1234 378 1412 504">Cattle, camels, sheep, goats, donkeys, horses</td> </tr> <tr> <td data-bbox="1234 504 1412 577">Main Income Sources</td> </tr> <tr> <td data-bbox="1234 577 1412 756">Sale of: Livestock Gathered products Labor Craftwork</td> </tr> <tr> <td data-bbox="1234 756 1412 829">Main Food Sources</td> </tr> <tr> <td data-bbox="1234 829 1412 919">Millet Sorghum</td> </tr> </table>	Livestock	Cattle, camels, sheep, goats, donkeys, horses	Main Income Sources	Sale of: Livestock Gathered products Labor Craftwork	Main Food Sources	Millet Sorghum
Livestock								
Cattle, camels, sheep, goats, donkeys, horses								
Main Income Sources								
Sale of: Livestock Gathered products Labor Craftwork								
Main Food Sources								
Millet Sorghum								

9: Northern Transhumant Herding Zone	
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	<p>Data is not yet available for this zone of nomadic herders and desert.</p>	<table border="1"> <tr> <td data-bbox="1234 961 1412 1039">Livestock</td> </tr> <tr> <td data-bbox="1234 1039 1412 1165">Main Income Sources</td> </tr> <tr> <td data-bbox="1234 1165 1412 1323">Main Food Sources</td> </tr> </table>	Livestock	Main Income Sources	Main Food Sources
Livestock					
Main Income Sources					
Main Food Sources					

Chad Livelihood Profiles

Zone 1: Cash crops: Cotton and Groundnuts

Main Conclusions and Implications

Households in this zone combine the cultivation of cash crops with cereals and some livestock ownership. This is a densely populated part of the country, with many people attracted by the potential work opportunities related to the petrol and other industries. The result is that field sizes and available grazing land are relatively limited. This situation is exacerbated when the transhumant herders pass through on their way south at planting time and return north just before the harvest. This is likely to become a cause of disputes as the land available for migration corridors for these large herds becomes more restricted. The viability of livelihoods within this zone is heavily dependent on households labor capacity – notably to undertake paid labor - and on the sale of cash crops, in particular cotton and ground nuts.. Industrial development in this and neighboring zones could lead to increased labor opportunities within the zone; on the negative side, an influx of migrant workers could result in an increase in the prevalence of HIV/AIDS.



Zone Description

The defining activities of this food economy are the cultivation of rain fed cotton and groundnuts as cash crops on the plains. Households also grow sorghum, rain fed millet (*penicillaire*) and maize for home consumption. Sorghum, millet, beans (*niebe*) and groundnuts are often intercropped to increase yields and maximize land use. Since the late 1990s, cotton has been the most important source of income for the country, averaging 42% of total value of exports between 1997 and 2002. Groundnuts are also economically important although there are no statistics available to quantify this. In the west of this zone, towards the border with Cameroon, livestock are relatively more important than in the east. While this is partly cultural, it also reflects the proximity of potential markets in Cameroon and the higher demographic pressure in the east.

This geographical zone stretches across the border with Cameroon in the West and the Central African Republic in the south, encompassing the administrative departments of Kabia, Lac Iro, Logone Oriental and Occidental, Mandoul, Mayo Dala Monts de Lam and parts of Tandjile Est and Ouest. The soil is laterite with a combination of sand and clay which becomes rockier towards Cameroon. A number of temporary rivers provide opportunities for fishing during the rainy season, in addition to the small lakes (Iro, Léré, Tikem, Wey and Trene). There are pockets of soil erosion which eventually form deep gullies; the land cannot be cultivated in some parts of the zone and this worsens with each rainy season. The zone enjoys a relatively high average annual rainfall of 800 to 1000 mm / year, with the extreme south having the highest rainfall.

Compared to the rest of Chad, this zone is relatively densely populated, with an estimated population of just fewer than three and a half million people in many ethnic groups, who follow predominantly Christian and Animist practices. As there is limited grazing land, many herders take their animals west into Cameroon or south into the Republic of Central Africa in search of pasture land, especially during the agricultural period

when the animals need to be kept away from the crops. The transhumant herders from the north rest here, sometimes spending around three months during the dry season, which increases the local availability of milk. Households may cultivate small plots of sweet potatoes and cassava in addition to their cereals. Pigs are valuable as domestic animals because they multiply rapidly, but they can be difficult to raise and therefore only some households keep them.

The south of Chad has seen some industrial development and the various small factories (cigarettes cotton and soap) provide potential opportunities for employment although they are no longer working at full capacity. The proximity of the oil fields has not yet increased work opportunities for the communities within this zone because skilled laborers are required. There is a relatively good road network passing through this zone, linking N'djamena, the oil rigs, Cameroon and the Central African Republic. However each year between July and September some roads can become impassable for several hours or days at a time due to water logging. Because of the new developments within the zone, in particular the petroleum industry, a project has already begun to surface many of the major roads, and this will reduce the relative isolation of many villages and small towns. The downside to this industrialization is that this zone has the highest prevalence of HIV / AIDS recorded in the country⁷. While this is to date more an urban than a rural phenomenon, the villagers are affected when they lose family members working in town., and it is the rural households who usually take on widows and orphans.

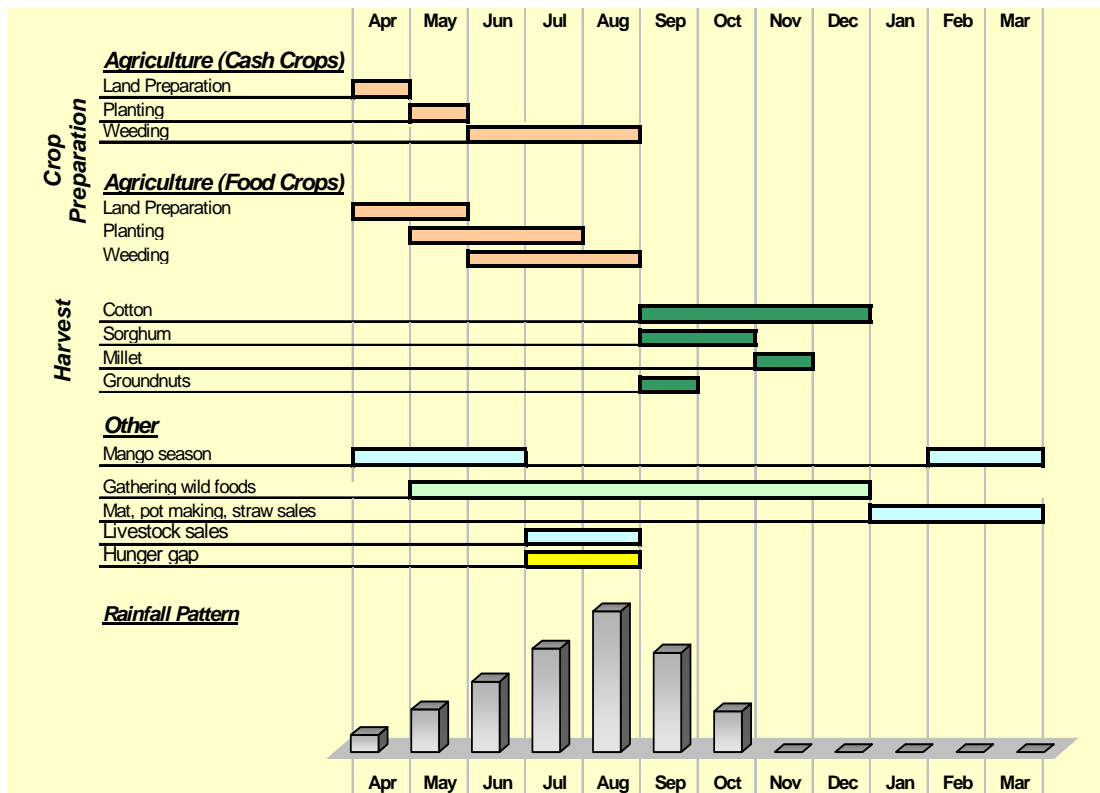
Markets

The main local markets for the sale of livestock and cash crops (apart from cotton) are conduits for exportation to Cameroon. The main staple cereals purchased are millet, sorghum and rice, all of which are grown within Chad. Prior to the recent economic difficulties that the company *Cotton Tchad* faced in 2002, cotton was mainly sold through factory outlets which sent buyers to the villages to weigh and collect the harvest. However recently, many households have been left with the crop uncollected in their fields. People near the border can sell their cotton in Cameroon, for which they obtain a higher price than they can get within Chad. Groundnuts cannot be stored because they are prone to attack by insects therefore the main period for sale is October / November. The main markets for the sale of groundnuts and the purchase of staple cereals are at Pont Carol, Deli and Bodo. From Pont Carol, groundnuts are exported to Cameroon. The main markets for cattle and goats are at Pont Carol and Fianga, the latter being a major trading point for animals which are then sold on to Cameroon. During the rainy season, prices for shea-nut butter are especially high (at three times the price during the dry season they fetch roughly the same price as an equivalent sack of shelled groundnuts).

Seasonal Calendar

The agricultural year starts in April with the clearing and preparation of fields ready for planting cotton. Farmers are provided with insecticides and other necessary agricultural inputs on credit by the *Coton Tchad* factory, to be repaid out of the profits of the forthcoming harvest. Between June and August, farmers are busy with weeding and spraying their crops. Cotton is picked little by little, and the harvest that starts in September can last for up to four months. The cotton 'middle men' who tour the villages collecting the harvest can arrive at any time after the harvest. Groundnuts are sown and harvested at the same time as cotton but require fewer agricultural inputs. With the repeated cultivation of cotton, the soil is becoming infertile and this, together with the recent poor prices for the harvest, means that the area under cotton is gradually decreasing in favor of groundnuts. Most farmers use cattle drawn ploughs and carts, either their own for farming and transporting the harvest of groundnuts and cereals. The farming cycle of sorghum and millet follows on that of the cash crops: once the cotton-fields are planted, the cereals are then sown, intercropped with groundnuts and sometimes cowpeas (niébé). Maize is usually planted in small plots around the house where, thanks to the benefit of household waste, yields are often higher than in the fields. June to October are the busiest months in the fields and this is the time when poorer households are able to find employment working on the fields of their wealthier neighbors. Once the harvest is completed, and the


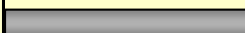

⁷ National Health Statistics indicate a sero-prevalence rate of 5.82% for women at sentinel sites in 2002. Moundou had the highest rate at 11.86%.



groundnuts and cereals either bagged for sale or stored in the granary, households enjoy a few months of relative rest from hard labor. They use this time to repair their granaries and homes, collect straw which they use for thatching roofs and making fences and making mats and pots for domestic use or for sale. The hunger gap, when cereal stocks are generally low and households have to rely on other means for obtaining food, coincides with the time when most animals are sold, to purchase food until the next harvest is due. The main wild foods include the fruits *neré* and *mouie* (from May to June), shea butter (from June to July), and the doum-palm fruit between October and December.

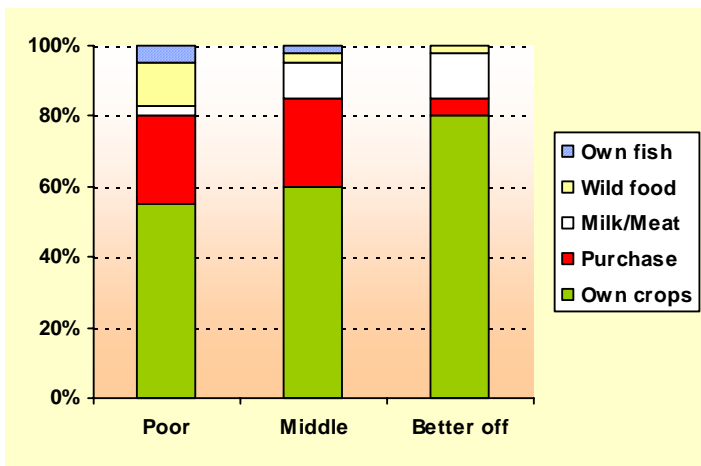
Wealth Breakdown

Wealth in this food economy is mainly linked to the cultivation of cotton and groundnuts. The main limit to the area of land under cultivation is the availability to the household of labor. Poor households are constrained by their small household size whereas the middle and better off groups usually have more working family members and in addition the latter hire labor on their fields. They also benefit from the manure from their cattle and can usually afford to purchase other necessary inputs, and have a more

		Wealth Group Information		
		HH size	Area planted and how	Livestock
Poor		5-7 members	2 hectares using household labour	3-5 goats, chickens
Middle		10-12 members	4-5 hectares using household labour	10-20 cattle, 25-35 sheep / goats, chickens
Better-off		12-17 members	10+ hectares using household labour and employing others	10+ cattle, 40+ sheep / goats, chickens
0% 30% 60%		% of population		

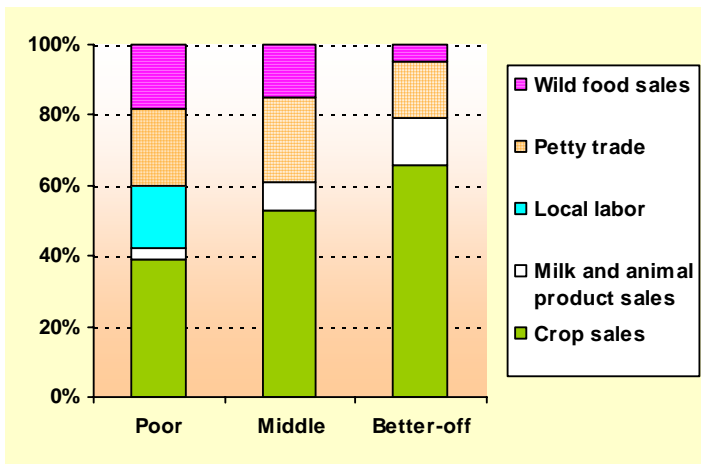
effective system of land preparation thanks to their ox-drawn ploughs. A typical better off household might have four or five pairs of draught animals so that they can rent out teams for cash, the income earned depending on the size of the field the animals have to plough. The poor on the other hand principally use the local hoe (*daba*) for agricultural work, although some may have a 'Western' hoe as well. They sometimes work to earn money to borrow a plough, but in doing so they risk planting late in the season and this can further reduce their expected yields. Although the poor buy insecticides and fertilizers for their cotton on credit, they often try to economize by selling on some of the inputs and diluting the rest to use on their fields. As a result they generally can expect yields about three quarters of those enjoyed by the better off. Other than manure, inputs are generally not used for growing staple food crops. There are typically more weddings following a good harvest, because the number of wives and hence children and eventual working hands is seen as an important link to wealth.

