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Economic influences: markets, projects, cattle ownership, and transfers

Introduction

The objective of this chapter is to discuss the determinants of economic relations between, on the one hand, the herders and the society at large and, on the other hand, amongst the herders themselves. Access to the markets for cattle and cattle products was observed during this study to encompass the fundamental construct of economic relations between pastoralists (mobile and resident) and the other communities (agricultural and business). Several other factors interplay in influencing access to the markets and the relations that are established between these people. Economic influences such as the role of milk transformation units, the presence of agro-industries, a high demand for pastoral products, and the inadequately met subsistence needs of the traditional pastoralists principally determine the evolution of pastoralism in the Far North of Cameroon.

Access to cattle by the pastoralists is a primary factor that underlies the perpetuation of cattle-wealth transfers from person to person, clan to clan, and generation to generation. Livestock transfers are culturally motivated actions that serve as economic rescue packages aimed at securing the livelihood of the impoverished herders (victims of diseases, cattle theft, and climatic shocks) and improving or maintaining existing ties. These cattle transfer and entrustment systems have existed over generations, and although they are gradually declining, they are still entrenched within the traditional pastoral communities of Far North Cameroon. The transfer systems identified during this study include the inheritance of cattle, the gift of a heifer to a child (especially after circumcision for the male child), the gift of a heifer after the completion of Qur'anic studies, religious tax payment (*Zakaat*) on cattle property, temporary loan of a milk cow, entrustment, and the purchase of livestock.

The Far North has also witnessed a series of project interventions that affected the lives of the pastoralists through the access and use of infrastructure of economic importance. In the Waza-Logone area, three large-scale projects were/are operated, and they include the construction of the Maga dam, the SEMRY rice project, and the defunct Waza-Logone project. In the Mindif region, it was the Mindif-Moulvoudaye USAID-sponsored pilot agro-pastoral project and the Swiss-Cameroon pasture-land project of Sirlawé. The SODECOTTON (*Société de Développement du Cotton du*

Cameroon), producer of cotton-seed cakes consumed by cattle, is also present in the entire region. The impacts of these projects, access to the infrastructures they left behind, and their resultant agro-industrial by-products have largely influenced the evolution of pastoralism in the region of study, as will be discussed in subsequent paragraphs.

The modern sedentary agro-pastoralists in particular are engaged in the diversification of their sources of income through cattle-fattening and trade. Amongst the modern pastoralists, the absentee herders (of full absenteeism, including civil servants, civil society workers, people of the business world who invest in cattle, etc.) were found not to be numerous, and estimates carried out during this study¹ show that they comprise about 11.8 per cent (33,040, that is 4,130 households) of the pastoralist population, estimated at 280,000 (about 40, 000 households). Instead, sedentary agro-pastoralism, characterized by hired herders (partial absenteeism), is the dominant feature. The partially absentee herders constitute a greater proportion of the modern pastoralists, 84.9 per cent (237, 720). As regards the nomadic traditional herders, they are very few—about 9,240 (3.3 per cent) of the pastoral population,² although they have many cattle per household.³

The distinction between absentee herders and hired herders has also been discussed in this chapter, to bring out the necessary dichotomy between the two forms of herders before establishing the economic relationships between them. In fact, the link between these herders is the system of entrustment, which is an indicator of the level of absenteeism. For the sake of convenience, I have to split absenteeism into partial absenteeism and full absenteeism to establish relationships between herd owners and their herdsman. Box 5.1 illustrates some degree of absenteeism, where daily herd management activities are placed into the hands of herdsman.

Box 5.1 The view of hired herders

“I am a nomadic herder and I own only 24 cows. I take care of the herd of my Jagordo (patron) who is based in Bogo. He pays me with a two-year-old bull every 6 months. We use the milk of the cattle as if they belong to us”.⁴

“I am a herdsman and I do not own cattle. I am paid 10,000 F CFA (US\$ 20) a month and I milk the cows for the owner who sends the milk to Maroua for sale. During some months I am not paid and I have nowhere to go or to complain. I just manage to live and cannot support a wife. My friend has escaped to his parents because he was not paid for 3 months. He was accused of allowing cattle to destroy a millet farm”.⁵

¹ I adopted the waterhole counting method, in which all the waterholes of my study area were visited, cattle counted, and herdsman interviewed to indicate the number of owners (households) of the cattle they rear. An average of seven persons per household was considered, as this generally reflects the family average in Cameroon (Human Development Report).

² Estimates were made by using the following sources: partial data available in the Sub-Divisional offices of MINEPIA, personal head count by nomadic community leaders, and the baseline data of the socio-economic surveys of 1998 carried out by the defunct Waza Logone project.

³ A family unit of parents and their dependants living more or less together and tapping the same livelihood source or sources.

⁴ Yougouda, floodplain nomad, interview 2007.

⁵ Moumini, herdsman in Makabai, interview 2008.

Access to the markets

Access to the markets for pastoral products determines in a major way the development trend and viability of pastoralism in the Far North Region of Cameroon. The herders take advantage of emerging market opportunities for cattle and cattle products to divert the production goals of traditional pastoralism into a profit-oriented venture. My close observations of the rural economy of the region revealed the prevalence of expanding market opportunities that have drawn in people of other professions, particularly businessmen and civil servants, into the cattle-herding business. The expanding market opportunities are reflected in the increasing demand for beef, milk, and milk products. To meet with the demand for beef, some herders have introduced feed of rapid growth through the practice of cattle stabling, fattening, and sale, and this practice has become a mainstay and a lucrative business for many urban and peri-urban dwellers. Estimates carried out during this study (Table 5.1) show that the profit margins from cattle-fattening and sale by the modern pastoralists more than outweigh the benefits accrued by owning large herds as in the case of traditional pastoralism. In addition, the development of milk storage and transformation technology has more than tripled the potentials of the milk market.

However, in Far North Cameroon, great distances usually separate pastoral production zones and consumption zones. Market-driven forces to meet with consumer needs tend to conflict with the pastoral producers. While the consumers want to obtain finished pastoral products (milk, meat), the pastoralists remain in the primary sector of production, and selling live animals in open and large cattle markets. The cattle market itself is not the final destination of beef cattle. It is also a source of cattle for those who wish to invest in cattle-herding as well as those who wish to diversify the species and quality of their herds. The westward expansion of the cattle trade from Chad through Cameroon into Nigeria faces two major constraints, notably the risks of price and supply instability. Since the 1994 devaluation of the Cameroonian franc currency, the price of cattle has risen exponentially.

The marketing of cattle and pastoral products as an activity of the herders is characterized by a relatively low bargaining power of the herders compared with the more specialised cattle traders. Cattle marketing, as I observed while in the field, is influenced by the herders' motivation for selling, price expectations, problems associated with livestock transport, the seasonality of supply and prices, the role of the government in promoting long-term improvements in the livestock sector—which determines the viability of the pastoral economy—and the relations between the herders and the society at large.

The influence of price expectations

During discussions with the herders while in the field conducting this study it was revealed that their bargaining power during the sale of cattle in the cattle markets is influenced by seasonality and the regional demand for beef. Seasonality impacts herders during the dry period, when fodder and water become scarce and result in many weak and malnourished animals. These weak and malnourished animals do not fetch good prices at the market. In the wet season, cattle are well nourished and fetch higher prices. On the other hand, in the wet season, cattle supply at local markets diminishes because roads become blocked by floods. In the wet season, the floodplain is impassable, the Logone River is flooded, and cattle from Chad do not have easy access to Cameroon

and Nigeria. This leads to a seasonal shortage of cattle supplies and higher prices for local cattle.

Herders contacted during this study indicated that they become aware of prices in the local markets either through attending the markets or through discussions with friends who have recently sold animals. In addition, since some of the cattle markets are close to herders' settlements, it is not uncommon to find speculating herders moving with cattle to the cattle market and returning with the same animals when prices are unfavourable.⁶ Apparently, there is little exploitation of the herders by the buyers and the middlemen. However, the survival of the middlemen largely depends on a margin of profit that must be obtained by exploiting the herders who are not well versed with the procedures of the cattle market. Within the cattle markets, the middlemen have become indispensable⁷ in the marketing chain in such a way that the herders who bring their cattle to the market surrender them to the middlemen and receive money only after transactions are completed.

According to the herders, it was rarely in the interest of the middlemen to communicate actual cattle prices to the herders because they would like to buy from the herders to obtain a margin of profits during onward sales. The herder–trader price feedback is also not as smooth as expected; herder–herder and trader–trader information flow is much more effective. However, the herders are not completely unaware of the daily fluctuations of livestock prices. One indication that herders are very aware of price variations over space and time is that cattle prices have practically more than doubled since the 1994 devaluation of the Franc CFA. The demand for beef has increased over time, and the cost of living for herders has also increased, compelling them to increase the prices for their animals. In the Nigeria–Cameroon border cattle market of Banki, traders complained that herders have raised prices in a unilateral fashion, presumably in response to higher demand in Nigeria and increased cost of living.

Furthermore, a very important equity issue that hinders effectiveness in marketing is that of alternative access to information. Owing to the regular movement of cattle traders from one market to another, they are better informed than producers. In their course of trading operations, traders are well apprised of prices over space and time. This gives them an advantage during transactions. On the other hand, herders that do not frequent the market face higher transaction costs in obtaining accurate information. In addition, larger traders who shuttle from one market to the other possess better information than their smaller counterparts. This has especially important implications for the buying and transiting of cattle from Chad, through Cameroon to Nigeria. The larger traders need information from temporary inter-market price differentials which enables them to move their sale animals from one market location to another to gain profits. Seemingly, there is also unequal access to information among herders of different herd sizes because they do not have the same rate of cattle off-take.

Market integration

The markets for pastoral products (beef, milk and milk products, hides and skins, etc.) have expanded and are still expanding within Cameroon and particularly within its

⁶ Aya Adoum, middleman in the cattle trade business confirmed that he usually has difficulties in convincing herders to sell their animals when market prices are poor.

⁷ When the herder arrives with his animals at the cattle market, the middleman says “*mi naangidi*” (I have taken over your animals). But if the herder does not trust the middleman (*Dilali*), he may not surrender his animals to him.

larger neighbour, Nigeria. Both the traditional and modern pastoralists of the Far North of Cameroon have been largely integrated into the larger market economies, and this has greatly influenced their livelihood and pastoral activities. However, unfavourable terms of trade for pastoral products in relation to other staples, particularly cereals (rice, maize, millet) that have more than doubled their prices, undermine the livelihood base of the pastoralists. The milk trade for traditional pastoralists is still the most fragile because of its perishableness and the few options available for its storage, transformation, and onward transportation to the urban markets. In the wet season, within the traditional pastoral camps when milk is most abundant, unsold milk is thrown away, wasting valuable proteins which could be useful in other conditions. Modern agro-pastoral households, on the contrary, who are very close to urban centers, are always short of milk supplies because of the presence of the ever-ready market of the milk transformation units. Some milk transformation units refuse to buy the milk produced by traditional herders, claiming that it is dirty. They prefer to buy from their regular suppliers, whom they have taught how to milk in a better way in clean containers. To assure regular income, these milk producers have to comply with the conditions of the buyers in order to be integrated into the market. Market integration of pastoral economies therefore varies substantially in the region, depending on who has which products, of what quality, and at what time. The inability to access the markets, due to conditions that may be posed by market forces, remoteness, lack of preservation technology, and unfavourable terms of trade, therefore, largely determine the livelihood vulnerability and the marginalization of the herders.

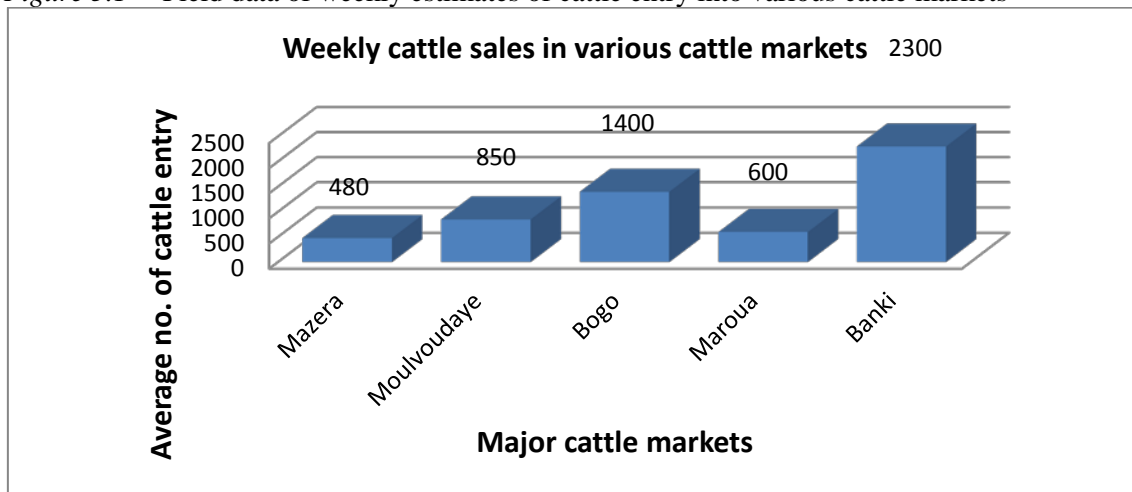
Herder motivation for selling cattle

All things being equal, increased cattle production and/or higher prices will lead to increased supplies of cattle in the market only if herders decide to sell more animals. This implies that what motivates the herders to sell is crucial. The herders I had discussions with during this study indicated that in the short term, at least they tend to sell animals when they have a pressing need for cash rather than when the sales will maximize their cash income. Such behaviour may be economically rational, in that:

- The value of cattle has been increasing rapidly in recent years; therefore, cattle—unlike cash—provide inflation-proof savings.
- Given existing land tenure arrangements, the private costs of holding an additional animal are low.
- Cattle are costly and as such it is more difficult for household members to make demands on cattle than on cash. When cash is solicited by household members, cattle are the most likely asset to be sold to obtain cash.