Sources of Food



All households produce more than half of their annual food needs in their fields, with a small percentage from their own animals as well. The poor depend more on the market, wild foods, fishing and hunting to meet their requirements than other wealth groups, which is a reflection of their relatively small fields and animal herds. Fishing is practiced on a small scale in small streams, with lines and nets. The wild foods collected include the oily shea nut, which is added to sauce, and some wild fruits.

Sources of Cash



Poor households depend heavily on the better off for their income either by working on their fields or by selling their cotton harvest to them at a low price, in order to have some immediate cash to repay loans. This is especially prevalent when the official payment for cotton is late. Cereal sales are minimal for all wealth groups because households tend to cultivate relatively small fields, preferring to concentrate their efforts on the more remunerative cash crops. Sales of wild foods such as shea butter, *nere* seeds and jojoba are relatively profitable and nearly all households engage in it. Local beer (*bilibili*) made from sorghum is brewed and sold widely.

Hazards

Chronic/frequent hazards: Every year, the northern transhumant herdsmen pass through this zone on their grazing migration. This is a source of dispute whenever the animals stray into the fields and destroy the

crops - exacerbated by the fact that the herders pass through in April/May and again in November/December coinciding respectively with the periods of planting and harvesting. Other annual dangers to crops include crop diseases and insects. Newcastle Disease affects poultry on an annual basis and there are also various endemic cattle diseases. When people light fires to clear their fields and chase out small rodents after the harvest, the fire sometimes spreads too wide and as a result reduce the availability of firewood and straw (for thatch and animal feed).

Periodic hazards: About one to three years in ten there is inadequate rainfall, either in terms of total volume or in the distribution of showers over the growing season. With this rainfall pattern, farmers risk losing their crops due to flooding. In 2002 there was an unexpected problem with payment for cotton and many farmers sold only a part of their harvest, for which they received less money that they had anticipated.

In the light of the above risks, a number of strategies have been adopted by households to minimize the impact on their economy and survival. For example over the past few years the area under cotton has been reducing, as households increase their cultivation of groundnuts instead. In some areas, where feasible, off season crops such as millet and vegetables are being grown and some farmers have begun growing short cycle food crops especially quick-maturing millet and sorghum varieties. In some villages, communal granaries have also been constructed.

Response Strategies

When the crop has failed or the payment for cotton is late this affects poor households in particular, who do not have many other options to fall back on. Usually there is an increase in activities already practiced normally, such as fishing, collecting wild foods, hunting, petty trade and making mats. Households also turn to making charcoal and there is an increase in the sale of animals, often at low prices. Initially smaller ruminants, pigs, chickens and ducks are sold but as the situation worsens so cattle including traction animals may be sold. There is an increase in for the search for casual employment by the poor, and some middle households also. If there is not enough work available locally then the more active members (usually men) of the households temporarily migrate to urban centers to look for work. When these options fail, households also turn to borrowing money, usually at extremely high interest rates (50-75%), which can then lead them into chronic indebtedness. Poorer households also turn to their wealthier relatives for assistance, some of which is given freely and otherwise in the form of loans. At the extreme, cooking utensils are sold.

Crisis Warning Indicators

- rains starting late, stopping in the middle or finishing early
- increased sale of animals especially traction animals and cattle, usually at low prices
- unusual migration of active household members (usually men) towards urban centers or to other agricultural regions to look for work
- sale of productive or household implements
- rates of daily labor decrease
- increase in the number of people asking for work
- increase in number of people asking for loans of food or cash
- purchase of staple foods in very small quantities (rather than by the sack) – because people cannot get together more than small amounts of cash at one time, and therefore actually pay higher prices for the retailed grain
- local weekly market transactions finish earlier in the day than usual

Chad Livelihood Profiles

Zone 2: Cash crops: Rice

Main Conclusions and Implications

The cultivation of rice in the flood plains is a key source of cash income. However, apart from the vagaries of rainfall, which can easily be too much or too little, success in this type of agriculture is strongly dependent on the capacity to provide a labor force, including the hire of poorer people by the better off. In addition to crop production, households own some animals which act as safety nets when they are sold in periods of difficulty when extra cash is needed for food. The recent development of the petroleum industry in this zone could lead to increased labor opportunities within the zone, (but also to an increase in the prevalence of HIV/AIDS occasioned by a mobile workforce)



In

Zone Description

The main activities in this zone are the cultivation of rice in the flood plain primarily as a cash crop. Households also cultivate groundnuts as a cash crop although this is relatively insignificant and is mainly practiced by households in the south. The main food crop grown depends on the location. Mainly this is sorghum on small plots on the raised ground. In the north west of the zone households plant millet (*bérberé*) as well; in the centre around Kim, Eré and Djuman the preference is for taro while around Lai sweet potatoes are found. Households cultivate using local tools (*daba*) and many use cattle driven ploughs. The river Logon passes through this food economy zone and households living nearby fish using nets and pirogues. Compared with most of the other regions of Chad (apart from the cotton growing zone), this zone is relatively densely populated with an estimated population of around half a million people but there is still uncultivated land which could be put to use. It covers part of the administrative departments of Mayo Boneye, Tandjilé-Est and Tandjilé-Ouest.. The main ethnic groups are the Massa, Kim (including sub clans), Gabri and Marba.

Households keep some animals, but their herds are much smaller than are found further north of Chad. More cattle are found in the northern parts of this zone however. Goats are preferred to sheep apparently because it is less easy to steal them. Herders practice short distance migration moving into the agro pastoral zone to find grazing land. Between Lai and Bongor many households keep pigs as well, which provide a source of food and income. In some parts of the zone, households are surrounded by small banana plantations. These fruits are for home consumption and some are sold.

Agricultural success here is very sensitive to the rainfall which can easily be too much or too little because the clay soil is easily waterlogged. The annual average rainfall is 700-1000 mm / year. During the height of the rainy season many villages are effectively cut off because the roads are impassable due to flooding for up to several days at a time. This particularly affects villages near the river and prevents access to markets.

Households sell their rice as and when they need the cash, usually to traders who travel round the villages collecting rice for resale in N'djamena.

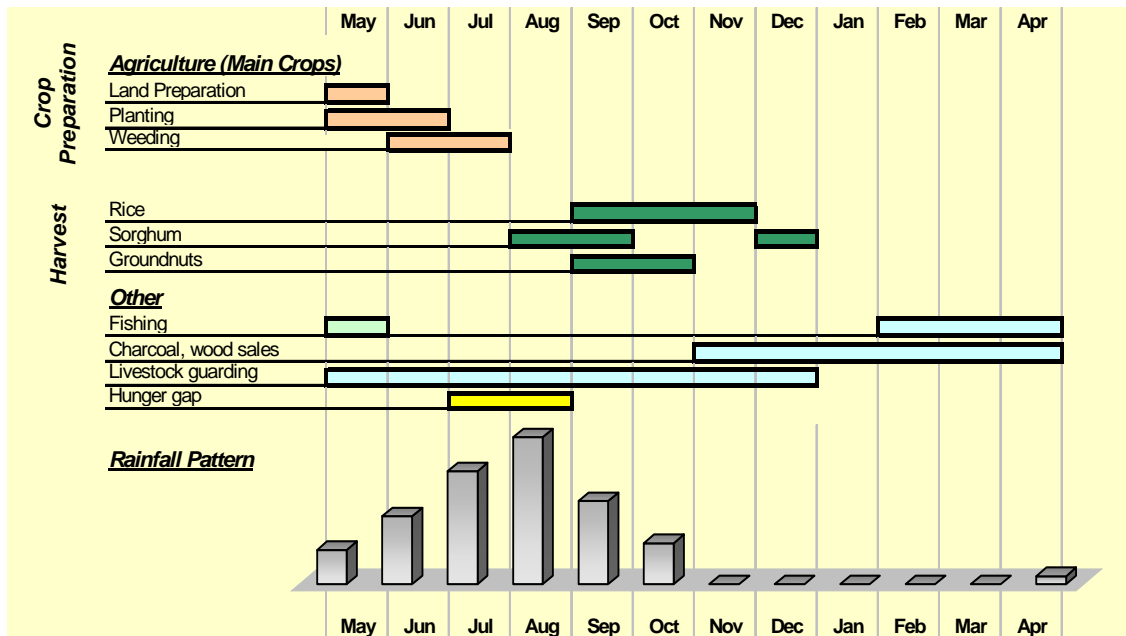
With the recent development of the petroleum industry within this zone, the cost of living in urban centers near the rigs has increased. This does not offer a source of employment for the villagers nearby because the rigs demand skilled labor. For the past ten years or so, there has been evidence of HIV / AIDS within the urban centers. The impact this has had on the rural areas has been that people return there for care when they become unwell. The rural households are also generally those that take on the care of widows and orphaned children as well. This is still a taboo subject however, especially in religious circles.

Markets

Rice is sold at village level to traders who charge a fee for transporting it to urban centers in particular N'djamena although there are also a number of major urban markets within the zone where rice is bought and sold. The price of rice increases around July while that of sorghum is highest in October / November. Only those households who can afford to wait until then are able to sell at this time. The main staple cereals purchased are sorghum and millet, while in some parts of the zone people prefer to buy cassava flour. Most staple food is purchased from May / June until the harvest. Groundnuts are difficult to store therefore they are mainly sold on October and November, just after the harvest. Cattle, sheep and chickens are the main animals that are exchanged on the local markets. The most important of these markets in the zone is at Pont Carol, while others include Bongor, Kim, Béré, Kelo and Laï. This zone borders Cameroon and there is a lively cross border trade, the main imports being sugar, chickens, kerosene and petrol while the exports are fish, rice and labor.

Seasonal Calendar

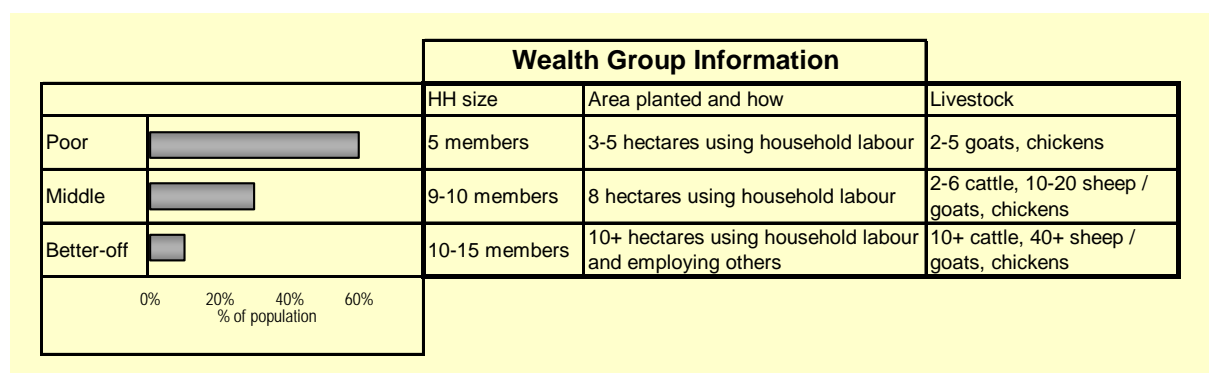
The agricultural year starts in May with the first substantial rains, when the fields in the flood plains are prepared ready for planting rice in June, after the sorghum has been planted. A household typically cultivates several small plots of sorghum or millet on raised land where the soil is better drained. Several types of sorghum might be sown including short and long cycle varieties. If groundnuts are grown they are



usually planted in the same field as the sorghum, and sometimes cowpeas (*niébé*) are intercropped with millet or sorghum. Similarly several types of rice are planted, both short and long maturing, which are ready for harvesting between September and mid-November. The harvested rice is sold in stages whenever the household needs the cash. The peak of agricultural work is during the months of May to August after which most of the crops have been harvested. The most difficult months are July and August, the hunger gap ending with the harvest of fresh maize grown around the house at the end of August, followed by sorghum and cassava / sweet potatoes / taro etc. During the ‘hunger gap’, the sale of firewood and charcoal increases. From November, cereal straw and stems are gathered for sale, and until the rains start again households collect firewood and make charcoal and bricks for sale. Between May and December livestock are tethered or herded out of the zone in order to keep them away from the fields. From January the small ruminants are left to browse in the fields but the cattle, especially draught animals, are kept well guarded against the risk of theft.

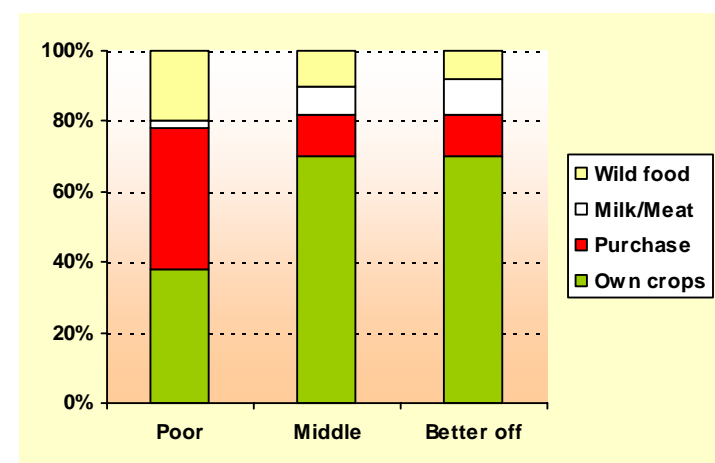
Wealth Breakdown

Wealth in this food economy is strongly linked to the area of land cultivated with rice. The main limit to the



area of land under cultivation is the availability of labor and equipment for the household. Poor households are tend to be those with relatively few working –age members and no capital for hiring labor or acquiring sufficient implements. Better off households have both more family hands and the capital to hire labor. In addition they have the benefit of ploughs, and manure from their cattle, and can usually afford to purchase fertilizers and pesticides, to have significantly higher yields of rice.

Sources of Food



Chemical inputs are generally not used for growing the staple food crops. Households meet their annual food needs through the same sources but in different proportions related to their wealth. Rich and middle households cultivate sufficiently large areas of cereal for this to provide around three quarters of their food needs’ whereas poor households depend heavily on purchased cereals. All households obtain some food from their own animals, as milk, butter or meat.

Sources of Cash



Poor households work on the fields, brew beer or make bricks for their better off neighbors, and these are their most important sources of cash for their essential food purchases. All households have straw in their fields after the harvest which they sell as thatch, but in relative terms this is insignificant for the middle and better off compared with their income from cash crop and livestock sales.

Hazards

Chronic/frequent hazards: This zone is part of the migration route for transhumant herders. Every year when they bring their animals there are disputes with the farmers over the damage to crops. The movement of the herders in search of grazing is related to the rains, and therefore just after planting they pass through on their way north, and they return at the time of harvest. Another annual risk to their crops is from birds or insects. Every year between July and October the soil becomes so waterlogged that many roads are impassable and villages are effectively isolated from the rest of the country. This in particular hinders the purchase of food during the time when stocks have often run out.

Periodic hazards: About one year in three the rain is insufficient for good crop growth. This problem is usually compounded by army worm which tend to attack after a period of rain failure. However with the same frequency the fields are flooded, which also destroys crops. About one in ten years there are serious outbreaks of animal disease, notably anthrax.

In the light of the risks of losing their crop to transhumant herds, households have developed a number of adaptive strategies including growing short cycle crops so that they can get the harvest in before the herders pass through. They also try to harvest as much as possible before the crop is properly dry in the fields although this adds to the burden of household labor requirements. Cassava cultivation in parts of this zone is reducing because the plant is too attractive to the cattle.

Response Strategies

When the cereal crop has failed, there is an increase in sale of animals. If there has been flooding, then households cultivate sweet potatoes or vegetables especially hibiscus and okra on the banks of the river after the rains have finished, benefiting from the remaining moisture in the soil. This is accompanied by an increase in gathering wild fruits and roots although some of these are difficult to prepare and the taste is not liked. Active members of households (usually the men) move to urban centers or other agricultural areas to look for work, including on road building projects. If these strategies are not sufficient then people borrow money or food usually with high rates of interest. This can be the trigger towards further impoverishment especially for poor households who then find it difficult to repay the loan and may be obliged to rent out

portions of their land the following year. At the extreme, household items or agricultural implements are sold.

Crisis Warning Indicators

- rains starting late, stopping in the middle or finishing early signals major problem
- Heavy rain starts too early (during the planting season).
- increased sale of animals, usually at low prices
- migration of active household members (usually men) towards urban centers or to other agricultural regions to look for work
- sale of traction cattle and other productive implements
- shortage of cereals available at the local weekly markets, combined with high prices of commodities
- daily labor rate decreases

Chad Livelihood Profiles

Zone 3: Southeast flood-retreat cultivation zone

Main Conclusions and Implications

This is a zone where the combination of relatively high rainfall and clay soil is unsuitable for agriculture during the rainy season. People have adapted to this by cultivating cereals just after the rains have ended and the surface water recedes, leaving moisture in the soil. In addition, people rear animals which act as a safety net as they can be sold in times of hardship. They also serve as traction animals thus enabling farmers to have better yields. Economic success within this zone depends largely on the labor force that the household is able to access, whether household members or, for the wealthier people, through hiring. In a normal year, people are able to earn money locally through selling their crops, animals or gathered produce or through local crafts such as mat or fence making and local labor opportunities. Typically, even poor households are able to cultivate the greater part of their annual food requirement. But during a difficult year, men, especially from poorer households, migrate towards urban centers or to other countries to look for work to supplement the household income. In other words, their food security depends upon their capacity find elsewhere the employment which they normally undertake locally for upwards of 40% of their annual cash income – money that is now urgently required for food purchase.



Zone Description

This food economy zone in the South East of Chad is characterized by the cultivation of off season crops. With some 700mm of rainfall in most years the sandy clay flood plains are difficult to cultivate in the rainy season because the soil is easily waterlogged, and therefore rain fed agriculture makes only a minor contribution. The infrastructure is relatively undeveloped and there are few NGOs working in the area. During the rainy season, some of the roads can become impassable leaving the zone cut off from the rest of the country for days at a time. The main off season crop is millet, which grows using the water retained in the soil after the rainy season has ended. Rice has recently been introduced to diversify the crops grown and is proving very successful because although it requires more labor it sells for a higher price. The zone includes most of the district of Salamat, with an estimated population of 150,000 people. It is sparsely populated, and the majority of the population are Arabic speakers. The presence of a large wildlife park means that in addition to occasional tourists, there are numerous wild animals which destroy crops, in particular elephants. Many households have strong family ties within the Central African Republic (CAR), and these enable cross border trade and livestock grazing.

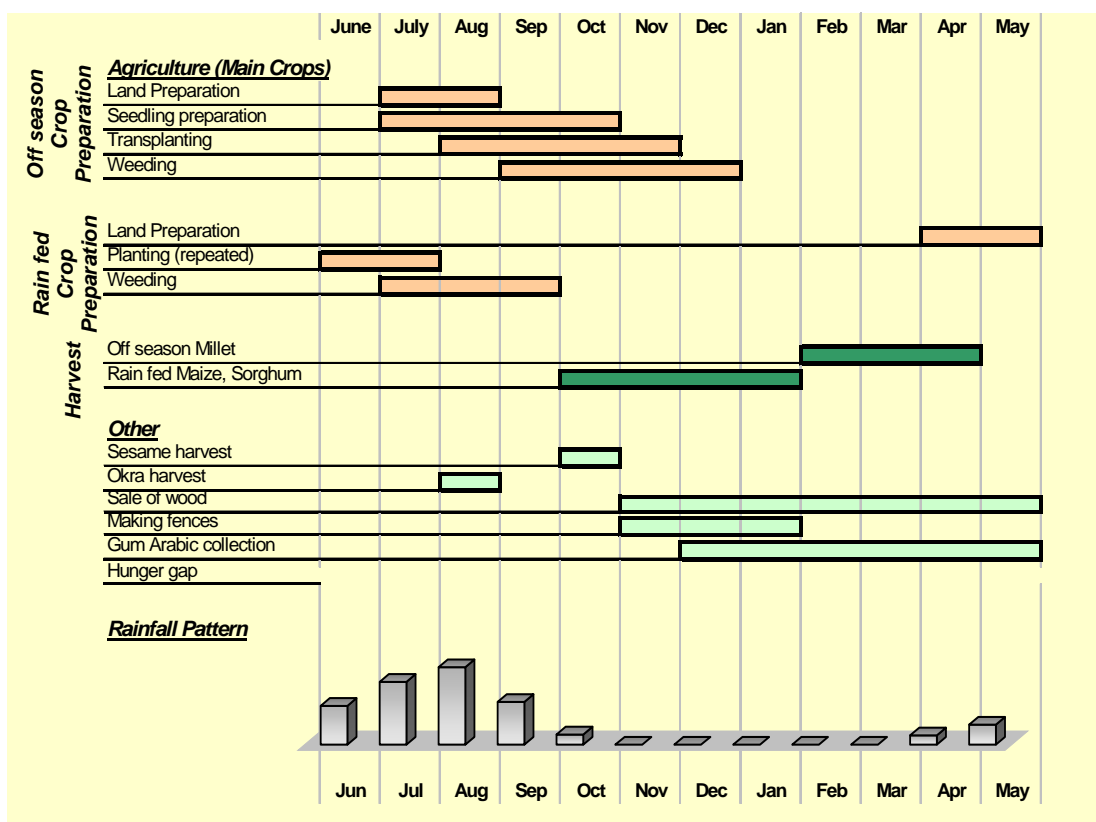
The temporary river, Bahr Azoum, which crosses the zone, has recently changed direction, now flowing through the woodlands rather than onto the flood plains. If this continues and the plains are no longer flooded, this will have a negative impact on future harvests and on households' ability to meet their needs. The zone is also in the migration path of the transhumant herders from the north, who stop here during the dry season to benefit from the grazing land.

Markets

The locally produced millet, sorghum and maize is traded on the local markets, the most important of which are at Am-Timan, Aboudeia and Mouraye. The animals traded are cattle, sheep and goats, donkeys and poultry. Links with the Central African Republic are very important as these enable the sale of livestock and access to the labor markets there.

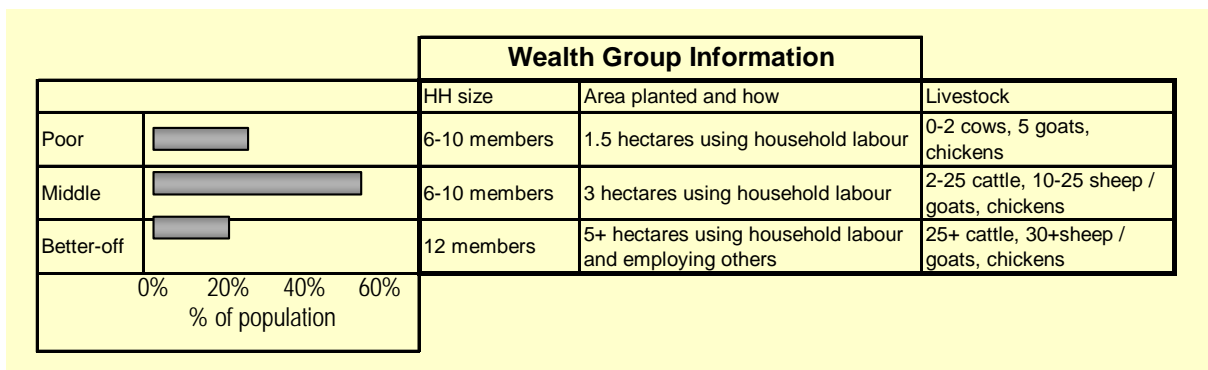
Seasonal Calendar

All households cultivate the main crop which is off season millet. This is grown from seedlings which are prepared in nurseries between July and October. The seedlings are then transplanted out into the fields between August and November with a harvest between February and March. Poorer households also cultivate some rain fed maize, millet and sorghum in small plots, (often intercropped with squash and cucumbers). Land preparation for these rain fed crops starts in April, and they are harvested from October. The wealthier households usually avoid this laborious cultivation, concentrating their efforts on the off-season millet which fetches relatively high prices in the market. Squash and cucumber are sold in August and September. September is a busy month for farmers with the weeding of rain fed cereals and the transplantation of off-season seedlings. Where the soil is sufficiently well drained, households may grow groundnuts intercropped with sorghum; but this is not widespread. Women have small plots of okra and tomatoes which they dry after harvesting, some kept for making sauce and the rest sold. After the harvest of rain fed crops, the remaining stems, straw and grass is collected to feed the animals and to make mats, thatch or fences to replace old ones around the house or for sale. Gum arabic is tapped from acacia trees during December and May. About a month after collection it is dry enough to be sold. For a 3-4 month period during October and April, milk and butter are available while the transhumant herders stay in the zone to graze their animals during this period before heading north again to avoid the tsetse flies. The most difficult months of the year are August and September, when stocks from the previous harvest are low and there a heavy labor requirement in the fields. Rain-fed sorghum is the first harvest to break the hunger gap.

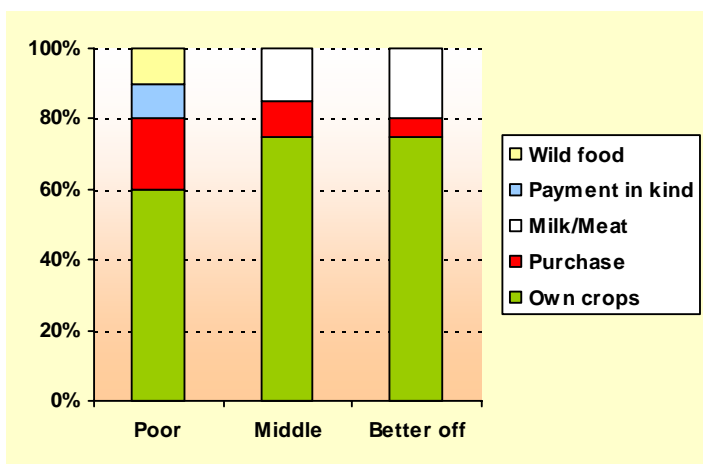


Wealth Breakdown

While the poor may sell a part of their crop fairly soon after harvesting, the better off can afford to wait until planting time, when the price is higher. Typically, middle and better off households use ploughs and are able to transport their crops in carts while the poor do not have such productive assets therefore either they cultivate their fields with hoes and carry their harvest home on their heads or they pay to borrow tools. The disadvantage of borrowing someone else's plough is that it is available only after they have finished with it, which might be too late within the season for satisfactory results. However households from all wealth groups tend to have a bicycle, which comes in use for traveling to the fields which are often a long distance from the home and for taking goods to the market.