The increasing demand for cattle and cattle products, especially the demand from the highly populated neighbouring Nigeria, is a more than sufficient motivation for herders to sell their animals to make gains. Nigeria alone consumes about two-thirds of the total annual cattle sold in the cattle markets of the region. The westward movement of cattle trade (cattle trade routes on Map 5.1) is what is most evident. The presence of the weekly cattle markets of Mazera (dry-season floodplain market), Moulvoudaye, Bogo, Maroua, and Banki (border-town cattle market with Nigeria) supplies most of the cattle that drift towards Nigeria. The same cattle, if not sold locally, can pass along all these markets while journeying to Nigeria. The cattle numbers generally increase as they drift closer to Nigeria, as shown in Figure 5.1.

Figure 5.1 Field data of weekly estimates of cattle entry into various cattle markets



The analyses of the cattle sales data collected during the course of this study show that dry-season sales are highest, for the following reasons:

- At this time, cattle from Chad and Sudan traverse the floodplain with ease, while July, August, and September register the lowest sales.
- The need for cash is also highest in the dry season since the modern herders purchase supplementary feed.
- The traditional herders need cash to resolve conflicts and negotiate their way during migrations.

The market economy which has yielded a greater demand for cattle and cattle products is a motivating factor for the greater need for money. Cattle have to be converted into cash needed for daily subsistence and problem resolution, implying that the herders must respond to market forces. Over the past four decades, even the nomadic economy has been transformed to a cash economy whereby household subsistence needs, hospital bills, cattle vaccination, council dues, and fisher–herder and farmer–herder conflicts are regularized by cash. However, cattle management and cattle-related ventures are traditionally vested in the hands of the men. Equally, transactions in the cattle markets are also male-dominated and act as sale points of cattle for cash.

Participation of women

The modern sedentary agro-pastoralists have greater access to nearby markets, and the men of modern pastoral households have practically taken over dairy products' marketing owing to accessibility and profitability. The marketing of milk is therefore done by the household heads and through middlemen of milk transformation units, a situation which deprives the women of their traditional rights over milk animals and participation in sales' decisions. In addition, commercialization and consequent sedentarization have reinforced gender differentiation and made women more dependent on men for cash. Some traditional pastoralist women of the Alidjam group I discussed this with showed reluctance toward sedentarization that would ignore and undermine their economic status. They saw sedentarization and involvement in agricultural activities as a decline in pastoral women's rights as well as in their economic and social status.

The reduction in milk availability has equally brought in changes in the pastoral household diet—there is now greater and more diverse cereal consumption—and an increase in the amount of time and money women spend on food purchase and processing. Pastoralism is usually oriented to meat and milk production, which requires the purchase of cereals from the market, since the herders themselves do not cultivate them. Grain, vegetable oil, tea, sugar, and other consumables have now become components of their diet, and these are obtained by cash payment. It is mainly the pastoral women who are responsible for buying and feeding their households, and the terms of trade do not favour pastoral products. The cash obtained from milk sales is quite insufficient to purchase needed cereals. Recently, the decline in per capita milk production and dairy marketing in traditional pastoral households has increased the dependence of women on men to provide them with needed cash. As cereals become more prominent in the diet, nomadic women spend more money in purchasing the cereals, more time in transforming the shelled grain into meal, and more time in obtaining more fuel wood for cooking.

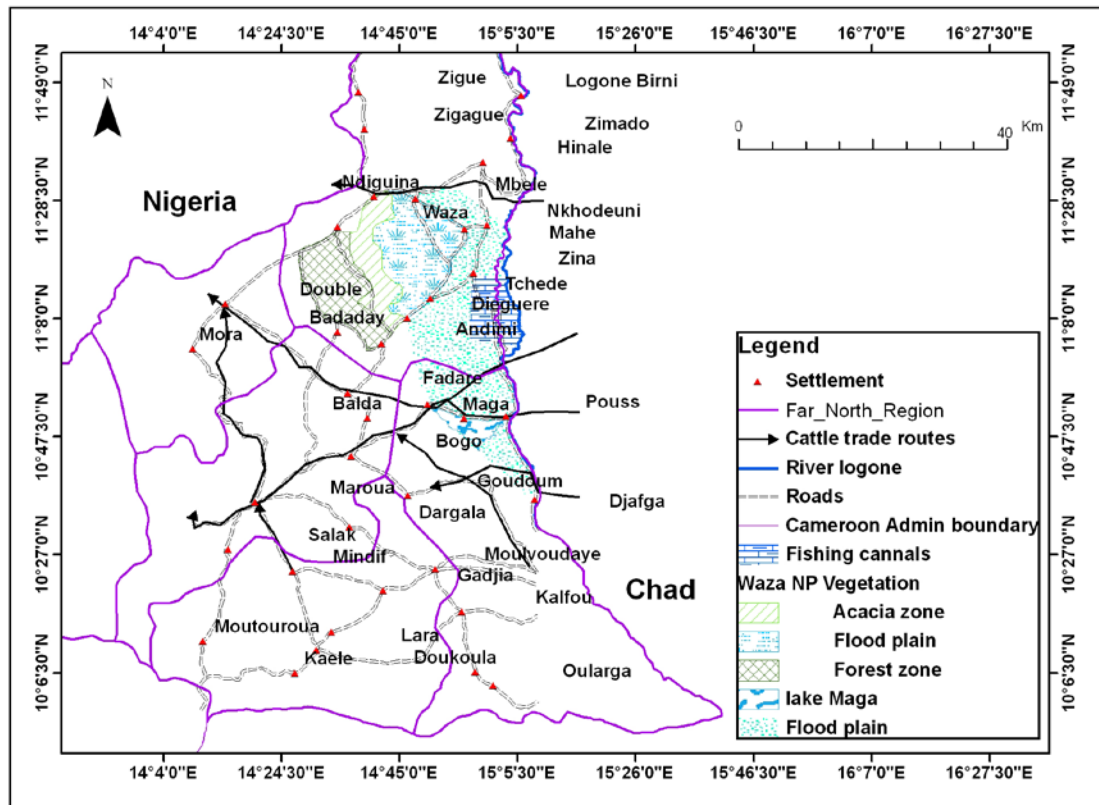
The traditional pastoral women and especially children also suffer from inadequate milk distribution. The men, as in the Arab Shoa households, place greater priority on calves, and by doing this, income for women from milk commercialization is diminished. This also impacts on the subsistence of the children if a compromise is not reached on calf/child needs. A more immediate consequence of the drift out of dairying is its adverse effect on women's normal authority over the management of household milk supplies: how much milk is allocated to children or other members of the household, to guests and for marketing, is usually compromised by the need to feed calves. Moreover, while the women contribute very significantly in the labour-intensive task of caring for the calves, their male counterparts in poorer households control income from milk sales. As indicated earlier, the women are excluded from the male-dominated cattle markets, and in times of need, men sell off animals that belong to their wives. Moreover, the absence of infrastructure and milk preservation technology in rural areas has prevented most women's direct access to the urban consumers.

Cattle transport

Livestock transportation is one of the major problems encountered by the pastoralists. The cattle traders and herders complained of very narrow roads and trek routes through heavily farmed areas. Farmers cultivate right up to the edge of the roads, and animals often stray into the farmlands, causing frequent crop damage. Subsequent disputes with farmers over compensation is not uncommon (see Chapter 6). The poor conditions of the trek routes (Map 5.1), roads, and bridges especially during the wet season are a major handicap to the cattle market. The animals become exhausted trekking through heavy mud (flooded areas), and the lack of night paddocks along the routes helps to aggravate the situation. Even where night paddocks become temporarily available, as in Guirvidig and Mazera, they are soon taken up by local farmers when they become heavily-manured.

Trekking cattle within and out of the Far North Region of Cameroon is problematic because, except for a few cattle corridors, there are no separate trek routes for cattle. The animals therefore have to trek along the main highway. Accidents between cattle and vehicles are not infrequent: traders reported that this is a very common phenomenon, and the herders/traders are generally asked to pay for damage caused to vehicles. The cattle also lose considerable weight during the long-distance trek.

Map 5.1 Cattle trade routes from Chad through Cameroon to Nigeria



Retail beef marketing

Price controls by the State and the fluctuation of market forces have hindered the smooth development of the livestock sector in Cameroon. All the butchers interviewed during this study cited retail price controls by State agents as a factor that hampers cattle trade within Cameroon. The Ministry of Trade and Commerce carries out regular enforcements of State-fixed prices at all retail levels. The butchers think that they lose money when they sell at the fixed government prices. Some of the butchers evade the law, and this creates the possibility for corruption by making the price-control agents turn a blind eye to price raising. In urban areas where the price controls are very strict, butchers and cattle merchants move to more laxly enforced price zones.

By regulating prices through the imposition of price ceilings, the State reduces the profit chances of butchers and imposes a limit on the free economy. A fundamental issue underlying price fixing is its disincentive effect upon livestock production due to the potential occurrence of low prices. Price controls as viewed by the cattle traders and butchers are inconsistent with the objective of increasing livestock production in the Cameroonian market, and this situation encourages traders to move to the Nigerian market.

Beef retailers also complained about the quality of slaughterhouses and facilities available to them. Some slaughterhouses lack carcass hoists, running water, and adequate sanitary conditions. According to the butchers, although they pay taxes for the slabs and the markets, the local governments divert the money for other purposes. During discussions, the butchers suggested to me the putting in place of a sort of decentralized control, where management should be transferred to a butchers' association.

Cattle fattening, milk production, and sale

Analyzing the economic performance of pastoral activities requires a clear identification of the objectives of pastoral production. Generally, pastoral production has two main objectives. The first objective relates to the ultimate purpose of pastoral activity, which is to produce milk and meat that are marketable on national and international markets; the second suggests that the true objective (and vocation) of pastoralism is to provide food and guarantee income security for pastoralists (FASU, 2001). I would like to think that combining the two objectives to evaluate both the performance of pastoral activity and pastoralists' income would be ideal. In practice, the general trend is to make pastoral production meet the needs of national demands and, in some cases, satisfy the international markets. Whatever the case, choosing either of the two objectives above will determine the type of economic evaluation to conduct, but in this case, this study is limited to the assessment of the output and cost involved in cattle fattening and milk production.

Cattle fattening

Cattle fattening for profit making has become a mainstay in the modern pastoral economy of Far North Cameroon. The modern pastoralists obtain cattle to fatten from the cattle market and from their own herds. Their sources include the following:

- Cattle from the market come either from the local cattle markets or are bought directly from nomadic herds. The animals purchased are those that have become exhausted and weak, and are on the brink of death (Photo 5.1), unable to pursue transhumance. They cost little money, less than a quarter the price of a healthy cow. Even if the animal is unable to walk on its legs, it is wedged up⁸ by men and loaded into a pickup truck for onward transportation to where it is going to be reformed and fattened. Cattle fattening is principally a dry-season business for the urban and peri-urban modern pastoralists, who are sure to make a net gain of between 60,000 F CFA and 100,000 F CFA per fattened animal.
- Cattle from the herder's herd, mostly young fast-growing bulls (Photo 5.2). The bulls easily respond to the fattening goal when they are fed with cotton-seed cakes. In this case, the herder spends money only in buying cotton-seed cakes and hulls. The herder's aim here is to gain money for subsistence and household needs and to be able to buy more feed for the other animals for the rest of the dry season. The average cost of fattening a healthy bull is 50,000 F CFA (4 bags of cotton-seed cakes and 4 bags of cotton hulls), excluding the costs of millet stalks that are provided by the farmer himself. After fattening, the bull can be sold for between 300,000 F CFA and 350,000 F CFA.
- Exhausted transhumant animals from entrusted herds, withdrawn from the transhumance zone to the owner's residence for treatment and fattening. The

⁸ This is a picture of a wedged-up cow that can hardly stand on its legs owing to exhaustion from migration and hunger. I personally witnessed a situation where people used sticks to wedge up a weak female cow. The wedging-up was done by two Mousgoum modern pastoralists and two Adanko'en traditional pastoralists (they brought the cow from the floodplain to Guirvidig on foot, but when it became tired, they loaded it onto a pickup truck to the Bogo cattle market). The cow was then bought at Bogo market, left to rest for two days in Bogo, then transported to Maroua for treatment and fattening. Transporting it to Bogo in the pickup truck cost 10,000 F CFA, and the animal was sold at 55,000 F CFA. After treatment, fattening and sale, the buyer informed me that he sold the cow for 230,000 FCFA, having spent 160,000 FCFA and made a net gain of 70,000 F CFA.

modern herders have made it a habit not to sell weak cattle to butchers at low prices; they prefer to carry the animal on a pickup truck to the owner's residential area for fattening. The fattened animals may either be sold or sent back to the main herd after regaining their health and strength.