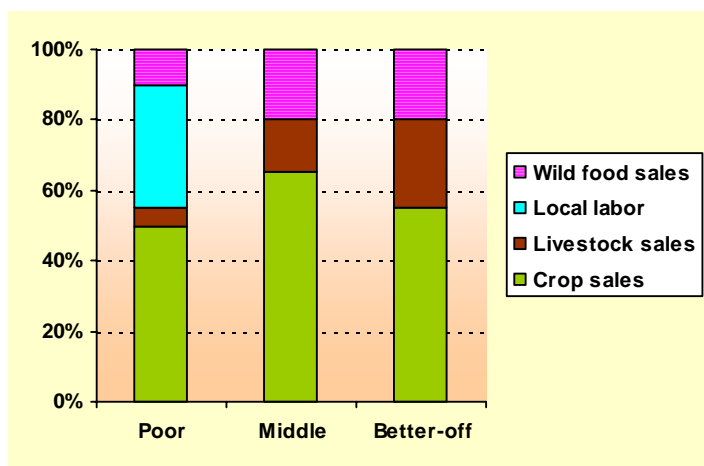


Sources of Food



For households in all wealth groups, their own crop production contributes over two thirds of their annual household needs. While the middle and better off complete this with purchased cereals and products from their own herds, the poor do not have sufficient animals for them to make a significant contribution to their food needs. They gather wild fruits but this is still not enough, and they have to borrow food from middle and better off family and neighbors. This is repaid, often with interest, out of the following harvest.

Sources of Cash



As wealth increases, so does the importance of cereal sales. Given their relatively small plots of land, the poor have had to diversify their income sources in order to meet their needs, and local agricultural labor is the biggest source of cash. This includes working in the fields of the better off or gathering gum arabic for them. The rain fed cash crops grown for sale include groundnuts and vegetables.

Hazards

Chronic/frequent hazards: At least seven years in ten the crops are attacked by pests such as birds and insects, especially grasshoppers. In addition, with the same frequency, elephants and warthogs from the national wild life park pass through and destroy crops in their wake.

Periodic hazards: About two years in ten the rainfall is insufficient to sustain the cultivation of off season crops. About three years in ten the crops are affected by crop diseases. When the transhumant herders bring their cattle into the zone this can result in arguments between them and the local farmers if the animals enter the fields and damage the crops. Until this has been relatively rare but is a problem that seems to be on the increase as the agricultural population increases and hence more land is used for cultivation which would otherwise be used for grazing or as part of the migration corridor.

Response Strategies

When crops fail, households who cannot find sufficient local casual employment turn to collecting wild fruits and other plants including jojoba and gum arabic to sale; or they sell off numbers of their animals. There is usually sufficient straw available to increase the output of mats and fencing panels. As the situation worsens, men head to the towns to look for work, or go the Central African Republic. At the worst extreme, households start to sell off their household possessions, usually at very low prices.

Crisis Warning Indicators

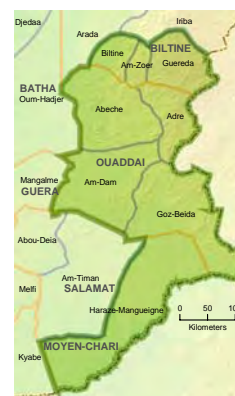
- Prices of cereals increase shortly after the harvest
- Increased sale of jojoba and other wild fruits on the market
- Increased number of people looking for temporary work; and a decrease in daily labor rates
- More mats, thatch and straw fences are on sale on the market.

Chad Livelihood Profiles

Zone 4: Eastern Rain fed Cereals

Main Conclusions and Implications

The erratic rainfall over this zone means that households are unable to rely on cereal production alone, and livestock ownership is important, especially when it comes to getting extra cash in times of crop failure. Cross-border trade is particularly important, with both Sudan and the Central African Republic, enabling the sale of animals in return for manufactured goods. This is especially important during the rainy periods when large parts of the zone are effectively cut off from the rest of the country as flooding makes the roads impassable for heavy vehicles. The long border also has some disadvantages in that it makes for much cross-border grazing from the other side and transmission of diseases by non-vaccinated animals – including those of the new refugees from the conflict in Darfur, Sudan.



Zone Description

The economy of this zone, covering a great part of the east and south-east of the country, is characterized by the cultivation of rain fed cereals complemented by small-scale livestock rearing and market gardening. The annual average rainfall is between 300-800 mm and the main cereals are millet and sorghum which grow well on the sandy soil. The north of the zone is particularly affected by the lack of potable water, with a limited supply from wells. Households generally use the same fields year after year with only light manure as fertilizer, and the soil is inevitably becoming less fertile.

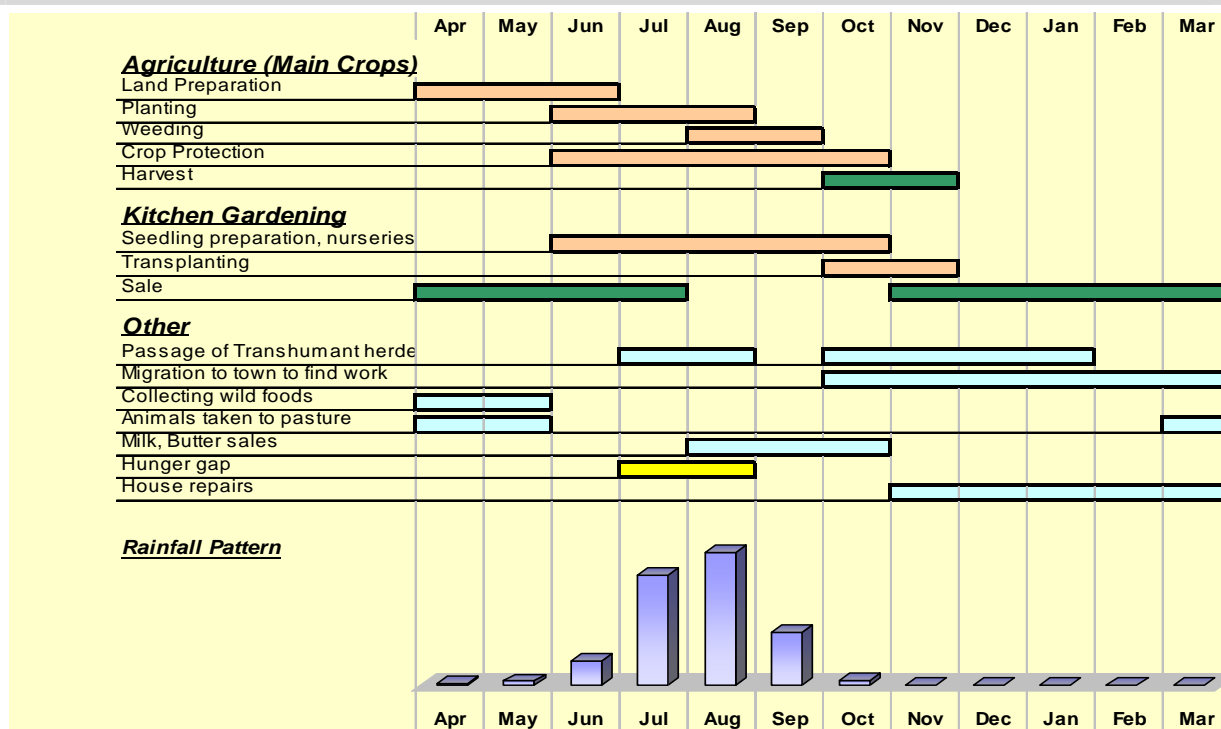
The zone shares a very long and relatively porous border with Sudan, stretching down also to the Central African Republic and including the administrative departments of Assongha, Ouaddai, Sila and part of Biltine and Salamat. This affords excellent opportunities for cross-border trade of animals from Chad in return for manufactured products, rice, sugar and fuel from Sudan. But during festival times people prefer to buy sheep from Sudan for slaughter. The zone is sparsely populated, with an estimated 8-900,000 people; the main ethnic groups are the Ouaddaian, Dajo, Assongari, Massalites and Rounga, plus some Arabs. The zone offers an important grazing-migration pathway for the transhumant herders from the north (which sometimes leads to disputes when straying cattle destroy crops).. As the population grows and more land is used for agriculture, disputes are likely to grow more frequent and serious. With the recent troubles in Darfur in Sudan, there have also been occasional inflows of Sudanese refugees who usually arrive with animals to sell for food. If many refugees arrive at one time this can cause the local livestock prices to plummet for a time. While this can be beneficial for households with the cash to invest in new animals, it is detrimental to those households who need to sell animals in order to cover basic needs including food. Another concern for herders in Chad is that it can be difficult to control animal diseases brought in by the Sudanese cattle which have not benefited from livestock vaccination and care schemes.

The roads are in generally poor condition and during the rainy season some of them become impassable, isolating communities for days at a time and delaying the movement of haulage vehicles. This is more frequent and more severe in the south of the zone, which has a higher rainfall and can be affected by localized floods during almost half of the year.

Markets

The main crops that households sell are millet, groundnuts, sorghum, beans and watermelons, all mainly for onward trade to other parts of Chad. The zone also produces vegetables especially onions and garlic which are bought up at local markets by intermediaries and exported to Gabon, Congo, and the Central African Republic as well as supplying N'Djamena. The main markets within the zone are at Abéché, Bilitine and Haraze. Livestock purchased at these markets are often taken to N'Djamena or into Nigeria.

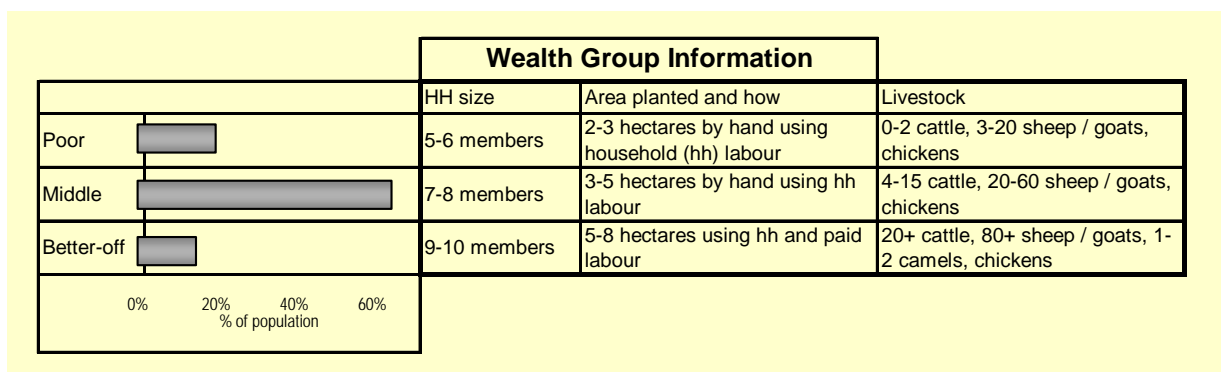
Seasonal Calendar



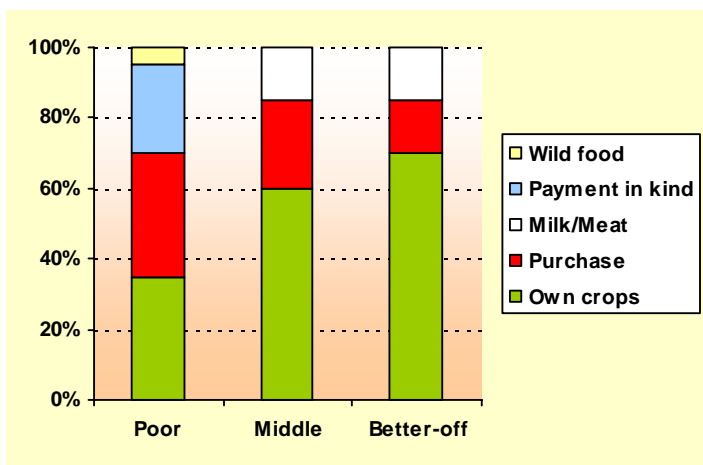
The main season crops are rain fed millet and sorghum with some sesame, cowpeas and groundnuts. Nearly all households keep some seeds back after planting so that if the rains fail at the start of the growing period then they can re-sow as needed. Much labor goes into protecting the crops from insect pests and animals. This includes digging holes to protect the plants from worms and caterpillars, chasing birds away especially near harvest time in August and September, and protecting crops from the animals of transhumant herders as they pass through on their southbound migration and again the return journey home a couple of months later. After the harvest cereals are threshed before being put into 100 kg sacks for storage or sale. In Abéché where watermelons are grown, they are intercropped with the sorghum. Other vegetable seedlings are grown in nurseries and then transplanted out towards the end of the rainy period. Young men especially from the poorer households go to town to look for work every year from October, returning in March for the agricultural activities. Meanwhile after the harvest households repair their houses and collect wild foods. A couple of months after the end of the rains there is little left for the animals to graze therefore they are taken southwards to spend a few months a short distance away from the home until it the herders need to return for the start of agricultural work.

Wealth Breakdown

Fields are cultivated with local hoes (*daba*) and it is rare to find households with modern farming implements. The more able-bodied members there are, the larger the area of land than can be cultivated. The better off have bigger households and they also employ the poor to work on their land; in normal years they produce a substantial surplus for sale. The poor are constrained by their limited household labor capacity and in addition they are unable to weed their own fields sufficiently because they spend the time working for the better off. They have little option however because they have to meet their short term needs even at the expense of their long term productivity. During community events such as weddings, funerals and religious festivals, all households are expected to contribute according to their means and in this way the better off support the poor indirectly.



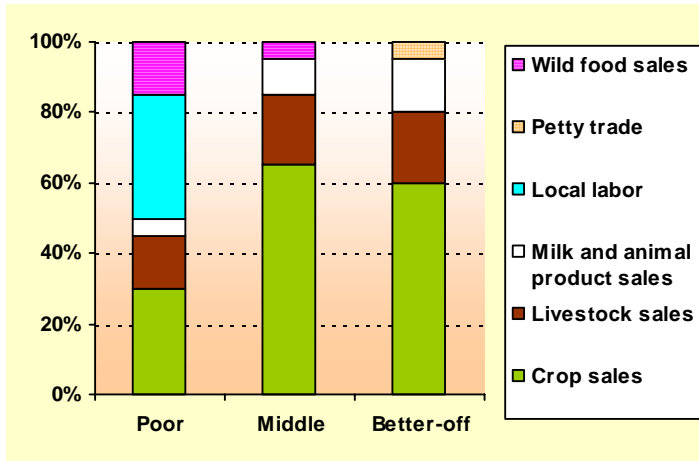
Sources of Food



The middle and better off households normally meet most or all of their of their annual food requirements through their own cereals production, but nevertheless purchase preferred foods such as rice. Poor households on the other hand cover less than half of the annual food needs from their own production therefore they depend heavily on the market. They also collect wild fruits and roots, and during the hunger gap they accept payment for work in food.

Sources of Cash

The most important source of income for poor households is through working on the fields of the better off



and from doing casual work in towns. Although their cereal harvests are small compared with wealthier households, they nevertheless are obliged to sell grain immediately after harvest in order to meet pressing needs including credit repayment. In absolute terms the cash they earn from this is minimal, but it contributes a quarter of their total annual income. Middle and better off households earn most of their cash through sales of surplus grain and animals.

Hazards

Chronic/frequent hazards: Every year, farmers risk losing their harvest to crop pests, in particular birds, locusts and caterpillars. This zone is part of the migration route taken by the transhumant herdsman and this is a source of argument whenever the animals stray into the fields and destroy the crops.

Periodic hazards: About one to three years out of ten there is inadequate rainfall, either in terms of total rain or in the pattern – if for example there are lengthy gaps between showers at critical crop-growth stages. With the same frequency, farmers risk losing their crops due to flooding.

Response Strategies

When the crops fail, households grow more vegetables for sale, and gather wild foods. If these are not enough to help them meet their needs then the active members (usually the men) go earlier to urban centers to look for work, and sales of small livestock increase, often at low prices. As a last resort, when households have no other options, they start to sell off their assets including their household goods, until entire households move to another area or to town to be helped by kin.

Crisis Warning Indicators

- Rains start late, or there is a dry period in the middle of the rains during critical growing period (July to August) or the rain finishes early
- Greater numbers of rural people go to the urban areas to look for work or assistance, some leaving before the customary time (October)
- Prices rise very high during the harvest period and do not fall as usual immediately post-harvest

Chad Livelihood Profiles

Zone 5: Western Agro pastoral Zone

Main Conclusions and Implications

In this zone households depend on both their livestock and crop production. Livestock ownership is the key to survival and provides a vital safety net whenever crop production is insufficient. To this extent, the purchase of new animals is an important investment whenever a household has cash to spare, although generally this is not an option for poorer households, who have limited cash reserves. The large geographical area covered by this zone encompasses strikingly different annual rainfall between the north and the south of this zone. This has an impact on which of the two activities predominates; livestock are more important in the north while agriculture is more successful and hence predominates in the south. Throughout the zone there are a number of secondary activities that people engage in, depending on the resources available. These include fishing, gathering honey commercial trade with the capital N'djamena and collection of gum arabic. There is a strong demand from N'djamena for charcoal, cereals and meat which make trade in such activities potentially lucrative for those households that are able to find the capital to start.



Zone Description

This large food economy zone stretches from the southern edge of Lake Chad down to the off-season food economy zone, including households within the administrative departments of Baguirmi, Dababa, Guera, Hadjer-Lamis plus parts of Batha-Est and Ouest, Lac and a small zone within Mayo Boneye. It is characterized by combined rain fed agriculture and livestock ownership. The main cereals grown are sorghum and millet while the livestock are essentially cattle, sheep, goats, donkeys and poultry. Two large, permanent rivers run through it, the Chari and the Logone, as well as a seasonal river, the Batha. The estimated population of over 1.5 million people encompasses many ethnic groups who mainly rely on the cultivation of cereals with some sedentary livestock herding on the sandy-clay soil. The population is concentrated in the west of the zone, along the rivers, whilst the central part of the zone is relatively sparsely populated.

The zone encompasses differences in available resources and hence variations in economic activities. For example households living near by the rivers go fishing, where there is also a small amount of rice cultivation. In the center around Melfi, honey is collected both for sale and consumption, while acacia trees and hence gum Arabic are found mainly in the south. There is a relatively good road network in some parts, and commercial activities take on much importance, especially near the roads leading to the capital, N'Djamena. Women have vegetable gardens in which they cultivate okra and tomatoes. Many NGOs are based in N'Djamena, some of which are in agricultural or livestock development.

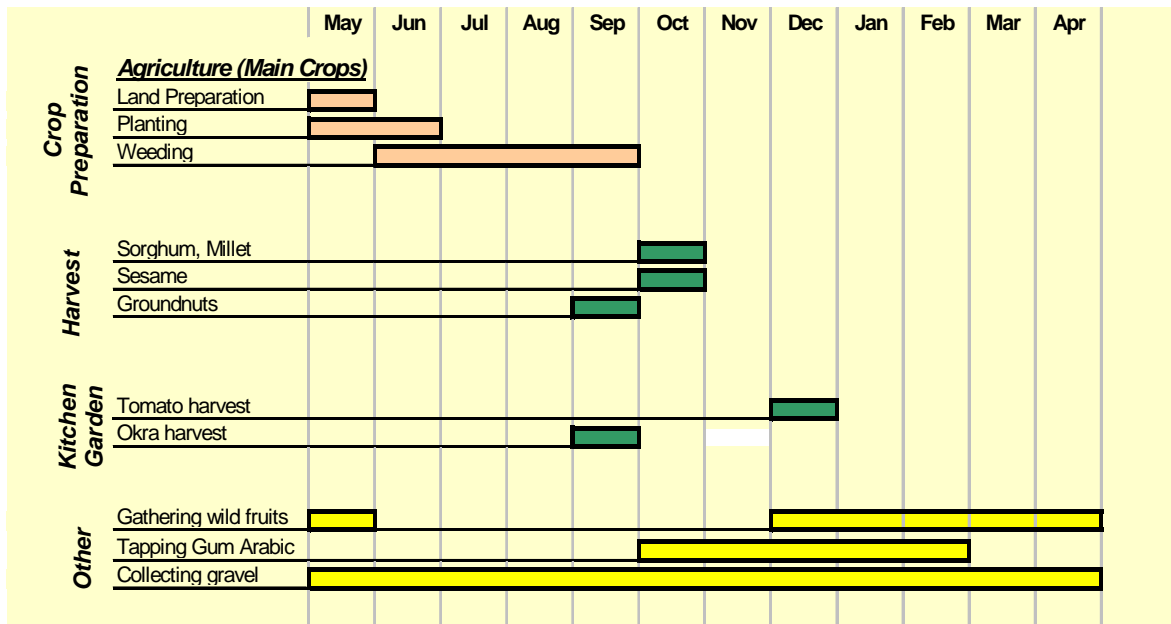
Transhumant herders from the north pass through this zone in October and April / May on their migration between the zone and the south of Chad. These times coincide with the planting and harvesting periods, and their passage can lead to serious disputes between them and the agro pastoral households whenever crops belonging to the agro-pastoralists are destroyed by the migrating herds.

Seasonal Calendar

The main crops are red and white sorghum and millet, all of which are harvested in October. Some households also have small plots of groundnuts or sesame which are grown as cash crops. The first significant rain falls between May (in the South) and June (in the North) and signals the time for planting. There follows a period of five to six months of intense agricultural activity, especially for poorer households work on the fields of wealthier households as well as on their own fields. Women in all households usually have small kitchen gardens in which the main vegetables grown are okra and tomatoes, which are sold fresh soon after harvest or dried and sold throughout the year. In between the harvest and the time for the next land preparation, households engage in a number of activities including collecting gum arabic from the many acacia trees, and the production of charcoal. The main tapping period for gum arabic is between October and February. The resin takes about a month to dry before it can be sold to middlemen who come to the village.

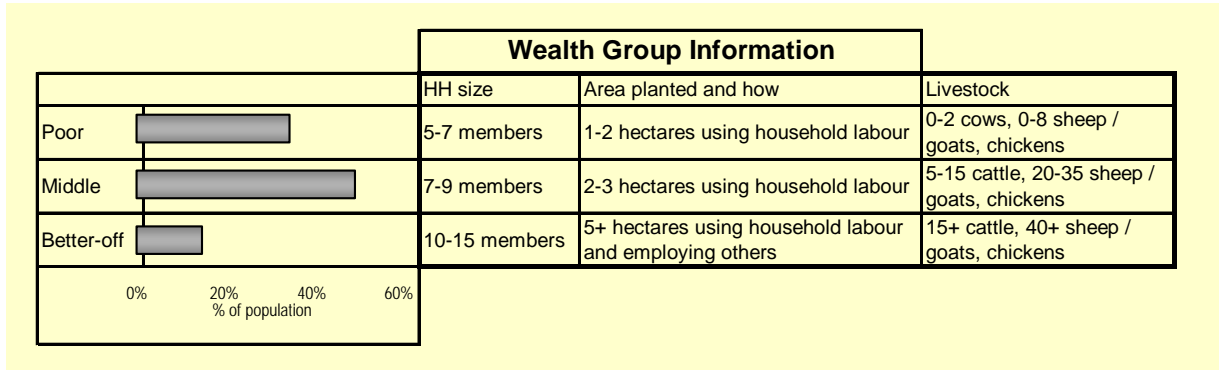
Markets

The main cereals purchased on the market are sorghum, millet and off-season millet (*bérebéré*). In addition to the local weekly markets, there are a number of key markets within the zone for the sale of cereals and livestock. The most of important of these, especially for livestock, is the capital, N'Djamena, which also plays an important role in releasing stocks onto the market when there are reduced harvest around the country.



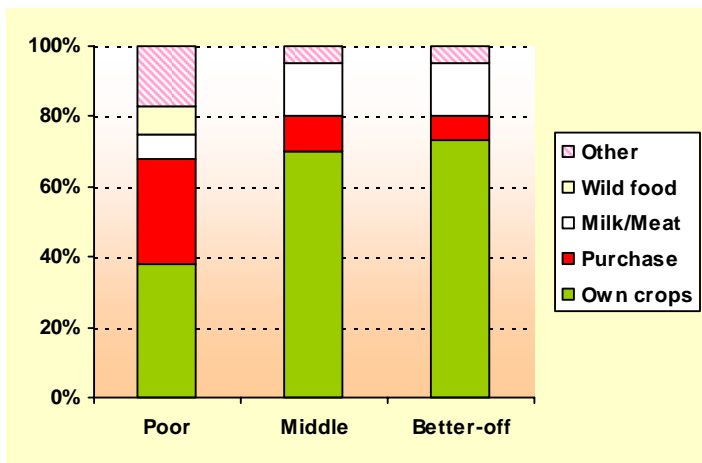
Wealth Breakdown

Wealth is linked to the area of land cultivated and the number of animals owned. Land use is based not on individual ownership but on how much land a household can cultivate, hence upon the number of working hands that can be mobilized. Therefore bigger households with more able-bodied people (as opposed to only young children) tend to be better off. Typically, the number of wives and children increases with wealth,



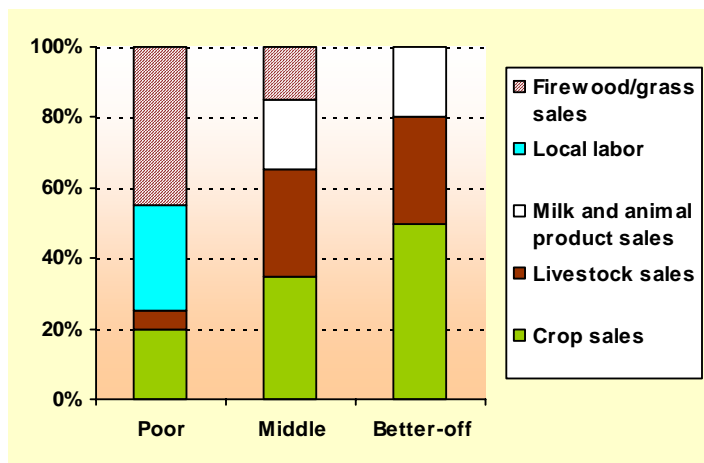
from one wife for a poor man and between two and four wives for a better off man. In addition, better off households are able to employ the poor to work for them; given the vagaries of climate and lack of agricultural inputs, and the need for some guarantee of earnings, poorer households tend sacrifice optimal work on their own fields in favor labor earnings in cash or kind. All households use hoes for cultivating, but wealthier households also use horse- or cattle- drawn ploughs, especially in the southern reaches of the zone, and their crop yields are also improved by the manure from their larger herds. Wealthier households may purchase extra cattle in favorable years, sometimes selling numbers of small stock to gain the capital. . This is usually beyond the means of poorer who are on the contrary obliged to borrow food or cash from wealthier people to make ends meet towards the end of the year before harvest, and who rely on them for assistance with festivals and other social obligations.

Sources of Food



In acute contrast with the middle and better off groups, poor households cover just over a third of their annual needs from their own crops, relying heavily on the market and on gathering wild fruits to make up the difference. 'Other' food sources in the north of the zone include working for food (mainly A part of the milk drunk by poor households commonly comes as part of payment in kind (for shepherds) or simply as gifts from better off neighbors/patrons. Cereals harvested by better-off households could normally cover the year's requirement but are complimented by market purchases. of preferred items, notably rice.