Photo 5.1 Wedging up a malnourished cow to fatten it in Guirvidig



Photo 5.2 Cattle fattening in Mindif



Cattle fattening and sale, as an important component of pastoral modernization, provide ready cash for the herders. Cattle fattening is carried out mainly through stabling, or the cattle are at least fixed under a shade structure and regularly fed with cotton-seed cakes and hulls and millet stalks for about three months. The fattened animals are then taken to the market for sale, and they are highly solicited in the local market.⁹ Although few in number, fattened cattle sell like hot cakes to the butchers and to prestigious ceremony organisers. In most cases, when a fattened bull is slaughtered during a marriage ceremony, it becomes the talk of the day.

According to the herders, cattle fattening is generally witnessing a setback. Highway bandits locally known as *coupeurs de route* track down herders on their way back from the cattle market and snatch away their money. In other areas, like Kodeck and Fadare, local thieves monitor the cattle owners and launch attacks against them on the day they sell the fattened animals since they are sure to get money. No money for the thieves on the day of sale may mean death for the herder. This has discouraged people in the remote areas from venturing into this lucrative activity. The herders of Kodeck have relinquished cattle fattening as a result of night attacks by thieves.

Within or close to the urban areas where cattle fattening is better secured, butchers negotiate with the cattle fatteners even before the animal is ready for sale. The butchers think that fattened cattle have abundant beef that is richer in proteins when compared with transhumant cattle which is always on the move. "With fattened animals, buyers identify the beef at sight and the demand is high. Buyers think that the beef of transhumant cattle is tough due to the frequent movement of the cattle and is not easy to cook."¹⁰ Scientifically, cattle stabilization and fattening may accumulate greater nutrients and fat in cattle that can weigh higher than energy-wasting transhumant/nomadic cattle.

⁹ Ousmanou Biri, cattle trader and cattle fattening professional operating in Guirvidig.

¹⁰ Souleyman, butcher in Maroua, discussions, 2008.

Production cost

I have assessed the production costs of the modern and traditional systems following inputs invested in both systems. Although the traditional pastoral system relies on free natural forage, the pastoralists incur financial costs¹¹ to sustain the system. Traditional pastoralists incur costs through tributes that they regularly pay to the Lamido, in whose territory they graze their animals. In each Lamidat is found a Sarkinsanou, a person in charge of the cattle. He knows the pastoralists very well and before they enter into his territory they have to come and get permission and declare the number of their cattle, whereby tributes are then levied for immediate payment. The Lamido does not take the money alone; it is alleged that he shares the money with other local administrative authorities. Local councils and vaccination teams also track down the herders for the payment of dues and 'non-dues'.¹² Other associated costs they incur include compensation for damage caused to fishing canals or farmlands, herdsman's salary for large herd owners, and salt and natron¹³ for the cattle.

As regards the modern pastoralists, heavy costs are incurred on cotton-seed cakes, hulls, and millet stalks in the form of supplementary feed for cattle. Payments are also made to herdsmen—and at times to the *khalifa* where entrustment takes place—and for cattle vaccination, water, damage caused by cattle, and taxes. Generally, the disparity between modern and traditional pastoralism is very marked in the dry season, when water and pastures are most scarce. Water and supplementary feed is given to cattle twice a day: in the morning about 7:30 AM before departure for open-field grazing, and in the evening around 5:00 PM at return from the field. Table 5.1 illustrates the annual average cattle-herding costs incurred for both the traditional and modern systems of 11 sampled herds.

The estimates found in Table 5.1 represent the annual average values of 11 sampled pastoral households' herds, collected with the assistance of field collaborators.¹⁴ These are strictly estimates only, since aside from vaccination records no other recorded data was available for both systems. However, from my understanding, analyses, and appreciation of the data, I think that it constitutes a reliable basis for comparison of the cost effectiveness of the two systems. Although the intrinsic characteristics of both systems show some variations, they bear strong similarities that can be compared.

Comparatively, modern pastoralism is an expensive system, with an average annual cost per herd of 570,354 F CFA, about double the cost of running a traditional herd, which stands at 274,512 F CFA per year per herd. When we look at the annual average cost of maintaining an animal for a year, the cost for the modern pastoral herd (9,506 F CFA) is triple that for the traditional pastoral herd (3,268 F CFA). Disparity occurs in three major areas: namely, in the purchase of cotton-seed products and millet stalks, in veterinary treatment, and in the watering costs greatly used by the modern pastoralists. As regards vaccination cost, both groups spent almost the same amounts, but it is a

¹¹ During discussions with herders they made some general estimates of costs they incur as follows: 20,000 F CFA to the traditional leader for social protection; 10,000 F CFA to the forestry department for exploitation tax; 20,000 F CFA to the district head for administrative authorization; and F CFA (300 F CFA per head) to the veterinary services depending on the number of cattle vaccinated.

¹² Officials always have a tendency to make these people feel that they have broken the law and have to be punished, in which case they become obliged to pay their way out.

¹³ This is calcium carbonate that develops from salt springs. It is consumed by livestock, in the same way as local salt or sodium chloride.

¹⁴ Oumarou Kari, in kind collaboration with Dudde Elie.

little higher for the traditional pastoralist because they are obliged to vaccinate their cattle in order to obtain transhumance permits.

Table 5.1 Annual average costs incurred per head in F CFA

Inputs	Modern pastoralism	Traditional pastoralism
Cotton-seed products	3,283	230
Millet stalks	961	0
Herdsmen salary	1,420	475
Veterinary treatment cost	565	120
Vaccination cost	822	990
Watering costs	300	0
Compensation for damage	218	345
Communal taxes	367	284
Salting	235	650
'Gifts' to the Lamido	95	174
Average herd size	60	84
Costs per herd	570,354	274,512
Costs per animal	9,506	3,268
Number of herds surveyed	7	4
Average monetary value per animal	180,000 F CFA	

Source: Based on field findings

Some modern pastoralists who have entrusted herds also obey the same rules. Nomadic pastoralists pay transhumance tax because they regularly go across administrative boundaries, while the sedentary pastoralists pay communal taxes in the councils where they are resident. Traditional pastoralists pay higher sums for damage caused on farmlands and fishing canals than the sums paid by the more sedentary modern pastoralists. Crop damage by traditional pastoral herds occurs mostly during transit and occurs in the floodplain on fishing canals.

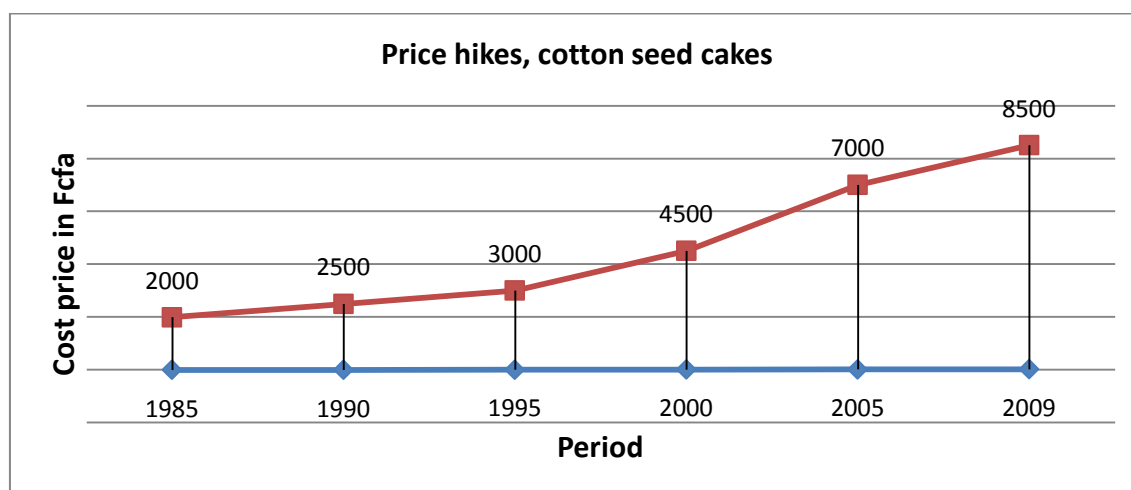
In spite of the high costs involved in modern pastoral production, it is surviving and expanding, owing mainly to its market-oriented objectives. The overall production and productivity of the herd more than outweighs its running costs. Just 2 fattened bulls are enough to pay for the yearly running costs of the modern pastoral system. The natural increase in the size of the herd (the average for a balanced herd is 18 newborn per 100 cattle per year), the increase in the sizes and costs of growing animals, and the benefits derived from milk and animal sales are among the great advantages offered by this system.

In addition, the rapid expansion of modern pastoralism has resulted in the unprecedented use of cotton-seed cakes, driving up the prices¹⁵ of cotton-seed cakes (*tourteaux*) by about 340 per cent from 2,500 F CFA in 1985 to 8,500 F CFA in 2009 per 60 kg bag (retail price, as against an average of 5,000 F CFA factory price), as shown in Figure 5.2. Complaints forwarded by herders to the cotton-seed cake producer, SODECOTON, to organize sales in favour of the herders yielded no results. The company is interested in large buyers who in turn retail the products at exorbitant prices, periodically creating artificial scarcities to increase the prices. Some poorer families can no longer afford to buy cotton-seed cakes. They use mainly cotton hulls (*coque*), and

¹⁵ The average historical inflation rate in Cameroon stands at 2.5 per cent (MINEPAT, 2010).

they think that a few strayed cotton seeds in the hulls can be helpful to cattle, while others think that they have no option but to just occupy the animals by making them chew something, even if it is of low nutritional value.

Figure 5.2 Price hikes of cotton-seed cakes based on retail sale records in Maroua



Attempts I made to estimate the number of fattened cattle were futile because about half of the fattened cattle do not enter the cattle market since butchers buy them directly for slaughter. Cattle fattening is done by any person who has the means and space to keep the animals, and fattened cattle are sold with the greatest discretion by the owners to avoid being harassed by thieves on the day of sale. They are also animals of pride, slaughtered during marriage and religious ceremonies, and individuals buy them directly from the owners without passing through the local market.

Milk production and sale

Although cattle, sheep, and goats' sales rank highest as income-generating activities (Table 5.2), milk sale is also important as a source of income to both the traditional and modern pastoralists.

Table 5.2 Animal type and use rank by preference

Rank	Animal	Use						
		Meat/Cash	Milk	Plough	Transport	Manure	Hide	Reproduction
1	Female cow		x			x	x	x
2	Bull	x		x	x	x	x	
3	Sheep	x					x	x
4	Goat	x					x	x
5	Donkey			x	x			
6	Horse			x	x			

Source: Based on interviews and personal observations

Milk processing and sale is associated with the Fulbe women, and milk plays a central part in the pastoral economy, as confirmed by De Bruijn (1997). Milk sale is usually the most important means by which a nomadic pastoral woman can earn money. Milk is indisputably the most important product of the cow and also highly valued by the

pastoralists. As far as the traditional pastoralists are concerned, milk serves as food and income.

Within the pastoralists' camps, milk is served with rice, millet, and in most cases simply as yoghurt to almost all visitors, to welcome them and make them feel at ease. Milk is used to supplement diets composed of cereals and even exchanged for cereals and fish, as I witnessed in the neighbourhoods of Mazera and Goroma. About half of the milk produced in nomadic households is destined for the market. It is processed at home into yoghurt and butter, head-loaded in calabashes, and transported to the nearby local market for sale. A litre cost about 250 to 300 F CFA, depending on the seasons and location. Money obtained from milk is used to purchase household needs, especially food for subsistence. With the help of the herders, estimates of the milk output per milk cow for the traditional herders as well as for the modern herders were arrived at. In the wet season very little difference was recorded (1.60 litres for the traditional herders against 1.45 litres for the modern herders) since both systems have abundance of water and pastures. In the dry season a wider margin was observed (0.75 litres for the traditional herders against 1.00 litre for the modern herders) (Table 5.3). During the dry season, the modern herds use supplementary feed to obtain high milk output, to satisfy the demands of the milk transformation units. Overall, however, the traditional herders produce greater quantities of milk, as they have more milk cows and their production objective is not geared only towards milk maximization.

Table 5.3 Milk production compared

Herders	Wet season	Dry season
Traditional - mobile	1.60 l	0.75 l
Modern - sedentary	1.45 l	1.00 l

Source: Field data

For some of the wealthy pastoralists, refined butter is used for the cooking of rice. When milk becomes abundant, especially in the wet season, plastic gallons of 20 litres each are placed on donkeys, an average of 40 litres per donkey, one on each side, and it is not uncommon to find 4 to 5 donkeys guarded by women *en route* to Maroua, Bogo, Mindif, Moutourwa, or Pétté loaded with milk for sale. While in the field I came across several such groups, who parade the streets leading to these markets, and on their return they have cereals that they purchased, loaded on donkeys. Some organized milk transformation units refuse to buy nomadic milk because they claim that it is dirty.¹⁶ However, many others accept it.

To the modern pastoralists', milk is beyond just a food: it is a highly valued commodity meant for the generation of cash. The modern pastoralists have been organized into groups by milk transformation units to further tap the value of milk. Cotton-seed cakes are used to feed lactating animals in order to increase the milk output for more income. Some milk transformation units like the *Avenir des femmes de Pétté* are using this strategy to provide cotton-seed cakes to herders in exchange for milk.

¹⁶ During a Tuesday wet-season milk market in Moutouroua, I observed nomadic milk brought to the market in abundance, on about 100 donkeys carrying 40 litres each, with about 90 women, each carrying on average a bowl of 10 litres of milk. At the end of the market, the milk that was unsold was given away for free and some was merely thrown away. During the dry-season market, when the nomads are all gone away, to obtain 20 litres of milk is not a certainty.