Sources of Cash



Middle and better-off households get cash primarily through selling cereals and animals/animal products. Poor households have relatively few animals and therefore do not sell milk or ghee, which contributes almost a quarter of income for middle and better off households, but they do occasionally sell chickens or ducks. In the main, poor households rely for cash upon the sale of firewood, charcoal or gum Arabic or working in the fields of the better off. In some parts of the zone, groundnuts or sesame are grown as a cash crop and for such households livestock sales are less important.

Hazards

Chronic/frequent hazards:

- Every year, the harvest is damaged to some extent by pests, especially birds and crickets, as well as rodents. Children are often engaged to sit on high platforms overlooking the fields, with rattles which they shake to scare the birds away. The crickets also consume some of the wild fruits but these are generally left unprotected.
- Wild animals, in particular elephants and warthogs are still quite common in this zone and they are responsible for crop destruction whenever they pass through. Livestock are affected by a number of illnesses, in particular the two types of anthrax.
- Each year after the harvest, from November through to March or April, bush fires are started to clear the ground and to chase out wild animals in particular small rodents. These fires can result in limited availability of firewood and charcoal for sale.

Periodic hazards:

- About one year in three, the rainfall is insufficient for a good harvest, either in total quantity of rain or in the pattern it falls over the season, especially breaks at critical moments of the crop cycle.
- There are serious local floods which damage crops about two years in ten, also isolating some areas between August and November;
- Severe drought, violent windstorms and epidemic crop disease are relatively rare events.

Response Strategies

Since people fall back on the market in the face of poor returns from their fields – a market where cereal prices are likely to be unusually high -they must increase their cash-earning activities, employing new strategies to be able to cover their needs. There is an increase in sales of charcoal and firewood as well as in sheep and goats. The proximity to N'Djamena offers a convenient market for these products. Households also increase their fishing and market gardening activities, and gathering more wild foods, and hunt game

for home consumption or for sale. When these strategies are insufficient, households turn to better off kin for assistance or they take on more debt if they already have a relationship of trust with a creditor. Some members of the household, usually the men, go to towns, other rural areas or head into Cameroon to look for work. If the stress on the household economy is too great then sometimes the entire household will temporarily migrate. In extreme circumstances, households sell off their cattle while poor households who do not have sufficient animals to fall back on break open ants' nests to gather the grain stored within.

Some initiatives have arisen in response to the above-mentioned risks. These include the construction of communal granaries, the cultivation of short cycle varieties of sorghum and diversification of crops, for example the introduction of sesame.

Crisis Warning Indicators

- Total Rainfall below normal
- Long periods between days of rain during the rainy season
- Limited food available for purchase at the local weekly markets especially during planting time (May to August)
- Staple food prices do not fall as normal after the harvest in October / November and increase dramatically in April / May.
- Increased gathering and consumption of wild plants
- Increased number of people looking for work, including temporary migration to Cameroon
- More charcoal and firewood for sale along the main roads.

Chad Livelihood Profiles

Zone 6: Central Agro pastoral and fishing

Main Conclusions and Implications

In this zone, all households, whether poor or rich, engage in both livestock rearing and cultivation, commonly complemented by some fishing. But the ownership of livestock is heavily skewed towards the better off 10%. The middle group shows a balance of dependence on both cattle and cultivation at more modest levels than the better off. The poor majority essentially depend on neither; rather they sell their labor to their more advantaged neighbors and buy the bulk of the food they eat. Nevertheless, even they gain a significant boost to dietary quality from the available milk.



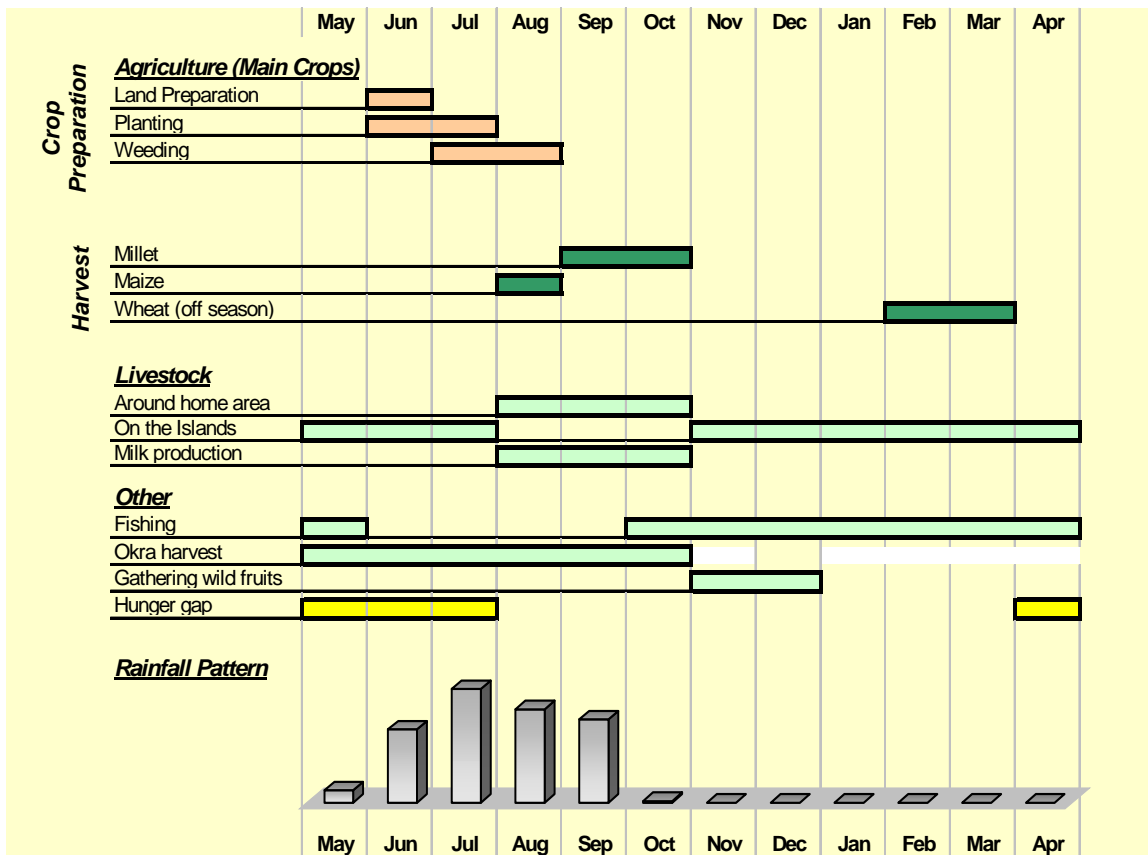
The climate and soil conditions are not conducive to high agricultural yields, and in addition to growing millet on the sand dunes people make use of the Lake Chad borders and temporary stream beds for cultivation. The poor condition of the road network within this zone and linking it with Ndjameña increases the cost of commercial activities which are therefore limited to wealthier households who own or can borrow camels or who can afford the high fuel and vehicle charges.

Zone Description

This semi-desert zone is on the edge and islands of Lake Chad, near the border with Niger and Nigeria which strongly influences the economic activities of households. There are strong trade links in particular with Nigeria and the naira is the local currency on some of the islands. Households combine agriculture with livestock herding and fishing to varying degrees. Fishing is slightly more important for people living close to the lake or to its feeder river, while further away, livestock are more important. In the far north towards the Sahara Desert, natron (sodium carbonate) is collected for sale to Niger, while the algae *spirulina* is found around the lake and women harvest this and dry it to add to sauce or to sell. The islands provide valuable grazing land during the dry season, but during the rains the animals return home to avoid the tsetse flies. Over the past 30 years or so, the lake water level has decreased from a former high of 25,000km² to a current 10,000km². The zone lies within part of the administrative department of Bol, and has an estimated population of under 90,000 people. It is sparsely populated, the main ethnic groups being the Kanembou and Boudouma. There are some two thousand fishermen from neighboring countries on the west as far as Togo and Ghana. The main crop grown on the sandy soil is millet, while maize, wheat and beans are grown in the moist beds of wadis (seasonal water courses) and on the exposed former lake bed. There is more than enough land available for cultivation on the dry dunes, but land is limited within the more humid lake and in the wadis. Such land is much sought after since the typical annual rainfall in this zone is 250 mm/year, only really adequate for successful cereal cultivation if the showers are well spread through the season.

Seasonal Calendar

The main season crops are millet on the sandy dunes and maize on the river and wadis. Most of the agricultural work occurs between June and August/September. Wheat is cultivated as an off-season crop in the wadis from November onwards once the surface water has gone and is harvested in February/March. Women plant okra in March which is harvested over a number of months from May onwards. The exposed lake bed also provides suitable land for growing cassava, which is planted in small plots all year round and is harvested 7-8 months later. Between July and October, the water level in the lake rises and the benefit from fishing is outweighed by agriculture, so that except for the few professional fishermen usually from other countries, there is far less fishing during this time. Amongst the resident households the peak period for fishing is between December and May, when there is more time available and fish are caught more easily. Cattle spend the months of November to July on the islands within the lake to benefit from the grazing land. They return in July/August because by this time there is grazing land around the home and also to avoid the flies on the islands. The months between August and November are relatively easy thanks to the combination of the availability of milk and the cereal harvest. The hunger gap is between June and July, although for the poorest households it can start as early as April. During May and June, some poorer households arrange for cattle from middle or better off households to spend a couple of weeks on their fields grazing on crop residues and hence manuring the soil before the planting season. This is paid for in sugar or in cash.

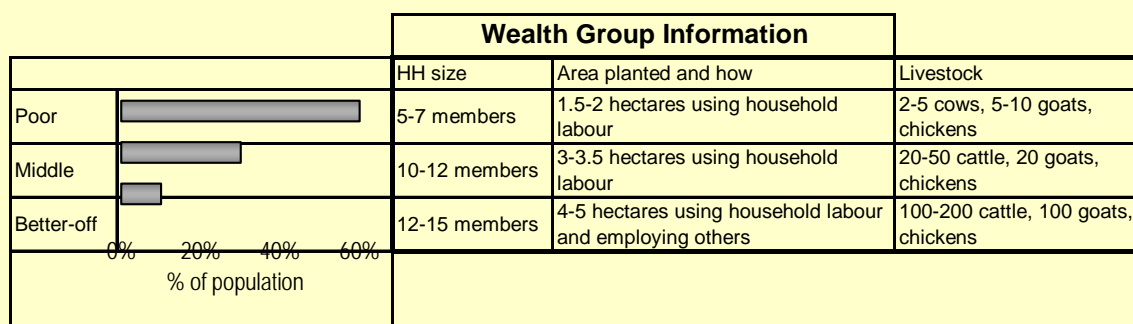


Markets

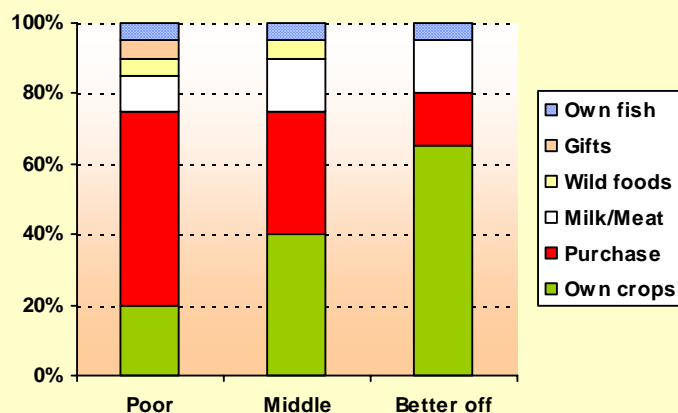
Nigeria is a key destination for much of the produce sold in this zone. The main cattle markets in Bol, Tchoukoutalia and Dibinichi are collection points for onward sale to Nigeria. Typically cattle sales are highest between March and May when the water level in the lake has receded enough to allow the cattle to cross into Nigeria more easily. RigRig is the main trading post within Chad for *natron* (sodium carbonate for cattle cure) which is mainly exported to Niger. The type of fish sold depends on the target market; smoked fish to Nigeria via Fitine market, dried fish to Cameroon via Kinaserom market and fresh fish within Chad, principally to N'Djamena.

Wealth Breakdown

Poorer households are unable to produce enough food to meet their needs and they do not own enough animals to both sell them for food and maintain a viable herd. Therefore they rely on working for the better off households, which helps the better off to benefit from a larger land area cultivated. But this is at the expense of optimum attention to such fields as they cultivate for themselves. Outside of the main agricultural period, the poor help the better off with their fishing and fish processing activities.

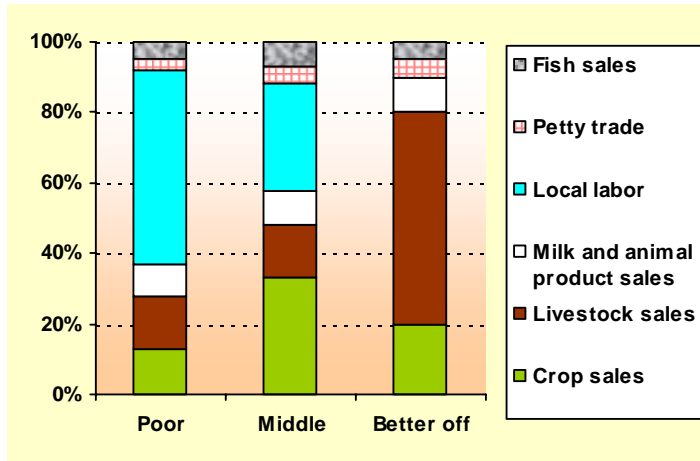


Sources of Food



Poor households usually harvest enough food to cover two to three months before resorting to the market for the rest of the year. This is in contrast to the better off households who cover almost three quarters of their annual food needs from their fields and purchase very little. All households consume milk meat and ghee from their own animals, and some of their own catch of fish. Further away from the lake where fishing is not possible, animal products contribute more to the household annual food needs. Poor and middle households gather wild fruits which are in season during November and December.

Sources of Cash



All households earn cash through diverse means, but the relative contribution of each source is a clear reflection of wealth group differences. The sale of livestock contributes the majority of annual income to better off households and overshadows income from the sale of cereals which is an important income source for middle households. Poor households on the other hand neither cultivate large fields nor own large herds of animals, so they depend heavily on local seasonal labor. This includes agricultural work or fishing for the better off, or transporting the harvest to market.

Hazards

Chronic/frequent hazards: Every year, the harvest is threatened by pests, especially crickets. These might affect localized pockets or the whole zone. Animal diseases are endemic, including anthrax, river fluke, foot-and-mouth and *pastoralosis*.

Periodic hazards:

- Given the normally low rainfall, there are years when rainfall is considered poor, either in total volume in its distribution over the season. This seriously reduces harvests and the quality of pastures. At these times also, wild animals, in particular jackals and hippopotami further threaten crops as they too look for food. The hippos in the lake are a regular disturbance to villages nearby.
- Catastrophic drought is rare, but the episode in the early 1970s heralded the progressive diminution of Lake Chad.
- About one year in ten more rain falls than the land can cope with and the little streams flood which delays or prevents cultivation of maize.

Response Strategies

When crop production fails, there is initially an increase in gathering and consumption of wild foods including spirulina, nuts and fruits and in the sale of animals, especially small ruminants. If there has been insufficient rain and the water level in the lake is low then people move from the feeder Rivers towards Lake Chad proper for fishing and also to find grazing land. Hunting increases, including of gazelles and monitor lizards. Men move out of the zone to look for work either within Chad or in neighboring countries, in particular Cameroon and Nigeria. There is also an increased reliance on cross border trade as cattle are sold from Chad and sugar is imported from Cameroon. With the very strong extended family and social responsibilities, the better off often support the poor with gifts or loans of food or cash.

Crisis Warning Indicators

- Livestock herders move to the islands earlier than usual (i.e. in September).
- More people, especially women, come to the towns to look for work or assistance from relatives.

- More people come from the northern part of the zone to the southern weekly town markets, to purchase food.
- Many livestock are available for sale on the markets but there are relatively few people buying animals.
- Maize is not on sale at the market because stocks are low.
- Wild foods appear for sale on the market in large quantities and earlier than normal.

Chad Livelihood Profiles

Zone 7: Off-season farming and fishing

Main Conclusions and Implications

This zone borders Lake Fitri and the soil and climate are conducive to cereal cultivation in the flood plains, once the ground water has receded. Agriculture is practiced largely without the use of modern equipment and harvests depend on access to labor either from within the household or by employing field hands. The lake allows small scale local fishing activities which provide some cash from fish sales or paid fishing labor. The zone forms part of the migration corridor for the transhumant herds from further north. Households do own some animals, albeit far smaller herds than in the neighboring zones. These provide a key safety net as the animals can be sold if the household faces economic difficulty. During the rainy season the zone is often cut off from the rest of the country through flooding and this raises prices of purchased food, a particular burden on the poorer households as this occurs at the same time as food stocks have generally run out and fishing activities have ceased.



Zone Description

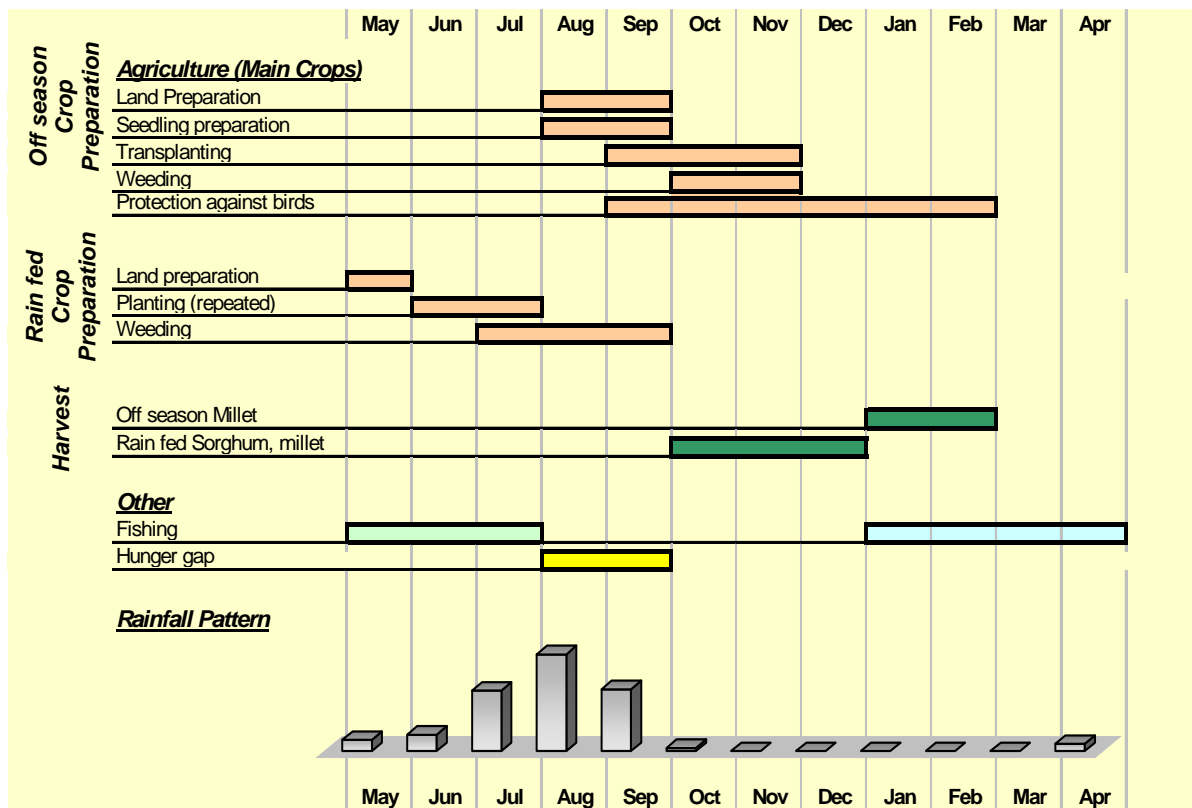
This food economy in the centre of Chad is surrounded by strongly livestock-based economies and forms part of the migration corridor for the transhumant herders. It is within the administrative department of Batha-Ouest, in particular the sous-prefecture of Yao, including Lake Fitri and has an estimated population of 66,000 people. The food economy is characterized by the cultivation of off season and rain fed crops combined with fishing in the lake and some livestock herding. Fish are dried and sold to other parts of the country and to Nigeria. The lake also provides an important environment for the many migratory birds that flock there in the dry season. However this unfortunately coincides with the main harvest period and hence households have to invest considerable time in protecting their crops. The main crops grown are off season millet (*berebere*) and rain fed sorghum and millet). The soil is relatively fertile and the clay content means that it retains moisture long enough for crops to be grown after the main rainy season in which some 350 mm of precipitation occurs in a normal year. The Bilala are the main ethnic group living in this sparsely populated savannah, and they prefer to rear small ruminants rather than cattle, together with some horses. Between August and October, the roads easily become impassable due to the rains and villages are often isolated from the rest of the country for days at a time.

Markets

The main markets within the zone for both cereals and livestock are at Ambassatna and Bilala. In addition, the markets of N'Djamena are relatively easily accessible outside of the rainy season. The main cereals which households sell are off-season millet, sorghum and rain fed millet). Animals sold within the zone include cattle, sheep, goats, horses and some camels.

Seasonal Calendar




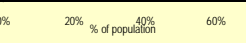
The main season crop is off season millet) which is planted after the rain fed crops. In May, land preparation starts for rain fed millet and sorghum and these are sown by scattering in June and July. August and September are busy months for the farmers because the rain fed cereals are weeded, the main fields are



cleared and barriers against flooding are reinforced. Seeds are also sown in nurseries during this time and are transplanted out from September. Transplanting takes place over three months which allows seedlings that do not grow successfully to be replaced. Between September and February the crops have to be protected from the migratory birds which flock to the lake at that time. This is usually a job left to children, who sit on raised platforms overlooking the fields with rattles and otherwise make noise to scare the birds away. The hardest time of the year is between August and September, just before any of the crops are ready to be harvested, while households are busy weeding in their fields and there is very little fishing. From October, sorghum and millet are harvested and this eases food access especially for the poorer households. After the harvest in January / February of off season millet, it is threshed, winnowed and put into sacks ready for sale or stocking by March. Fishing is rarely practiced between August and December because this is the time when there is most work to do in the fields and also when water level in the lake is highest, making it harder to catch fish.

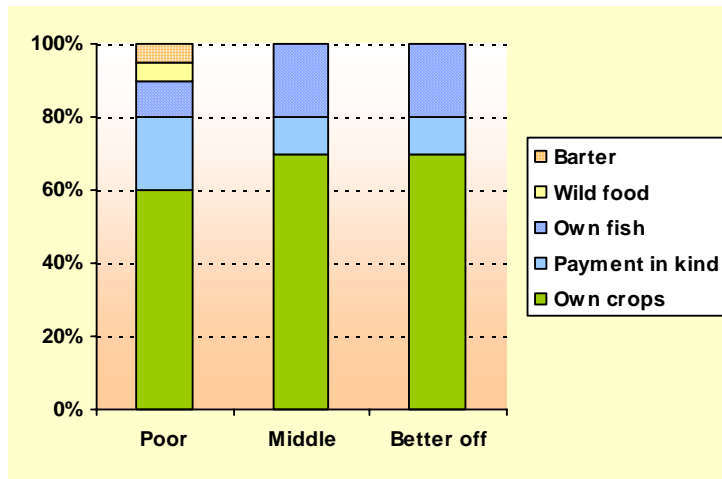
Wealth Breakdown

The majority of households grow enough cereal crops to cover almost three quarters of their annual food needs, without using sophisticated means of production. Cultivation is almost exclusively with local hoes

		Wealth Group Information		
		HH size	Area planted and how	Livestock
Poor		5 members	3 hectares using household labour	1-25 sheep / goats, chickens
Middle		7 members	5.5 hectares using household labour	1-5 cattle, 25-35 sheep / goats, chickens
Better-off		12 members	7 hectares using household labour and employing others	5-30 cattle, 45-125 sheep / goats, chickens
				

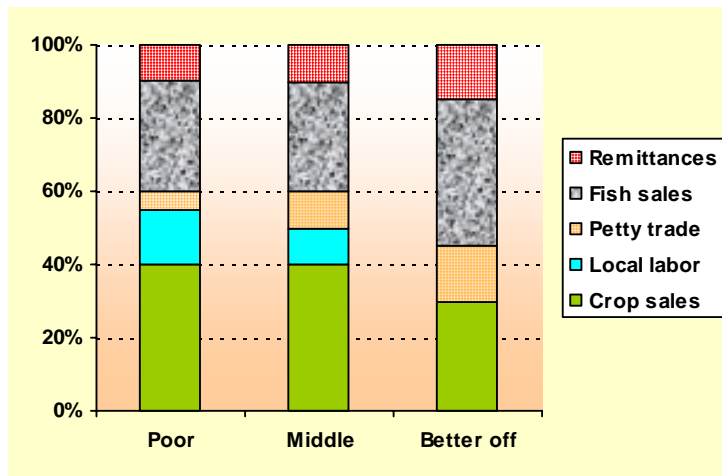
(*daba*), and it is very rare to find a household with a plough or a western style hoe. Fishing in the lake is also important with nets from canoe-like '*pirogues*'. These boats are usually owned by the better off households, who lend their equipment to middle and poor households from time to time in return for payment in cash or kind. Alternatively they may employ people from poorer households to fish for them. There is no formal system of land ownership, and the main limit to the area of land cultivated is the labor available to work in the fields. Poor households tend to be smaller and they combine working on their own fields with working for payment on the fields of their better off neighbors (offering more certain income than from their own cultivation, given the climatic and pest risks prevalent). This therefore limits the size of the fields they can cultivate and limits the time that they can spend weeding their own fields. The cultivation of rain fed crops on small plots of land is very important to the poor as a supplement to their harvest of off season millet.

Sources of Food



After selling some of their crop, the remaining harvest contributes most of the households' annual food needs for all wealth groups. 'Payment in kind' means that cereal is provided in return for labor or some other service. The better off receive cereals in return for lending their boats to fishermen from poorer households. The poor are often obliged to work for food rather than cash payment, especially during the hunger gap in August/September.

Sources of Cash



Households earn cash through various means, including the sale of cereals, fish and some petty trade. Most households have someone working in N'Djamena or another town and who sends money home to the family. The remittance received depends on the type of job that the person is doing, and people from poorer households tend to do menial laboring jobs while those from wealthier households usually have better paid jobs; better off households also tend to send more members for temporary town work. Non agricultural labor includes fishing, and transporting cereals and other goods, usually done by the poor for the better off.

Hazards

Chronic/frequent hazards: Every year the off season crops are at risk of being attacked by birds, and they are responsible for significant harvest losses about four to seven years in ten. When the transhumant herders pass through the zone with their camels and cattle, disputes arise between them and the local farmers if the animals enter the fields and damage the crops. About four to seven year in ten such disputes become serious arguments.

Periodic hazards: About one to three years in ten the rainfall is insufficient to sustain the cultivation of off season crops. There have been rare instances (about one year in ten) when wild animals including warthogs and elephants have entered the fields during the cultivation period and crops are lost or damaged as a result.

Response Strategies

When the crop fails the initial response is to expand on existing food and income sources, for example selling off extra poultry or sheep/goats to purchase food, or increasing fishing activities. If too many people are fishing or the yields are insufficient, then people move to fish in other nearby lakes. If such strategies do not work then households might sell off their cattle or migrate in part or completely towards N'Djamena to live with relatives there and to look for work. In the past, during very difficult periods, men from this zone have reportedly traveled as far as Saudi Arabia to look for work, although the journey requires capital. At the very extreme, when all other options fail, Household assets and equipment are sold off – a sign of final impoverishment.