This strategy has resulted in greater profits for both the herders and the milk transformation unit. They are sure to sell all that they produce at fairly reasonable prices. A small milk producer of 4–5 litres a day at 300 F CFA a litre may gain on a monthly basis 35,000 to 40,000 F CFA. Since all the milk is sold, butter is difficult to come by within the modern pastoral setup. Large producers may earn up to 70,000 F CFA a month. Meanwhile, the milk transformation units obtain high profits from milk transformation into yoghurt. A transformed litre of yoghurt is 3 times more expensive than the fresh milk, and it is also highly sought-after during the hot dry season. To the milk transformation units, the production of yoghurt and cheese is seen as a viable business. However, the quantity of milk is inadequate given that local breeds have low milk output.

Milk transformation units

During discussions with the traditional pastoralist women after the presentation of the Zebu data collar results using a prototype robot, they stressed that milk trade determines their patterns of mobility and settlement location. The milk market factor is therefore important to both traditional and modern pastoralists in the location of their settlements. The consideration of the proximity to market centres for milk and milk products is probably next most important after cattle markets in encouraging people to settle and carry out pastoral modernization activities. The emergence of milk transformation units is notably a further stimulating factor. Since milk is a perishable product, close proximity to sale points is a prerequisite for effective supply of milk to its consumers, given that the climate is hot and preservation techniques are inadequate. The economy of the woman is based on milk trade. The pastoral women regularly supply local markets and settler villages in order to buy subsistence needs. Milk and milk products are a life-line and a financial power base for the woman.

The activities of the Common Initiative Group (CIG), *Avenir de Femme du Pétété*, illustrate how milk transformation units promote pastoral modernization. This CIG was created in 2001 with the assistance of Swiss partners and had as its mission the collection and transformation of milk into yoghurt and cheese. All the sterilising and packaging equipment was supplied by the Swiss partners. The CIG has trained and organized over 150 sedentary herders into groups, to enhance collaboration and facilitate milk collection for onward transmission and transformation. Milk collecting cans have been made available to the herders, and the payment is either made in cash or in exchange for cotton-seed cakes and hulls. In 2007, 250 tonnes of cotton-seed cakes and 90 tonnes of cotton hulls were distributed to herders in exchange for milk. In 2008, the quantity of cotton-seed cakes and hulls distributed to herders rose to 400 tonnes, and in 2009 to 650 tonnes.¹⁷ The herders get easier access to these supplementary feeds when compared with others who have to travel to Maroua to obtain supplies. Cattle-fattening has also been enhanced, as the feed supplements are consumed by both lactating cattle and cattle selected for fattening. It is the herders that benefit from sales of fattened cattle, while the CIG benefits from the milk. The November yoghurt sales of 2008 at 300 F CFA per 250 cl bottle amounted to 474,950 F CFA. Much yoghurt is consumed in the dry, hot period, especially in the urban centres. In February 2009,

¹⁷ *Avenir de femme du Pétété*.

income from yoghurt and cheese rose to 522,850 F CFA. Generally, a monthly average of 400,000 F CFA is obtained from the sales of yoghurt.¹⁸

Other milk transformation units operate in a similar manner to that of Pétté but do not distribute feed supplements to the herders. They buy milk from organized partner herders for transformation and sale of finished products in the urban markets. One of the most prominent among them is the *Redou Ngniwa* of Domayo in Maroua, created in 2005 with assistance from the European Union and CARIPLO foundation. The *Redou Ngniwa* controls about 23 collecting units, comprising 90 members in all. The herders are trained on hygienic practices, good cattle feeding, and on some ideas on the pathology of a milk cow. The herders are also supported with light milk-collecting containers, a sieve, and a thermometer. The collected milk is then transported to Maroua and exchanged for cash. There is also *La laitière de Maroua*, adjacent to Wiola Voyage, run by a Christian foundation; *Walde Danai*, Sahel Yoghurt, etc.

Access to inputs

Cotton by-products

As earlier highlighted in Chapter 2, the primary activity of SODECOTON is also the production of cotton and cotton-seed oil, which result in by-products such as cotton-seed cakes and hulls for feeding cattle. The raw cotton is processed in the SODECOTON-owned ginneries, which are located throughout the cotton-producing region of North Cameroon. Most of the processed cotton fiber is exported to several European, Asian, and American markets; only 7 per cent is sold locally to the CICAM (*Cotonnière Industrielle du Cameroun*) textile mill, for the production of African prints and other clothes. As a secondary product, cotton-seed oil is processed in two oil presses located in Garoua and Maroua, with a yearly production of approximately 16,500,000 litres (2008/09). Although facing tough competition from cheaper palm oil, cotton-seed oil is highly appreciated in Cameroon as a cooking oil.

At present, more than 90 per cent of all cotton produced in Cameroon is bought and retailed by the village associations. There are close to 60,000 cotton-producers found in Far North Region, which produces 20 per cent of Cameroon's cotton. They own small farms covering an average area of about 1 hectare per farmer and have little means of production or financial resources. Since 1979, the SODECOTON has been engaged in setting up village producers' associations (AVPs), which are designed to collect the cotton produced in the villages and to organize the primary buying of the cotton. These are tasks that were formerly fulfilled by the buying teams of the SODECOTON; now villagers have taken over this responsibility. It was expected that this would expand cotton cultivation, limit the occurrence of fraud at the collection stage, and avoid conflicts between SODECOTON officers and villagers selling their cotton. There are now more than 1,000 of these AVPs, at a total of 1,150 buying points (cotton villages). The AVPs compete with herders for space on the one hand, and on the other hand cooperate with the herders by allowing them to feed their cattle on the harvested farmlands with the hope that cattle dung will fertilize the farmlands.

The production and sale of cotton-seed cakes and hulls to pastoralists became pronounced during the droughts of the 1980s. As pastoralists were exposed to the nutritional advantages of cotton-seed cakes and hulls over time, many agro-pastoralists

¹⁸ Martine, Coordonnatrice CIG *Avenir de Femme du Pétté*, interview, November 2007.

began cultivating cotton in the early 1990s to sell and/or exchange for cotton-seed cakes. The involvement of agro-pastoralists in the cultivation of cotton boosted the efforts of SODECOTON in the promotion of draught animals' technique and the sale of veterinary drugs. After collecting cotton from the farmers' fields, it is brought to the factory, where the cotton seeds are separated from the cotton fibre. After being crushed to remove the hulls, the seeds are finally heated and pressed to extract table oil. The cotton-seed cakes (*tourteaux*: see Photo 5.3)¹⁹ produced in the Maroua factory are also known as *nutribet*, in which calcium (3 per cent) and salts (2 per cent) are added to complement nutritional needs for cattle. The cotton hulls (*coque*)²⁰ is a simple cotton fibre of low nutritional value, which at least helps to fill the stomachs of cattle when grazing fields are void of pastures.

Photo 5.3 Cotton-seed cake retailer in Bogo



Quantity-wise, the sale of cotton-seed cakes rose from 18,000 tons in 1983, to 115,020 tons in 2006, to 124,300 tons in 2008 (Figure 5.3). However, the sale of animal feed remains a minor source of income for the company and amounts to about 2.3 per cent of the total revenue of less than 2 billion F CFA [verbal factory data; no exact figures were disclosed]. In terms of revenue, income for the factory rose from 350,000,000 F CFA in the early 1980s to over 1 billion F CFA in 2009.²¹

¹⁹ Locally known as *bakkewa* or *marware*, highly sought-after by sedentary herders, and very scarce during peak dry season (April and May).

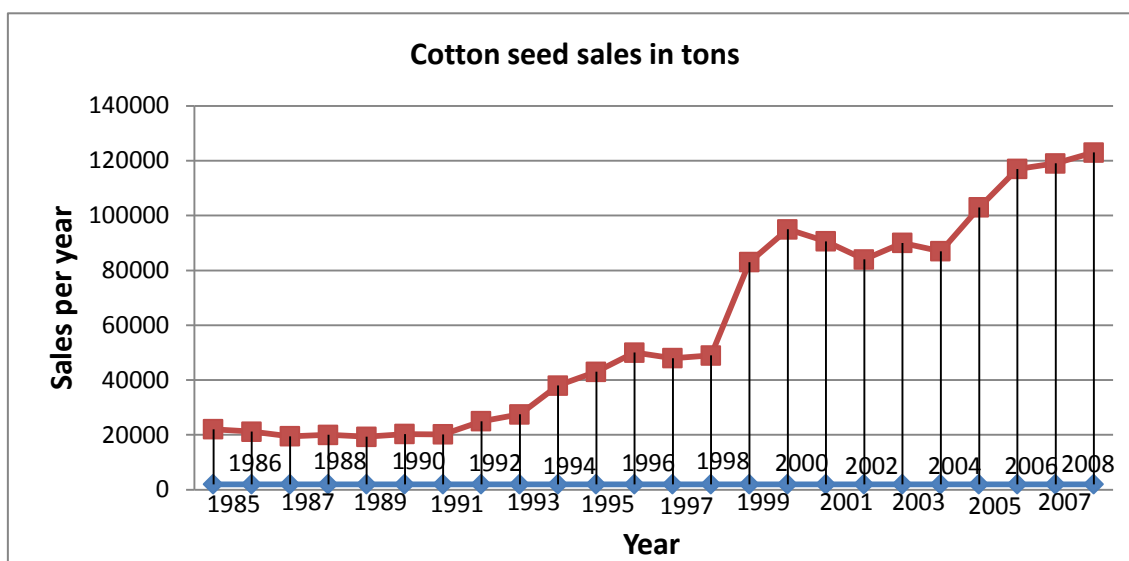
²⁰ Locally known as *bidje*, its nutritional value is dependent on the quantity of strayed cotton seeds found inside.

²¹ Verbal declarations of the livestock programme manager, Hamadou, Maroua.

Over the years, cotton-seed cakes and hulls have become vital supplements for cattle, particularly during the dry season when fresh pastures are difficult to obtain. Cattle-fattening is equally a reality for cattle traders, particularly speculators who buy cattle during the peak dry season when prices are at their lowest ebb, and who fatten to sell when prices are high again. The facilities provided by SODECOTON have largely encouraged the pastoral modernization process since feed supplements (cotton-seed cakes and hulls) are easily accessible to those who can afford them.

SODECOTON help train oxen for the farmers and provide them with the materials for ploughing. Horses and donkeys are also used to supply draught power for the plough and in transportation.

Figure 5.3 Cotton-seed cake sales in the Maroua SODECOTON factory



With these possibilities, farmers regularly extend the cultivated area into grazing lands (Table 5.4). When conflicts ensue between farmers and herders, SODECOTON does not intervene; instead, regular traditional and administrative procedures are deployed to settle the disputes.

During visits to the cotton factory, it was evident that direct relationships have been established between pastoralists' associations and the cotton-seed cake factory. Although the prime interest of SODECOTON is to produce cotton and cooking oil for sale, cotton-seed cakes and hulls as by-products of the industry are readily bought by the herders. Wholesale of cotton-seed cakes and hulls to herders' associations are favoured by the factory over individual demand. This means that only pastoralists and retailers with adequate money can buy directly from SODECOTON. Cotton hulls that are not bought by herders are incinerated to produce energy for the factory.

Table 5.4 Data on cotton-seed cake production in Far North Cameroun

Year	Cotton area (ha)	Cotton-seed cake production (tonnes)
1985	17,846	22,642
1986	18,893	21,404
1987	18,948	18,220
1988	21,272	20,431
1989	18,955	17,873
1990	17,928	19,258
1991	17,534	18,363
1992	20,642	23,701
1993	19,665	26,462
1994	26,653	35,737
1995	31,466	42,000
1996	38,283	68,322
1997	34,400	65,000
1998	36,326	67,528
1999	38,657	79,623
2000	40,932	93,400
2001	39,455	89,356
2002	38,661	83,544
2003	40,474	92,135
2004	39,200	86,502
2005	42,877	102,854
2006	44,758	115,020
2007	45,012	117,655
2008	48,654	124,300
2009	46,240	119,670 ²²

Source: Compiled from SODECOTON data, Maroua. Reference has also been made to Njomaha (2004) and Moritz (2003).

I converted some figures from acres to hectares (1 ha being equivalent to 2.5 acres).

Rice by-products

SEMRY, as already indicated in Chapter 2, is the main floodplain large-scale paddy rice producer. It currently operates on over 6,000 hectares of land, in collaboration with about 10,000 farmers (2009 figures, Table 5.5).

Many farmers also currently work their own rice fields independently of SEMRY, as rice cultivation has been well developed in the region. The positive effect of SEMRY for the pastoralists is the production of rice bran, which is gradually being introduced as cattle feed supplement; and the major negative impact is the reduction of the transhumance space by over 1,500 ha of irrigated rice farms and the creation of a 40,000 ha (400 km²) water reservoir. Cattle also feed on the rice farm residues although with restrictions to avoid damaging irrigation canals. Fresh pastures close to irrigation canals are a no-go zone to transhumance herders.

Unlike the SODECOTON, SEMRY does not have any direct economic relation with pastoralists. Pastoralists, however, have a lot to gain as a result of the presence of extensive rice fields richly served with irrigation canals.

²² The surface area of cotton cultivation increased over the years as well as cotton-seed production. From a proportion of about 1:1 in 1987 to about 1:2.7 in 2009 of seed tonnes after oil extraction.

Table 5.5 Rice production in Far North Cameroon

Year	Rice area (ha)	Rice production (tonnes)
1987	5, 490	60, 427
1988	5, 426	53, 597
1989	4, 450	54, 072
1990	3, 885	52, 486
1992	4, 332	37, 387
1993	5, 682	54, 105
1994	5, 993	55, 605
1995	4, 301	38, 677
1997	4, 806	43, 234
1998	4, 935	47, 561
1999	5, 403	53, 540
2000	5, 632	55, 600
2001	4, 970	49, 336
2002	5, 385	56, 755
2004	6, 112	61, 651
2005	5, 644	58, 604
2006	5, 965	60, 578
2007	5, 871	57, 854
2008	6, 323	64, 120
2009	6,589	66, 080

Source: Compiled from SEMRY, Yagoua. Years during which data was not available were excluded in the table

Pastoralists therefore solicit herding within or at least close to the rice fields for a multiple of reasons, including the following:

- The regular presence of abundant water within the irrigation canals.
- The presence of ever-renewed fresh shoots of grass aligned along the irrigation canals.
- Access to post-harvest rice residues/straw.
- The availability of rice bran for use in cattle feed.

Access to these advantages does not go without hitches between the pastoralists and the authorities of the SEMRY rice project. During discussions with the delegate²³ of SEMRY in the Maga region, he strongly deplored the presence of cattle within the rice fields. He lamented the following negative and costly impacts:

- Destruction of irrigation canals through trampling, which leads to blockages and water diversion. Each year the canals are repaired and this necessitates much labour and/or machine work. It is also very costly to carry out yearly repairs arising from destruction by cattle.
- Degradation by cattle trampling on the separating dykes between irrigated fields, which hastens the erosion of the dykes. When the separating dykes are evened out by trampling and erosion, the rice fields lose their pattern and this makes irrigation more difficult.
- Hardening of the top soil by cattle trampling after harvest, which makes ploughing and planting during each farming season difficult. The farmers regularly complain of difficulties during planting because the soil is hard.

According to the SEMRY authorities, solutions to these problems are very difficult to arrive at. In the 1980s the authorities gunned down all intruding cattle and herders were scared off the rice fields. With the advent of freedom following democratization of

²³ Ibrahim Boukar, interview, May 2009.

Cameroon, the State is unable to use its unilateral powers for such a drastic solution because the herders have rights to defend their property by suing the State within the courts of law for compensation. Generally, herders are unwelcome in the rice fields, but they are always there. Some of the rice farmers are accomplices to this situation because they own cattle, while others encourage their relatives to graze in the rice fields for some compensation.

Access to infrastructure

Two important project interventions inspired by the old ecology approach—namely, the Mindif-Moulvoudaye pilot agro-pastoral project and the Sirlawe pasture improvement project initiated by the Swiss and Cameroon governments—encouraged herders to change their herding methods. The Mindif-Moulvoudaye pilot agro-pastoral project, launched in 1979 with the financial assistance of USAID, aimed at integrating agriculture and pastoralism, with the principal ambition of modernizing pastoralism. To attain its objectives, the project created three operational units in the form of clearly defined rotational grazing blocks of between 7,000 and 8,000 ha each, designed for pasture improvement and furnished with waterholes and crutches (for cattle spraying and vaccination). Within the grazing blocks, a series of operations were carried out to modernize pastoralism, and these involved communication infrastructure, introduction of high-quality and high-yield pastures, reintroduction of important extinct pastures, and application of anti-erosion measures to prevent soil fertility loss (Wanabé, 1986). Much training was also carried out in the domains of field supervisors. In addition, the activities of agro-pastoral groups were further intensified. The integration of agriculture and livestock was aimed at the intensification of agriculture through a crop–livestock rotational system. In collaboration with the sedentary herders, peanuts, beans, cotton, and fodder productions were rotated to improve soil fertility, and the farm residues were supplied to cattle. Farm residues were supplied to the cattle on a cut-and-carry basis, in which case oxen, donkeys, manual trucks, and even pickups were deployed in the transportation of fodder to the cattle. Fire tracing was done both by the digging of access roads and by clearing at the borders of pasture parcels to prevent fire from devastating neighbouring blocks. A 70-hectare *hardé*²⁴ surface was improved by ploughing and planting of high-quality pastures. Pasture reserve zones were also created and cattle were forbidden to use these pastures until the following year.

The defunct Mindif-Moulvoudaye agro-pastoral project thus provided basic infrastructure such as cattle vaccination crutches²⁵, waterholes, paved cattle corridors, and grazing blocks to the herders. According to information I gathered from the field, while the sedentary pastoralists were well served with these infrastructures, the nomadic pastoralists were excluded from using the grazing blocks. The nomadic pastoralists who spent about three months in the area saw such a system of pasture management (division of the grazing land into rotational blocks) as a limitation to their freedom of movement and a hindrance to pasture- and water-resource access. This situation embittered the relations between the nomads and the sedentary herders. The nomads violated the traced boundaries (in the form of terraced roads) of pasture parcels and preferred to use pastures that were preserved for a later period. The sedentary pastoralists accused the

²⁴ Bare surface, with vegetation cover removed and top soil eroded. Unfit for agricultural use without mechanical improvements.

²⁵ Vaccination crutches are confinements built to contain cattle during vaccination campaigns. As the cattle pass through fence-like confinement, they are systematically vaccinated.

nomads of having too many cattle and overstocking the region and maintained that nomadic cattle brought diseases from the floodplain. The nomads were thus excluded from the project and sent out of the area. This led to clashes between nomads and sedentary pastoralists.

Within the zone of the Mindif-Moulvoudaye project, the facilities that were designed for sedentary pastoralists, such as *mares* and vaccination crutches, are still used by them. However, nomadic pastoralists still graze their cattle within the villages of Kolara, Kobo, Mindif, Gaban, etc.²⁶ Demarcations between the grazing blocks, however, have disappeared, and cattle corridors and some grazing blocks have been occupied by farmlands and new settlements. Furthermore, the Mindif-Moulvoudaye agro-pastoral project, in addition to infrastructural development left behind, trained and sensitized people with regard to pastoral modernization advantages. The waterholes dug by the project have continued to be useful to the sedentary pastoralists to date, and the pastoralists have even taken up initiatives to add more. The current privatization of traditional open-access grazing lands to individuals seems to have connections with the ideology of the project, where pasture management was carried out in parcels, a phenomenon that is increasingly disadvantageous to the nomadic herders.

Access to daily subsistence needs

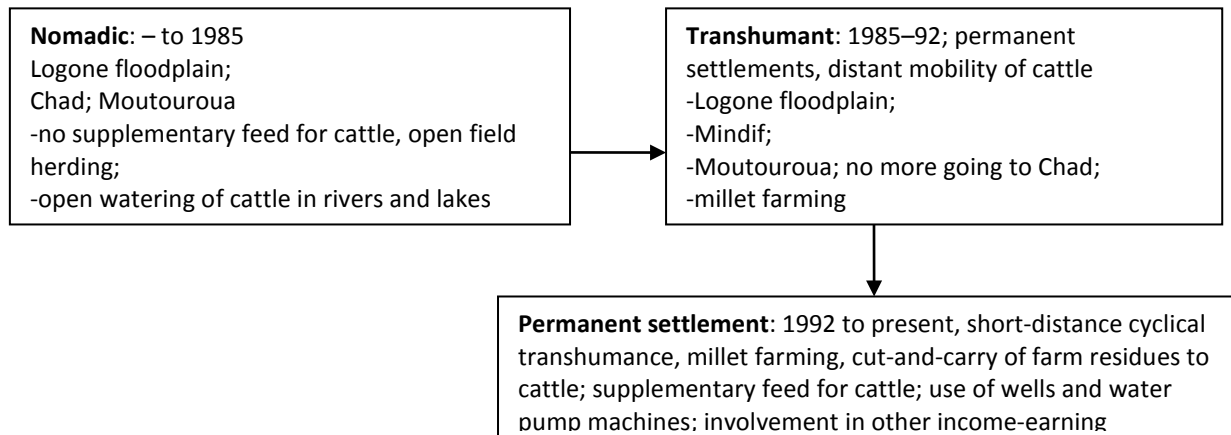
The nomadic pastoralists resort to neighbouring settler villages for the supply of their daily subsistence needs, as they themselves do not cultivate food crops. Access to food is an economic issue, and the nomads I talked with during this study take into consideration access to food in siting their camps: most camps could be found within an average 5 km range of settler villages and local markets. Millet grain, rice, cooking oil, salt, kerosene, sugar, tea, cigarettes, tobacco, and salt are regularly bought from these neighbouring villages and local markets. Whole grain, particularly sorghum and millet, are bought in large quantities (50 kg bags) and transported with the help of donkeys to nomadic camps and to grinding mills. Nomadic dependence on food supplies from neighbouring settler villages is remarkably high, and this accounts for over 50 per cent of interactions that occur between nomads and their settler neighbours. As negotiations take place, money changes hands. Milk and cattle-trade account for the remaining 50 per cent of these interactions.

The women worry much about accessibility to daily household subsistence needs, which are basically absent in nomadic camps. Proximity to daily subsistence needs and to the milk and cattle markets preoccupies nomadic households. The siting of nomadic camps therefore takes into consideration market centres for cattle, milk, and milk products. While the women look at milk marketing possibilities, the men look at the accessibility to the cattle market.

Currently, given the over-dependence on food supplies from neighbouring settler villages, and given the increasing prices of commodities and unfavourable terms of trade, the poorer pastoralists have begun to cultivate food crops themselves. Crop cultivation is an inducing factor towards sedentarization, and most of the present, modern pastoralists fell into this cycle of change from pure nomadic through transhumant to sedentary herders, as illustrated by the case of Alhadji Boderi of Makabai (Figure 5.4).

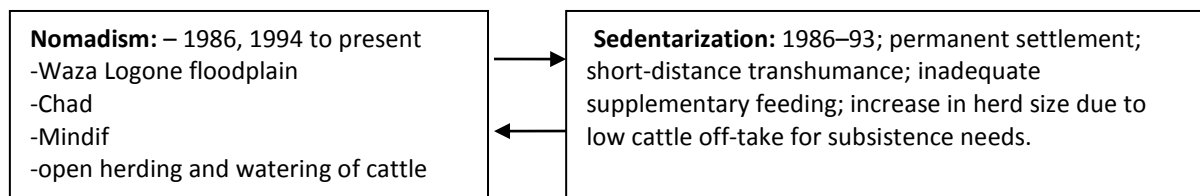
²⁶ Field work identification, 2006–09.

Figure 5.4 Alhadji Boderi, successful case of a settled agro-pastoralist



In another case, Siddi Malkari changed from pure nomadism to fully sedentary pastoralism without significant modernization of herding practices (Figure 5.5). He became sedentary in the neighbourhood of Bogo but later reverted to a partial nomadic lifestyle. His first wife decided to remain sedentary whenever he moves with the second to the floodplain. Two other pastoralists—namely, Alhadji Hamajam Haman and Kao—became sedentary for a short period and then reverted to nomadism—and are still nomadic today. The conclusion I arrived at is that sedentarization for the sake of crop cultivation may thus be short-lived, if such sedentarization results in increased cattle numbers and is not accompanied by significant investments in modernizing pastoralism.

Figure 5.5 Siddi Malkari, owner of collared Zebu B, failed to become a settled agro-pastoralist



This implies that inadequate subsistence needs is a factor that influences the tendency towards sedentarization, which in turn may eventually lead to pastoral modernization, because sedentarization favours the development of modern pastoral techniques. As was evident in the field, a history of family separations is characteristic of a return to nomadic lifestyle. Once the women have got the taste of a sedentary lifestyle, they refuse to go back to nomadism. At times, negotiations are made to continue the family life in such a way that the man takes up another nomadic wife but pays visits to the sedentary wife. The sedentary wife may also visit the husband when he is found in locations of proximity, especially in the wet season.

The failure to embark on pastoral modernization after sedentarization may be strongly linked to the reasons for sedentarization itself. Sedentarization for crop farming to meet subsistence needs in most cases leads to an increase in the size of the herd, which eventually triggers the family into going back into nomadism. If no significant increase in the size of the herd occurs over a long period of time, sedentarization becomes permanent and pastoral modernization ensues.

Spatio-economic challenges

Competition to maintain cattle wealth

During discussions with the herders, I learned that the nomadic herders engage in spatio-economic competition against each other for access to pastoral resources—particularly pastures and in some cases water—to maintain cattle wealth, which is their principal source of economic and social power. Within this pastoral community there is a great disparity in the ownership of cattle wealth displayed during migrations. Small cattle owners move in conjunction with wealthy cattle owners. In contrast, wealthy cattle owners avoid and move far away from other wealthy cattle owners. While wealthy cattle owners compete to ensure the survival of their cattle by staying away from each other in order to reserve maximum space for their cattle, smaller herders stay near them for protection and economic assistance. Within traditional nomadic households, wealth is synonymous with leadership, as poorer nomads of the same lineage may benefit from wealthier herders through the system of *naanganai*.²⁷ Most of the nomadic leaders have a history of substantial cattle wealth partly squandered in search of leadership title. The display of wealth is particularly demonstrated during migrations, in which case wealthy cattle owners migrate almost simultaneously to proudly demonstrate, in a line of drifting herds, their cattle potential. Seeing the movements of over 2,000 cattle in one just wave irritates the poorer herders, who may decide to become sedentary and eventually modernize their cattle-herding practices. In November 2005 one nomadic herder²⁸ decided to become sedentary in the neighbourhood of Guirvidig because of the arrogance of his wealthier elder brother.