Crisis Warning Indicators

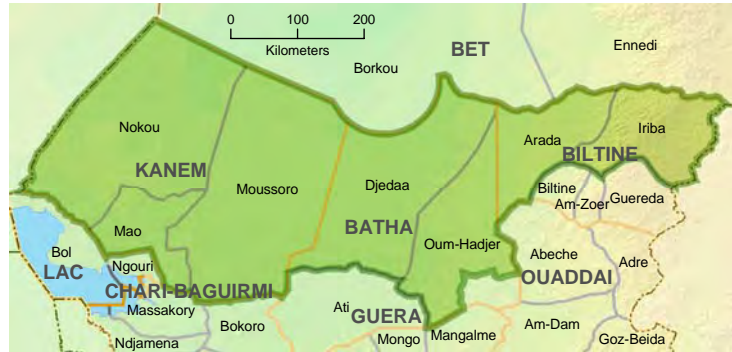
- rains starting late, stopping in the middle or finishing early signals major problem
- no substantial price fall after harvest; marked increase thereafter in prices of staple foods compared with expected levels increased sale of small ruminants and cattle
- migration of men towards urban centers or to other lakes

Chad Livelihood Profiles

Zone 8: Transhumant Livestock Zone

Main Conclusions and Implications

In this zone rainfall and ground water conditions make for very limited yields from crop cultivation except in the southern extreme. Nevertheless cereals form the bulk of the diet – purchased on the market. The cash for this, as well as the milk which is a lesser but important part of their diet, comes from the livestock which are the basis of the economy. The limited local pastures mean that for large periods of the year part of the household is away from home, accompanying the animals south to look for grazing and to earn money through trade and transport.



They return home in time to avoid the flooding and tsetse flies further south and in time for the small harvest at home. Wealthier households from the south of the zone take some of this harvest with them to sell when they return south for grazing. The cash economy is relatively undeveloped and poorer people are mainly paid for work in the form of cereals or an animal to supplement their small herds. In sum, given the limited and only seasonal local pastures, the food security of people in this vast zone depends heavily on using the grazing of other zones, on the sale of livestock in other zones, and on the purchase of grain from other zones. It is in this way that people are able to make this zone home, and to survive even unusually harsh years.

Zone Description

‘Transhumance’ here means distant dry-season grazing migration by members of the household whilst the rest of the household remains with a few milking and other livestock at the home base, usually in fixed houses. This is in contrast to the more northerly pastoral nomadism, where the whole household tends to move with the livestock, whether short or long distances, and accommodation is portable. In the transhumance zone the full range of common livestock are owned: camels, cattle, sheep and goats. This home zone, where the herders start and end their annual grazing odyssey, is a mainly semi-desert area that stretches from the western border with Niger across to the Eastern Border with Sudan encompassing the administrative departments of Bahr el Ghazal, Kanem and parts of Batha-Est, Ouest and Biltine. The population is estimated at just below 500.000 people, including several ethnic groups: Dogorrrda, Kreda, Kanembou, Fezzan Arabs and Zaghawa. The soil is predominantly sandy, except for the rocky mountains in the east, and there is average annual rainfall ranging from 100mm –to 270 mm in the south, the latter figure indicating the potential for crop production. There are very few roads and in general there is little development.

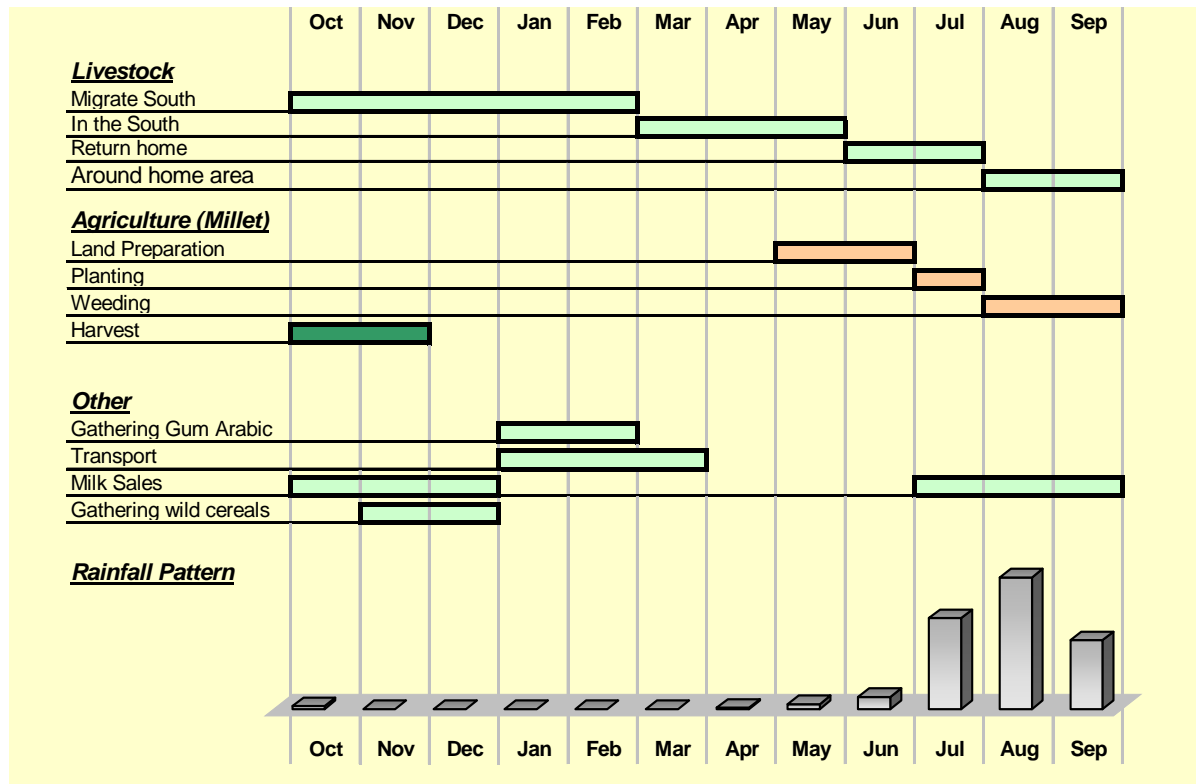
There are some purely sedentary households here also, living alongside the members of the transhumant households who remain behind. In addition to the livestock, households commonly attempt to grow some crops where they can – hardy species of millet and the grass-like *fonio*. In general the ecological conditions allow only very modest harvests on a couple of hectares of land. But towards the southwest, where conditions are more conducive to agriculture, the economy is actually half-way between agro-pastoralist and transhumant.

The major departure points for the livestock migration are Haraze, Djombo, Arada, Batha Ouest and Ziguéy. After the local rains have ended and the grass is finished, the cattle herders head south towards Moyen Chari (within the cash crop zone). They spend ten months of the year away from home, returning just after the beginning of the rains, to avoid the tsetse flies and mosquitoes in the south, arriving in time for the harvest. During their journey, the herders earn sugar and tea by leaving their cattle to spend some weeks in people's fields so their manure fertilizes the soil.

Near the temporary watercourses (*wadis*) households benefit from the relatively moist soil to practice market gardening. In addition, the wealthier households have access to *natron* (sodium bicarbonate) fields which they collect for sale or employ others to collect for them. Following several years of insecurity across the border, many Sudanese refugee households have settled in the far east of the zone. These households have usually arrived with their animals and form part of the local economy there.

Seasonal Calendar

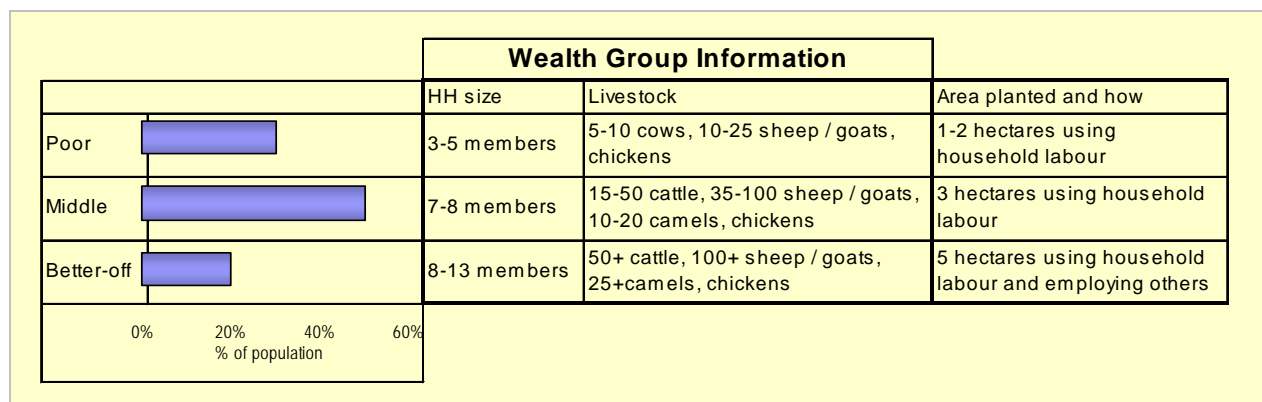
The economic year in this zone revolves around the pattern of livestock migration. The southern migration is usually a slow process lasting about five months until they stop in the pasturelands of Moyen Chari. On the way south, cash and cereals can be earned through selling small stock and milk or by loaning their camels to transport harvested cereal to the market. With the start of the rains around June they return home, to avoid the tsetse flies and mosquitoes. This migration is faster than the southern migration because some of the routes are prone to flooding which would block the return route and make the journey back extremely difficult. Only part of the household migrates, while the other members concentrate on agriculture keeping a few animals around the home as a cash reserve. At the onset of the rains, people prepare the fields and park their animals for manure before planting millet. This work includes digging channels with local hoes to catch and trap locust larvae. During the rains, wild grains grow, including wild fonio and wild rice, which are collected for food in November and December.



Markets

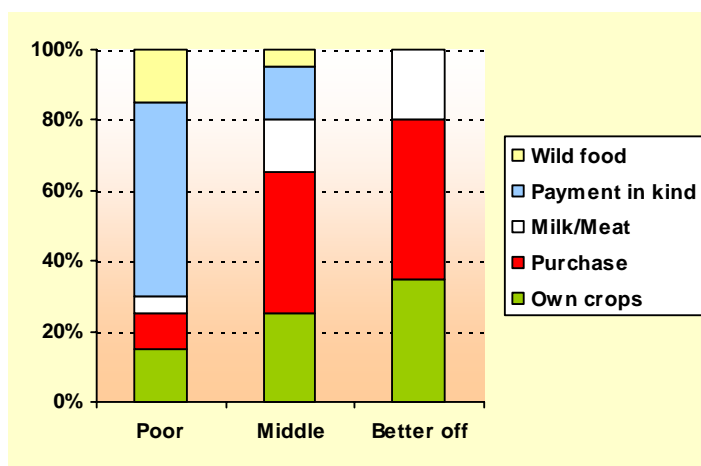
The main commodities that people sell are livestock, *natron* and gum arabic. Very few cereals are sold because the quantities grown are minimal. The principal cereals purchased are millet, sorghum, off season millet (*berebere*) and maize (grown near Lake Chad). The major livestock markets tend to be outside of the zone, the most important of these being Biltine, Oum-Hadjer, Ndjamenana and Bol. There are two livestock markets within the zone, at Djeda and Ngouri.

Wealth Breakdown



Livestock ownership is the absolute determinant of wealth, even if wealthier households tend also to cultivate more land where conditions make it worthwhile. Poorer households are constrained by their small animal holdings and social position and have to rely on working for others and gathering wild commodities and mat-weaving in order to make ends meet. They provide a valuable labor resource for the wealthier households who employ them to herd their livestock in return for payment of a heifer a year and milking rights, or to collect *natron*, or help with agricultural labor.

Sources of Food



Cultivated cereals contribute only a small percentage of annual households needs. Instead, for middle and better off households, the majority of annual cereals consumed are purchased, and complemented by livestock products. An important source of cereal, milk and ghee for poor households is in return for working. Middle households also receive food payments, usually in return for loaning their animals for transport.

Sources of Cash



All households sell animals, but poor households have so few animals that sales have to be strictly limited so as to maintain a viable herd. To make up for this they collect wood and straw, make charcoal and mats for sale or work for wealthier households. The better off households depend entirely sales of their animals or of animal products to earn cash.

Hazards

Chronic/frequent hazards:

- Rain failure, sometimes very localized, sometimes more widespread, affects local pastures from year to year.
- Apart from rain failure, animal diseases are the main threat to people's livelihoods. In particular trypanosomiasis attacks the animals every year.

Periodic hazards: Other animal diseases such as anthrax occur roughly once in three years. One year in about three the rainfall is insufficient for adequate crop growth in the south of the zone, either because not enough rain falls throughout the year or because the pattern of rainfall over time is not conducive to good plant growth. In a zone where the rainfall is already minimal, if a little less rain than normal falls this can have a drastic impact on the harvest. Every one to three years in ten the harvest is attacked by crop pests.

Response Strategies

When their livings are under pressure from any of the above hazards, households increase their secondary activities or develop new strategies. If there is not enough food for their animals, they purchase straw and husks, and begin the migration south earlier than usual. If necessary, whether for cash or to avoid having dead livestock on their hands, households reduce their herd size by selling the smaller animals, but during such times livestock prices decrease sharply. In order to earn cash to purchase cereals, households also turn more to selling firewood, charcoal, mats and fencing materials. Finally they take to 'famine foods', gathering the wild cereal known locally as *krep*, and opening up anthills to collect the grain stored within.

Crisis Warning Indicators

- Livestock migration heads south earlier than normal (before October)
- Livestock prices fall sharply
- Households purchase fodder for their herds.