The competition over space was observed by the use of GPS hand-held devices given to the herders. The average daily grazing range of nomadic herds was determined during this study to be about 6 km from the camp. The GPS Zebu collar data results also showed similar results. The herders graze within the same locations, as can be seen on Map 5.2. Zebu B and Zebu A grazed in the same location, west of Guirvidig, during the month of June and partly in July. Given that each herder seeks the best possible pastures for his herd, the herders compete against each other to achieve this goal. As can be seen on the map, the herds of Zebu A and B grazed away from each other, each herder trying to carve out and use in the best possible manner his temporary territory, in the form of shifting locations.

Cattle theft, child kidnapping, and highway robbery

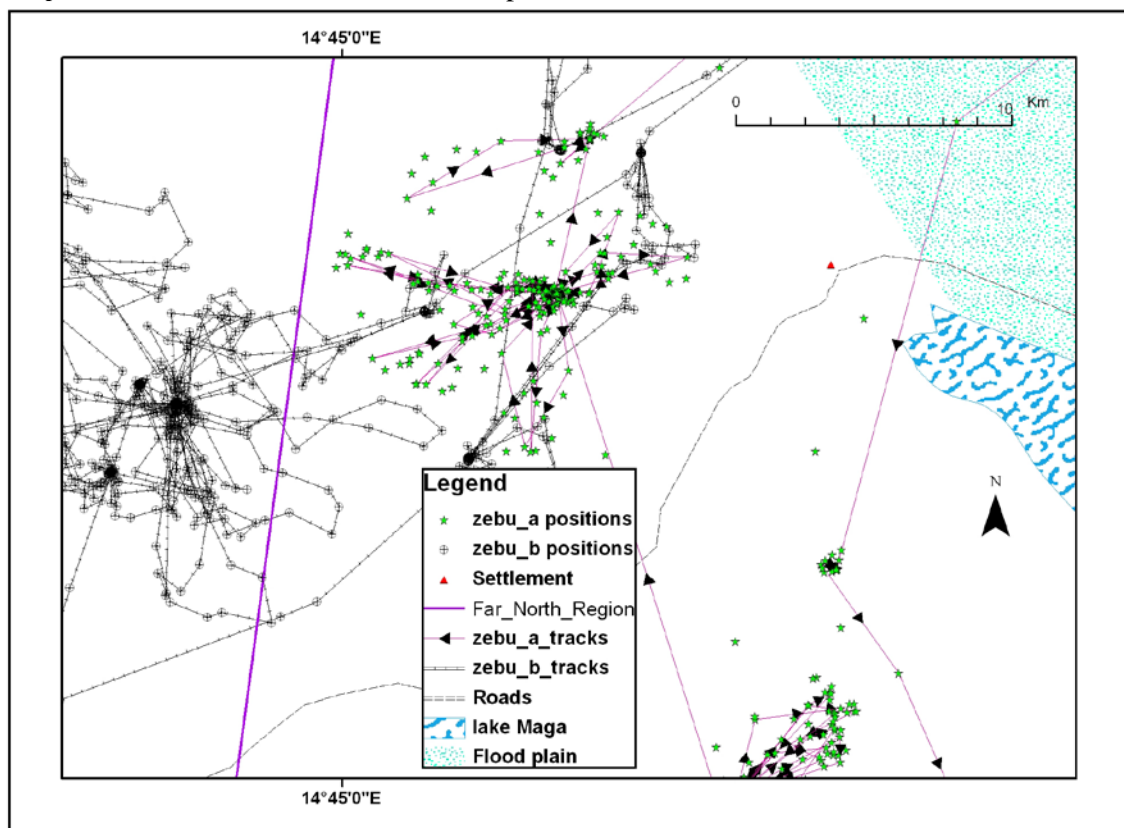
Next to the impact of droughts and diseases in diminishing the economic viability and impoverishing the traditional pastoralists is the incidence of cattle theft, particularly in the floodplain. The vulnerability of the nomadic pastoralists to attacks by cattle thieves is ever-present in the floodplain. For the nomads to survive this persistent threat, they have to group together to dissuade the thieves. Congregated settlements of between 4 and 6 households are most common in the Logone floodplain, where the incidence of cattle theft and ethnic conflicts is highest in the dry season. The traditional nomadic

²⁷ This is a cattle exchange system that strengthens the economic potential of poorer herders. Wealthier herders lend cattle to poorer herders, usually of same lineage. The cattle are returned after many years, when they must have multiplied. It also creates a situation of dependency and greater allegiance of the poorer herders toward the richer ones.

²⁸ Alhadji Dia, the self-proclaimed enlightened 'white man' of the Mbororo nomads who collaborated closely with previous white researchers. He, exceptionally for a nomad, accepts the name Mbororo.

herders have little options other than fighting with the thieves in order to stay close to the River Logone and Lake Maga for pastures and water.

Map 5.2 Herd movements around camps



It was observed during this study that cattle theft has become an industry in the floodplain and is on the increase. I discovered that the major causes of cattle theft are linked to the tradition of the floodplain Mousgoums, which require as many as nine head of cattle for a Mousgoum man to get married and start a family, cattle which they rarely have without stealing and because of the instability in neighbouring Chad. Drent (2005) estimated 106 cattle stolen in the floodplain in 2003. When compared with the estimates I arrived at (Table 5.6), we see that the problem of cattle theft is intensifying, as numbers and battles are increasing. Cattle theft is therefore high amongst the uncontrollable problems these herders encounter. Armed gangs from Chad cross through the border at night to snatch cattle from the herders. When the thieves escape with the animals into neighbouring Chad, they cannot be pursued by Cameroonian authorities. Cattle theft is very high in the Mazera area because it is just at the border. It seems that cattle theft, insecurity, and related conflicts are the primary social factors that push nomadic pastoralists to sedentarize and eventually modernize their pastoral activities. Cattle theft is also a source of the multiple night and day battles that nomadic pastoralists have to face, resulting in cattle loss and human injuries from knives and bows and arrows.

The conflicts related to cattle theft, damage caused by cattle on fishing canals and farmlands, conflicts related to ethnic intolerance result in injuries that require the interventions of trained medical personnel. The Health centres of Mazera, Pétté, Mindif, and Maga are frequently visited by nomads in distress, in order to get their wounds

treated. The most frequent injuries so far recorded in this study are related to arrows²⁹ and knives used in conflict situations.

Table 5.6 Cattle theft in the floodplain

Year	Location	N° of animals stolen	Comments
2006	Goroma	11	Night attacks, bows and arrows, guns, etc.
	Sifna	03	Less theft due to collaboration of neighbouring settlers
	Mazera	84; 29 nomadic	Invasion from Chad, cattle-market area
	Kazire	01	Less theft due to high collaboration with neighbouring settlers
	Zina	18	Associated to Chadian Mousgoums
	Maga	05	Less theft, high concentration of nomads, high security
Sub-total		122	
2007	Goroma	16	Night attacks, bows and arrows, guns, etc.
	Sifna	09	Collaboration of settlers
	Mazera	76; 31 being nomadic	Cattle-market area, intense night attacks
	Kazire	04	Close collaboration with neighbouring farming communities
	Zina	42	Associated to Chadian Mousgoums
	Maga	07	Less theft, high concentration of nomads, high security
Sub-total		154	
2008	Goroma	23	Night attacks, bows and arrows, guns, etc.
	Sifna	15	Collaboration of neighbouring farming communities
	Mazera	180; 47 being nomadic	Cattle-market area, intense night attacks
	Kazire	03	Close collaboration with neighbouring farming communities
	Zina	33	Associated to Chadian Mousgoums
	Maga	12	Less theft, high concentration of nomads, high security
Sub-total		266	
2009	Goroma	17	Night attacks, bows and arrows, guns, etc.
	Sifna	21	Collaboration of neighbouring farming communities
	Mazera	36; 32 being nomadic	Cattle market area, intense night attacks
	Kazire	05	Close collaboration with neighbouring farming communities
	Zina	24	Associated to Chadian Mousgoums
	Maga	18	Less theft, high concentration of nomads, high security
Sub-total		153	
Total		695³⁰	

Source: Interviews with nomadic herders Djaoros and Lawanes, who settled some of the cases of theft

²⁹ In the dry season of 2007-2008 (Nov-June) 11 cases of injuries were recorded, the most serious one was the Arrow that pierced the lungs of Moussa, the only son of Alkali Babbaye, while on *lucci* in Nov. 2007 in the Mazera Area. When breathing, blood and air oozed out. The hospital of Mazera could not treat him. However Maga rescued him. In March 2008, Alhadji Hassana was pierced with an arrow in the left eye during night grazing. When thieves arrived the cattle escaped and the thieves got him seriously beaten and injured.

³⁰ The cash value of cattle stolen from 2006 to 2009 is estimated at 125, 100, 000 F CFA, with an average cost of a marketable animal put at 180, 000 F CFA. This is actually a great blow to the rural economy.

During discussions with the nomads, camping near these health centres was thus often mentioned as an wise option. Owing to the intensity of these conflicts, some nomads have resorted to the use of magical powers³¹ to reduce gun and metal-related injuries. While some claim success, many others fail and are regularly victims of severe injuries.

Meanwhile, the situation of child kidnapping has over the past years aggravated the living conditions of particularly the traditional pastoralists in the rural areas. Since the traditional pastoralists are few and spread out in the bush in secluded camps with many cattle, armed bandits target the camps and kidnap children, and at times women, for ransom. The herders are in most cases obliged to sell their cattle to pay the hostage-takers for the release of their family members. As the hostage-takers usually threaten to kill all their captives if the matter is reported to the police, ransom payment is conducted with the utmost secrecy. In October 2008 in the Mindif region, just before the departure of the nomads to the floodplain, six children were kidnapped and taken to the nearby bush for ransom. In spite of the warnings of the kidnappers not to report the matter to the police, information on the kidnapping filtered into the ranks of Gendarmerie officers of Kaéle, who organized a man-hunt to retrieve the children. In their attempt to locate the children in the rocky hills of Mindif, a military captain was taken unaware by the bandits; he was shot in the head and died on the spot. The mission was aborted and the kidnappers escaped, abandoning the children.

Another major incident of child kidnapping occurred during the month of September 2009 in Ammaheri, a village located north of Pétté and south of the Waza National Park. This occurred at the peak rainy-season period, when the nomads were enjoying rest away from the floodplain and when Ramadan (fasting period for Muslims) was being observed. A team of armed kidnappers infiltrated into the village and surrounded the mosque where the men and children were gathered for their evening prayers just few minutes before the break of the fast. At the end of the prayers and as they were moving out of the mosque, they were surrendered by the armed kidnappers. Seven young men and children were selected from the wealthy nomadic herders and taken into the nearby bush for ransom. Since this incident occurred in a village not far away from Pétté, where the Rapid Intervention Brigade (BIR) is stationed, news reached them and they organized a rescue operation. During the rescue operation, unfortunately, one BIR officer was killed and another seriously wounded. Three kidnappers were killed, others were arrested, and the kidnapped were freed.

During discussions with the village head of Ammaheri, Alhadji Booderi, he revealed to me that some of the nomadic herders were confused and wanted to start selling their animals for the payment of the sum requested (3 million F CFA) by the kidnappers. He indicated that the nomadic herders always go in for hasty solutions, as illustrated in Box 5.2.

³¹ Locally known as *gri-gri*, some herders tie around their elbow or wrist items that they think can protect them from enemies and make them invisible when exposed to danger. Others use invocations to call for protection.

Box 5.2 Alhadji Booderi, village head of Ammaheri

The nomadic herders are victims of circumstances that they seem not to understand. The kidnappers go after them because they have many cattle that can be easily converted into cash. If the bandits stole many animals, they would have difficulties disposing of the animals without being caught. They prefer to take people hostage, for the cattle to be sold, and the cash given to them through their network. Many of the kidnap cases go unnoticed because they pay the money without reporting the matter to the local authorities. They don't want their children to be killed. We advise them to always report cases of kidnapping to the police or to the nearby government authorities, but unfortunately, we only learn that a kidnap incident has occurred after the ransom has already been paid. When the nomads return to our villages in the wet season, we are always scared of this type of incident.

I think that although the nomads are the most victimized and lose lots of cattle to these types of bandits, we are also not safe. All of us including the nomads usually fall victim to the coupeurs de route (highway bandits). During market days they block the road to collect all the money we have worked for. You can't resist unless you are not afraid to die. The coupeurs de route attack almost every cattle market-day, either along the road or in the homes of people where they are sure of having cash. I am sure they live with us in our villages; they have up-to-date information on the transactions of people in the villages. If they track you on the way it is because they are sure that you have money. How do they know that somebody is moving with money if they don't have informants? These people are terrorising us and making us poor. In the car, on foot, or in your house you are not safe. I am sorry for our nomadic brothers who live in the bush because they only work for the bandits.

Economic relations in livestock ownership and transfers

The Fulbe pastoralists of Far North Cameroon, just like their counterparts in the Sahel, also perpetuate inherited traditional and religious livestock transfer practices of economic value. The pastoral households studied during this research hold manifold and dissimilar rights to animals and animal products, with individuals and households organized in varying productive capacities across the social strata through time. The livestock are shared out within the framework of the herding kinship through economic exchange networks that ensure a livelihood for all. Other studies within this domain have confirmed that livestock ownership variations are determined by opportunities and constraints. These opportunities and constraints cause individuals to oscillate between different livelihood practices by varying ownership and complementing livestock-herding with various combinations of wild-product gathering and hunting (Sullivan & Homewood, 2003), cultivation (Van Dijk, 1995; Homewood et al., 2004), trade (De Bruijn, 1997; Zaal & Dietz, 1999), and remittances from wage labour (Carney, 1999). In the Far North of Cameroon, the traditional livestock transfer practices, however, are being eroded by increasing economic stress, market integration, sedentarization, and modernization. The various livestock ownership rights in a Fulbe family herd illustrate how ownership and use rights are transferred and how property relations are established over time to ensure livelihoods. This is carried out through rights over the herd and the transfers of livestock, around which pivot the creation of inter- and intra-household economic and social relations within the community. Inter- and intra-household livestock ownership and transfers prevail through shifting of the rights of disposal and use amongst and between pastoral households. In the course of this analysis, these changes will be briefly discussed by comparing different types of livestock transfers as forms of economic relief packages, packages that enhance livelihood and foster relations within and amongst the modern and the traditional pastoral setups.

During discussions with herders it was revealed to me that herd ownership varies considerably, in individual herds, family herds, and joint herds. An individual herd is

owned by just the household head. Individual herds rarely exist, except those owned by influential businessmen and politicians. Only unconfirmed information of the presence of individual herds owned by influential politicians in Yaoundé (who advise the herdsmen not to declare ownership to people) was available. Family herds were the most common, as many members within a family can claim one form of ownership over a herd animal. Joint herds were identified by the herders as a form of joint venture of related or unrelated individuals. The few cases of joint herds that were observed in the field were comprised of livestock from many individuals, entrusted to the care of one person who had the job of taking care of the cattle. Such an individual may own a few cattle himself or have a base in which to keep cattle. Other caretakers are merely middlemen (*khalifa*), who employ a herdsman to take care of the cattle. The herder(s) of a joint herd rely on the *khalifa* for any information about the health and growth of their livestock. The herders also make a distinction of ownership by the use of terms such as *saareji*, to refer to a family herd owned by the household in which the livestock reside, and *yaasiji*, to refer to the cattle owned by people who are not members of the household. According to the pastoral Fulbe, a household or family herd is comprised of livestock that belong to a single household and immediate relations, while a joint herd includes livestock from friends. To an outsider, a household head may appear to be a wealthy herd owner, but in reality he may own only a few animals in the herd or may simply be a *khalifa* (caretaker). Furthermore, all herds in the study area had a territory of anchor or a resting place, known as the *waalde*, in which activities such as milk extraction, de-ticking, vaccination, herd counting, etc. are carried out. A *waalde* also refers to the kraal, which is the resting place for livestock located within or close to the camp of the herdsman/herd owner. A large herd (*tokkere*) is usually split into two or more groups, depending on the production objectives assigned to each herd. The family herd is referred to as *tokkere sarre* or household herd. A milk herd (*soureji/saareji*) comprises mainly milk cows and calves and remains close to the homesteads (home herd) for easy and regular access. The distant herds (*horeji*, or satellite herd) comprise mostly steers and non-lactating animals, which may be designed either for beef production or for further reproduction.

In addition, property relations in family herds have become a function of, and increasingly determined by, the cost of maintaining cattle and assuring production and reproduction. The household head in modern pastoral households ensures continuity in herd management by sharing cost according to ownership, because of the high production costs involved. In the traditional pastoral households where the production cost is lower, household heads bear all the cost. Traditional pastoral household heads own the bulk of the cattle (70 per cent) in the family herds, followed by wives (15 per cent), children (12 per cent), and relatives (3 per cent), and these herds rarely contain animals owned by friends, except in cases of entrustments. With the modern sedentary agro-pastoralists and aside from shared ownership,³² livestock ownership is much more concentrated in the hands of the household head, who may well own above 90 per cent of the herd, with only less than 10 per cent owned by outsiders, due to the production costs (cotton-seed cakes, millet stalks, veterinary medicine, etc.) involved in breeding cattle. Excluding entrustments, household heads are becoming increasingly hesitant to take over the responsibility for cattle belonging to close relations and friends, because of

³² Shared ownership here means a herd that is owned by two or more household heads. Management cost is shared proportionally.

management costs and the absence of the privilege of discarding the animal in times of need. In the modern pastoral setup, household heads have ceased livestock transfers to their children, as this jeopardises their ability to sell or slaughter the animals. The greater responsibilities towards children (education) in modern pastoral setups and the existence of other avenues for livelihood diversification have reduced the possibilities of livestock ownership transfers. In contrast, in the traditional pastoral set-up, in which livelihood is ensured by cattle ownership, transfers constitute the dominant but declining feature. However, the process of pastoral modernization has resulted in more individualization and exclusive property rights over livestock, leading to a decrease in livestock transfers within the household, a situation primarily attributed to the increase in production costs.

Moritz (2003) and Schlee and Khazanov (2003) ascertained that rights over livestock can be held by individuals, families, households, and lineages, and all these different corporate units can have simultaneous and overlapping rights over the animals. The different systems of livestock ownership and transfers help to construct varied social and economic relationships amongst and within the herding communities. Within the Fulbe pastoral set-up, different forms of cattle ownership confer different rights on the owners. The rights of different people over the same animal may vary from a household wife's right to extract milk (*bireteenge*), to a son's right of inheritance (*sukkaage*), to the household head's right of sale (*soreteege*). If the animal has been entrusted (*khalifaye*), the middleman or the herdsman may have a right to its milk but not a right of the animal's sale. There exist therefore, a variety of livestock transfers within (inter-household transfers) and between (intra-household transfers) pastoral Fulbe households in the Far North Region of Cameroon. Inter-household livestock transfers include the inheritance of cattle (*donaage*), the gift of a heifer to a child (*sukkaage*), especially after circumcision for a male child, the gift of a heifer after the completion of Qur'anic studies (*sakkaage*), payment of religious taxes on cattle property (*jakkaaji*), temporary loan of a milk cow (*diilaaye*), gifts (*hokkaange*), and loans (*nanngaage*). Intra-household transfers include the payment of a dowry (*sadaaki*) by the groom to the bride, entrustment (*goofalye*), guardianship (*halfinaage*), purchase of an animal (*soodaage*), gifts (*hokkaange*), and loans (*nanngaage*). Amongst these livestock transfer systems, we can find permanent transfer of ownership, as in the case of dowry, gift to a child or other persons, inheritance, and purchase; temporary use transfer, as in the case of the loan of a bull or loan of a milk cow; and temporary or permanent control transfers, as in the case of guardianship and entrustment.

The sadaaki and jakkaaji

Sadaaki (dowry) and the *jakkaaji* (religious gift of cattle to the poor, one animal of every 30) are both religion-imposed transfers (*Shar'ia*) from one household to another. *Jakkaaji* are not supposed to create strong social and economic relations, because they are a religious prescription and the receiver has no obligation towards the giver. He receives the animals because he is poor. However, some herders, in contravention of the Islamic prescription and perhaps through ignorance, give the *jakkaaji* to compensate the poor for work done.

The *sadaaki* is also an Islamic practice recommended by the *Shar'ia*, in which a marriage is officially authorized when the woman is compensated. A heifer *sadaaki* is recommended as a gift to a bride by the bridegroom. Previously based on trust, the *sadaaki* did not involve a material transfer of the livestock but merely a transformation

of ownership in the husband's family herd, since the bride is expected to join the husband immediately after the marriage is contracted. Nowadays, trust has waned because the husband often breaches the rights of the wife by selling the animal without her consent. This practice is thus disappearing fast particularly within the modern pastoral household set-up, owing to the money economy that has infiltrated the system during the last few decades.

The gift of a *sadaaki* to the woman as an economic security is very important because it is on the base of the *sadaaki* that she starts constituting her own herd, which may guarantee her livelihood when she is old. During the course of her marriage and since the livestock of the women is not expected to be used for subsistence, discarding the *sadaaki* would require the permission of the husband. In many cases, when the marriage has been arranged by the parents without the consent of the daughter, she runs away from the new husband, and if she ends up rejecting the marriage arrangements, the *sadaaki* animal is returned to the husband's family. Currently, households decline *sadaaki* in the form of an animal because the woman is rarely given the right of discarding the animal, and I was informed that most of the gifts are fictitious. Fictitious *sadaaki* complicates marriages in Islamic tradition because such a marriage is illegitimate. Fictitious *sadaaki* has been reported in this region and is generally referred to as *koobaaye* or the antelope that has run into the bush (Moritz, 2003) never to be seen by the bride. To solve this problem, the *sadaaki* has been monetized. With increasing incorporation of herders into the monetarized economy and reduced reliance on informal exchange mechanisms, livestock are losing their multifarious roles. The traditional strategies of herd diversification, stock alliances, and stock patronages have been partly replaced by new monetary practice. In the Far North of Cameroon, herders have accepted the donation of "cattle without legs", an amount of money equivalent to a cow, as a bride price or bride wealth. On the one hand, these innovative institutional arrangements might enable poorer herders, who receive monetary payments for their herding activities, to get married; on the other hand, however, the bride loses her insurance and the ability of the household to build up a viable herd size is reduced.

In the modern pastoral household set-up, the dowry has been monetized owing to mistrust and the increasing economic value of cattle. The bridegroom prefers to give cash instead of cattle to the bride, to avoid violating Islamic prescriptions and to reduce the economic burden of the bride price. This helps to avoid future confusion that may lead to divorce. When the dowry is given in the form of money, household heads are relieved of the burden of managing livestock that do not belong to them. This monetarization of the dowry has engendered the gradual disappearance of livestock transfers and an increasing concentration of livestock ownership in the hands of the household head, owing to pastoral modernization and livestock individualization. The monetarization of the *sadaaki* is considered by the women as disadvantageous because this narrows their sources of cattle wealth and makes them economically vulnerable especially in old age. However, from an Islamic point of view, the monetization of the dowry has helped to avert the desecration of women's rights, since the women are now given the money in cash and can choose how to use it. However, the women complained to me of the fact that cash does not secure their livelihood in the long run, because it is either taken away by the parents or wasted, instead of being invested for their future in marriage. The women are saved, nevertheless, from being given a fictitious *sadaaki*.

Gifts to children or the sukkaage

Inter-household transfers are most common among traditional pastoral households, although intra-household livestock gifts are also common amongst households of the same lineage. As regards inter-household transfers, household heads offer gifts to close relations, couples may exchange gifts, and children are given livestock by their parents (*sukkaage*). The *sukkaage* (pl. *sukkaadi*) is the gift of a cow—a heifer is offered in place of a steer because parents would like to see how the offspring will prosper, in order to constitute a herd for their child at the age of maturity—to a child by the parents or close relations. This form of livestock transfer aims to ensure the economic viability of the next generation of herders by providing them cattle at a young age, and before they get to maturity a herd must have been constituted for them. *Sukkaadi* are given to both male and female children by both the mother and the father, although the male children receive more than the female children at birth at an average ratio of 2:1, as is the case with inheritance (prescribed by the Islamic *Sha'ria*). The *sukkaadi* are given to the male child particularly after circumcision at the age of seven, to attest to the child's first transitional stage towards manhood.

The *sukkaadi* constitute the base on which the children of a pastoral household build their personal wealth before and after the age of marriage (18 years or so). The child or any other person can also benefit from a heifer given for religious reasons (*sakkaage*), particularly at the completion of Qur'anic studies. The most important reason why parents give a *sukkaage* to their child is to enable them determine the child's future wealth potential or *jawdi*³³ (predetermined chance of becoming rich in cattle wealth). If the heifer and its offspring prosper and if the child is able to constitute a herd, it indicates that the child has good prospects of gaining more animals for the household, which means that the child has the possibility of becoming rich. The household head is likely to profit from the *jawdi* of his child in the long run. If the child is blessed with *jawdi*, many animals are transferred to his name, in the belief that they will reproduce faster than when kept in the custody of the household head. Formerly, the household head reserved the right to dispose of the livestock in the family herd under his control as well as of the *sukkaadi* of his children. The household head could sell them to provide for the family without necessarily consulting the owner. In principle, the household head reserved this right of disposal until his death, although in practice he gradually lost this right as he relinquished the daily management to his eldest male child. Currently, household heads regularly grumble that they have lost the right of disposing of *sukkaadi*, to which children previously had only ostensible ownership. The children now claim greater rights over their livestock and can object to the disposal of their *sukkaage* by their parents. However, this *sukkaage* practice is gradually dying out owing to economic stress and pastoral modernization.

The numbers of households which reported to me that they received assistance from their communities and from relatives were relatively moderate: 7 for traditional pastoralists and 3 for modern pastoralists (results compiled from socio-economic surveys involving 69 traditional pastoral households and 85 modern pastoral households). Household heads were reluctant to admit the reception of assistance, but those who assisted them freely admitted having done so. In general, more traditional pastoralists than modern pastoralists reported that they received assistance from their communities and from relatives. During stress periods, modern pastoralists reported the

³³ Moritz (2003) referred to *jawdi* as *risku*.

lowest proportions of households that received assistance, probably because they have greater possibilities for diversification. More households receive assistance from relatives than from their communities. There is a stronger continuum of assistance from relatives rather than the community, and most assistance was received during stress periods resulting from cattle theft, diseases, and droughts.

Furthermore, pastoral households did not report receiving any material assistance from NGOs or the government. The only material assistance, given to an insignificant number of pastoralists since 2008, relates to the World Food Programme (WFP), which exchanges a bag of maize/millet for school attendance of children. Parents that receive this gift promise to follow up the attendance of their children in schools. This approach has helped to raise the literacy rate of the region. The Heifer Project International (HPI), which began its activities in the region in 2010, also promotes the rearing of small ruminants (sheep and goats) amongst organized groups in which offspring are passed over (pass-over gifts) from one group to another. Other interventions of NGOs are in the form of training workshops and sensitization against HIV/AIDS.

Loaned livestock

Livestock gifts are very common among the traditional Fulbe pastoralists of Far North Cameroon and are carried out through inter-household and intra-household exchanges. Livestock in this case are transferred from one individual or household to another or exchanged within a household. The exchange of gifts (*dokaadi*), unlike other cattle transfers such as the *diilaaye* or *nanngaage* (singular: involving one animal), are permanent and devoid of any preconditions appended to such gifts. Discussions I had with herders proved that loaned livestock as a feature of traditional pastoralism in the Far North of Cameroon exist in two forms: the *nanngaage* and the *diilaaye*. The *nanngadi* (plural: many animals) can be considered as a system of economic relief package, in which livestock loans to poorer relatives and friends are made to enable them reconstitute a herd and have milk for the young and old. Several years after the animals have been loaned out, some of the offspring—at least equal in number to the animals initially loaned—are returned to the original owner or his family. The *nannganai* (system of livestock transfer) as a common practice amongst the traditional pastoral Fulbe herders has almost died out except for some few Wodaabe of the Alidjam, Moriibe, and Adanko'en. Abundant literature on the Wodaabe confirms the existence of the *nannganai* system (Bonfiglioli, 1988; Stenning, 1959), and this practice has generally been considered as a Fulbe tradition and not only the tradition of one specific Fulbe lineage (Bovin, 1990; Van Dijk, 1994; De Bruin & Van Dijk, 1995). The *nannganai* system of the Wodaabe has been widespread within traditional pastoral households, although as a custom it may vary from lineage to lineage in terms of the number of years required and the number of offspring or cattle to be returned to the owner. The fundamental goal underlying the Wodaabe *nannganai* system has been described by anthropologists: a heifer is loaned and returned only to the owner after it has calved (at least more than once), to enable the recipient reconstitute a herd. As confirmed by Dupire (1962), the loans help destitute herders reconstitute a herd after a major catastrophe.

The analyses of the socio-economic data collected during this study show that loaning, sharing, and gift arrangements form part of an economic exchange tradition adhered to by some traditional pastoral households. These economic arrangements, which also include dowries and traditional ceremonial gifts, are an integral part of the

communal way of life for traditional pastoralists. Greater solidarity and sharing of economic assets, as indicated by the herders, increase during periods of difficulty, especially between traditional pastoralist households. For the traditional pastoralists, the most extensively acknowledged motivation connected with the loaning of livestock to relatives was to provide milk for family consumption. Livestock loaning as a practice is restricted to very close relatives who have lost their cattle, owing to disease, drought, or theft, and this system is gradually dying out in many areas as a result of the individualization of cattle ownership and management.

The system of *nannganai* is blessed with many economic and social advantages, including helping destitute households reconstitute a herd of their own, reducing the costs of the keeping of so many cattle by one household, and enhancing economic and social ties between households. Several reasons justify the perpetuation of *nanngaage* in Far North Cameroon. First and foremost, the *nanngaage* enables the destitute herders to obtain basic necessities, including something to eat. Secondly, pastoralists give *nanngaage* to ascertain and intensify good relations and togetherness (*bandiku/gondal*), as well as to enhance the feeling of affection for one another (*yidde*). Earlier research confirmed that the transfers of property rights over livestock are important constituents of social relations, just as kinship and residence are, and may form the basis of networks that contribute to the social security of the individuals and families involved (Bovin, 1990; Moritz 2003). Thirdly, the extra motivation to give the *nanngaage* to kith and kin who are devoid of livestock of their own is to allow them play a part in the daily economic and social activities within the community in which they live. Events related to livestock rearing are important issues of regular discussions (for instance, about cattle theft, market prices, and transhumance), which necessitate multiple and frequent activities within households. Herders with no livestock are despised and may become incapable of wholly contributing to their community development. Fourthly and finally, loans are also given by the lender to redress functional concerns (for instance, to diversify species and during the weaning of calves). Over recent decades, however, economic stress, sedentarization, and pastoral modernization have downplayed the basis of the traditional pastoral set-up, sending the system of *nannganai* into a steady decline. Economic stress and sedentarization may have pushed the pastoralists towards greater contacts with the outside world, eventually leading to a collapse of family bonds and a weakening of the traditional systems of cattle transfers.

In the Far North of Cameroon, the *nannganai* tradition of Fulbe modern pastoralists has in practice died out or changed in the way it is conducted. If an animal is at all transferred to a third party, the recipient is accorded only usufruct rights, and no offspring are allowed to remain behind when the loan is returned. In this way, the *nanngaage* serves just for subsistence needs and may not provide the basis for reconstituting a herd on the part of the recipient. Depending on the motives for the *nanngaage*, it may be offered for an undetermined length of time, which may be as short as a month or as long as two years. A bull given for herd diversification may last for fewer years compared with a heifer desired for its offspring. There are circumstances in which the *nanngaage* may be transferred both for usufruct and disposal rights to benefit destitute households. Currently, no *nanngaage* was found within the modern pastoral set-up. The majority of the modern agro-pastoralists did not even know what a *nanngaage* is. Only a few knew the tradition—absentee herd owners having close ties with nomadic pastoralists and herders who have been or are still practising transhumance—although they did not practise the *nannganai* themselves. The main

reason why there are no *nanngaage* within the modern pastoral set-up is that the costs of keeping animals are very high. In general, increased production costs have made livestock transfers more burdensome for the recipient of the animal within the modern pastoral households.

Furthermore, the tradition that has perpetuated inter-household gifts is principally encouraged by attachment and affection for one another (*yidde*), while intra-household gifts are generally driven by economic need due to destitution (*soy'de*). Intra-household gifts are therefore meant to mainly help destitute relatives and, in rare cases, friends. In this case, apart from the *nanngaage* livestock loaning system, we also have the *diilaaye* within the Fulbe herders of Far North Cameroon, whereby a milk cow is provisionally loaned to assist destitute herders to obtain milk and possibly cash from milk and milk products, in order to buy food. The *nanngaage* and the *diilaaye* may fulfil the same purpose although they were originally designed for different purposes. The fundamental distinction between a *nanngaage* and a *diilaaye* is that the *nanngaage* is loaned out for an undefined duration, whereas the *diilaaye* is merely for the given time of lactation. The *diilaaye* is commonly allocated to households of many young children or the elderly, who require the regular provision of milk for growth and health maintenance. No loaned livestock as *diilaaye* was found within the modern pastoral households, probably because of high maintenance costs due to supplementary feeding. Most of the modern pastoral households were interested in selling their milk to milk-processing units for cash; at times, others give milk to the poor as *sadaaka/sakkaage* (Islamic alms). Intra-household transfers are merited with advantages in that the receiving household has both use and disposal rights over the livestock. The recipient household can use the livestock to reconstitute a herd or sell to meet household needs. Livestock gifts are most common within traditional pastoral households rather than modern sedentary pastoral households.

Livestock purchase

Livestock sale and purchase is a regular economic activity of the pastoralists in this region, and most of their transactions are carried out during the weekly cattle markets of Maroua, Bogo, Moulvoudaye, and Mazera. Pastoral modernization has increased the tendency to livestock purchase wherein new pastoralists have emerged, involving people whose origins do not have anything to do with pastoralism (Chapter 7). Pastoral modernization has enhanced the individualization of livestock possession because purchase is usually an individual decision-making initiative and rarely a combined venture. In general, household heads invest their individually earned income in the purchase of cattle, which is usually transferred to herd managers (the *khalifa*) and eventually to hired herders (*wainaabe*). Individuals who earn their income from business activities and salaries can invest in the purchase of livestock, and this livestock is considered as their individual property even when integrated into a household herd. The direct consequence of this is that, aside from exceptional reasons, only the individual owner has the final say over his purchased livestock. In general, a modern pastoral herd comprises livestock purchased with personal earnings (*soodaage*, pl. *soodaadi*) and livestock that were inherited (*donaadi*). I also observed that the individualization of livestock ownership through the investment of personal income in livestock is a phenomenon throughout the Far North of Cameroon, but the effect was particularly strong within the modern pastoral set-up, because many more animals in the household herd had been purchased, most of them by household heads and their sons

with income from commerce and peanut, onion, and cotton cultivation. The greater numbers of purchased livestock in the modern pastoral herds also means that the herds have greater diversity in colour and type and are usually not associated to the common genealogies of the inherited household herd.

Livestock entrustment

The analyses of the interviews conducted during this study showed that the entrustment of livestock reflects a form of transfer of guardianship rather than ownership. In this case, the daily caretaking chores for the animals are transferred from an absentee herder to a middleman, to a hired herder/herdsman, or to an independent herder. This means that livestock entrustment is an overall term that encapsulates a variety of different livestock transfers, including the *alkaliiji* or middleman caretaking, *halfiinage* or guardianship, and *nanngaage* or livestock loaning. These forms of entrustment extend beyond each other, and the logic for each system depends on the ethnic group involved and the underlying economic motives. For instance, *halfiinage* (animal given on the basis of trust), *diilaaye* (given for the purpose of milk supply), and *nanngaage* (given for the sake of the offspring) have common characteristics that range from the reason for the entrustment to the economic utility ultimately drawn from the transfer. In the case of *halfiinaage*, the beneficiary of the animal(s) may hold usufruct rights over the milk, as in the case of *diilaaye*, but cannot keep any of the offspring. On the whole, loaned livestock are given in the form of economic relief and the recipient is expected to make maximum use of the animal, while entrusted livestock are reassigned to a caretaker to lessen the burden of herd management on the part of the owner (*jagor'ndo*). Practical differentiation between these systems of livestock transfers can be determined when the goals of the transfers are taken into consideration. Entrustments take place when there is some form of economic compensation involved and when the numbers of animals is considerably large. Loaned animals do not require any form of compensation because they are normally destined to benefit the recipient. In situations of loaned animals, the owner still maintains the rights over his animals and can request the return of one or all of his animals at any given time.

Conclusion

The foregoing analyses were based on the hypothesis that increased demand for pastoral products and sustained traditional cattle transfer systems determine the economic viability of pastoralism and the livelihood of the herders. In the economic domain, the more opportunistic and economically motivated modern pastoralists explore alternative avenues for revenue, through milk sales to milk transformation units, profitable investments in cattle and cattle trade, and opportunities offered by agro-industries and associated social benefits from sedentarization. As a response to pastoral decline, the traditional pastoralists are also gradually dragged into the arena of pastoral modernization. Economically speaking, modern pastoralism gains the herders' profits from cattle-fattening and sales, while the traditional herders gain more satisfaction from owning large herds.

It was also pointed that economic factors such as subsistence needs and milk sale points determine the settlement locations of the traditional pastoralists, and this was identified through the help of the data obtained from Zebu collaring. The data were further discussed with the herders to confirm the results. The interpretations of the

results confirm the fact that the migratory drifts of the traditional pastoralists are closely linked not only to the volatility of the environment but also the social and economic situation of their immediate surroundings. The complex array of their economic adjustments, carried out through cattle ownership and transfers, explains the existence of economic opportunities and adjustments to constraints, ensuring a livelihood for households and for the pastoral community at large.

As regards cattle ownership and transfers, the traditional pastoralists still retain some elements of perpetuating these practices. Inter- and intra-household transfers are still practised by some traditional pastoralists. More cattle are loaned for milk and herd establishment by traditional pastoralists than modern pastoralists. Greater entrustments, however, are made by modern pastoralists than by traditional pastoralists. Concerning the modern pastoralists generally, few animals have come into their herds through livestock transfers, which means that most transfers are of the guardianship type—a primarily economic rather than social transfer. The disappearance of livestock transfers between modern households is primarily due to the high costs and labour demands of raising animals. High production costs in the modern pastoral households have rendered loans and entrustments more burdensome than beneficial for recipients and herd managers. The household heads are also reluctant to transfer ownership title over animals in the family herd because of fears of losing the right of disposal over these animals. Various forms of compensation to herdsman have declined as more and more Fulbe have sought to maintain their herd sizes through direct cattle entrustments.

Currently, the owner, in entrusting his cattle, retains the right to temporarily take back as many as half of his lactating cows to milk for himself. The preference of the local Fulbe for the entrustment contract over a wage contract is due in part to the shame (*semteende*) that results from the loss of management autonomy. For the Fulbe, this loss conflicts with the core concept of freedom (*dimaaku*) that shapes their socio-moral and identity code (*pulaaku*). Working as a hired herder with herding practices dictated by the livestock owner is distasteful. The shame associated with herding for a wage within his community has led to a situation where Fulbe in need of cash will leave their villages to enter the active wage market for sedentary herders. They are very naïve, however, and subject to exploitation through little or no pay for work done.

The next chapter deals with social relations that develop as a result of the difficulties in accessing pastures and water by both the traditional and modern herders. A series of conflicts occurring between the herders, farmers, and fishers (mentioned in Chapter 2) put the rural economy in general and traditional pastoralism in particular on the verge of a collapse.

