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**THE COMMERCIAL SALE OF CAMEL MILK FROM
PASTORAL HERDS IN THE MOGADISHU HINTERLAND,
SOMALIA**

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Introduction

Traditional subsistence pastoral systems in East Africa are typically geared towards the output of calves and milk for human consumption. The production of meat - though not unimportant - is subsidiary to the calf-milk operation. Development efforts directed at African pastoral systems have however generally (and unsuccessfully) been oriented towards the commercialization of livestock as meat or even towards the creation of commercial meat production enterprises - ranches. Although most such systems and societies have been thoroughly integrated into the national markets via the commodization of livestock-as-meat, and cannot now reproduce themselves outside this link, there have been few projects or efforts aiming at the sustained commercialization of the staple commodity of such systems - milk.

It is clear that from the viewpoint of the pastoral commodity producer, the sale of milk would have its advantages, as it would allow the potentially fine tuned sale of a replenishable commodity in a way that does not eat into the herd 'capital'. Moreover, dairy products tend to be in highest demand and to fetch the highest price in the dry season(s), when prices for livestock are low (Kerven 1987a). Conversely, the commercialization of milk has been detrimental to household subsistence and nutrition in a number of instances (*eg* Salzman 1988). Moreover, a squeeze on domestic milk consumption (by exchange into non-protein grain food) potentially endangers the weakest sections in pastoral societies - children and mothers.

From the viewpoint of planners, however, it was the marketing chain, based on pastoral, and thus often nomadic or semi-nomadic households, that posed the main constraint. Recently there has nevertheless been an increasing interest in examples of pastoral dairy production and sale (*e.g.* White and Meadows 1981, Waters-Bayer 1985, Kerven 1987b).

The following example, drawn from Somalia, outlines a commercial 'milk-chain' collecting camel milk for consumption in Somalia's capital, Mogadishu. This chain is entirely local and in the hands of women milktraders, called *abakaar*. It manages to handle between 1.5 and 5 tons of camel milk, daily, reliably, and at an affordable price, from highly mobile nomadic camel herds 100-150 km from Mogadishu. It does so without any external input (expatriate or other), whether technical know-how or capital. The pastoral producers have geared their production and movements to the milk chain, so that in most camel-owning

households, milk sales dominate in their total cash income. This is however not to say that pastoralists in the study area are 'commercial dairy producers'. Their basic outlook has remained subsistence oriented, so that they could be called - if a term is called for at all - 'market-integrated subsistence dairy pastoralists'. Following a brief note on the background of the study and the setting, the paper first considers camel milk sales from pastoral households, then the organization of the *abakaar* milk trade to Mogadishu.

Data Base, Methods, and Setting

The following description of this 'milk-line' is an offshoot of a study on camel and camel milk production in an area 100-150 km inland from Mogadishu conducted for the Somali-Swedish Camel Research Project (SCRIP) based at the Somali Academy of Arts and Sciences (SOMAC). Fieldwork was carried out for 3 weeks in 1987 and for 10 weeks in 1988. Although the focus of the study was on the production side, more prominence was given to the existing milk marketing system in the second term of study. The following description is based on interviews with both pastoral producers and milk traders. Unfortunately both times of field work fell into the winter/spring dry season (*jilaal*), so that the system was not seen in operation at its peak time at the end of the summer wet season (*gu/deyr* interface). It was not possible to give a closer look at the milk distribution in Mogadishu itself.

The area from which the 'milk line' draws its camel milk straddles three administrative regions: Lower Shabelle, Bay, and Hiraan (see map 1). Ecologically and by type of landuse, it is delimited on the eastern and southeastern side by the extensive crop lands of Wanlaweyn area (Dafeed) and the Shabelle riverine fringe. On the western side, it is equally bounded by the croplands around Bur Hakaba. In the north, towards the rangelands of Hiraan region, and the south, towards the large interriverine grazing lands known as *dooy*, the area is however not delimited by a change in ecological conditions or landuse. There, the boundary is given by the social boundary of the production system. Although ownership of grazing land is vested in the state and access in theory is open to all Somali citizens, most herders prefer to stay in the area they consider as their home, and where they have longstanding historical and social relations.

Rainfall is above 600mm inland of Qoryooley and decreases towards the northwest to about 400-450mm, with the usual bimodal distribution of rainfall characteristic of most of Somalia. There are four marked seasons, the dry *jilaal* (December-March) and *hagai* (July-September) and the wet *gu* (April-June) and *deyr* (September-November). It must however be pointed out that the seasons

may not be very discrete in a given year. Thus it seems that around Yaq Bariweyne, both the *hagai* seasons of 1987 and 1988 had at least as much rainfall as the following *deyr* seasons.

Land use and the production system within the study area have undergone considerable change with a wave of infrastructural developments after the early 1970s. The construction of the new metalled road from Afghoi to Baidoa, started in 1971 led to the drilling of boreholes in Balli Dogle and Yaq Bariweyne. A number of large water catchment ponds (*waro*) were also

Map 1: Milk Catchment Area of Mogadishu, Somalia

built to open a livestock trek route from the Bur Hakaba/Dooy area to Afghoi and Mogadishu. These developments opened up the pastures between Wanlaweyn and Bur Hakaba on a year round basis and changed herd movement patterns accordingly. A considerable number of people drifted down from Hiraan and others previously based in the Shabelle hinterland to the south moved north on a more permanent basis. At the same time, the permanent villages of Leego and Yaq Bariweyne developed as 'pastoral service centres' on the tarmac road, and so did semi-permanent settlements at the sites of the large government *waro*. These settlements (together with some older villages in the Bur Heibe area) are now the focal points of the milk collection system which became possible as a consequence of the tarmac road. The possibility of milk sales further changed pastoral management and movement patterns to those now observed today.

1 Camel Milk Sales - the Producer Side

In order to give a background for the discussion of the camel milk trade itself, a few basic data on pastoral camel milk production and sale are presented in this section. Of most interest is a consideration of the role and importance of milk sales in the survival strategies of camel-owning households. A fuller account of camel production in the study area can be found in Herren 1990.

1.1 Camel Ownership

Within the study area, only about a sixth of households - the basic production/consumption/ownership unit locally called *qoys* - own solely camels. A large majority of camel-owning households combine them with smallstock. Additionally, half of the households own either cattle and/or a field. Thus, half of the camel-owners are agropastoral producers. The main consequence of this is that households adopt socioeconomic strategies which are determined by a complex interplay of options and constraints. Most aspects of decision making (production strategies, herd management, seasonal movements, sales of agropastoral products *etc*) vary enormously between households, and only rarely fit a 'general pattern'.

The distribution of assets, especially of camels and cattle, is very skewed in the area. It can be assumed that for at least the poorest 20-25% of the households, herd sizes are insufficient to survive on pastoral production (directly and indirectly) alone. Insufficient pastoral production can be partly offset by grain production, but it is doubtful whether the poorest households can do without client relations and/or remittances from wage labour.

Table 1: Mean livestock holdings and field sizes, by wealth rank^a

Wealth Rank	% Households	Camels	Cattle	Small Stock	Livestock Units ^b	Field Size (ha)
Rich	33	49	27	42	68	0.8
Medium	33	25	11	30	34	0.5
Poor	33	9	1	20	12	0.2
	100	Mean:	26	13	30	37

^a Based on a sample of 90 households. Households were wealth ranked according to the size of their total livestock holdings expressed as livestock units. While camel herds could in most cases be counted, the size of cattle and small stock herds and the size of fields are based on producer estimates.

^b LSU = Livestock Units. The number of animals has been converted on the basis of conversion rates developed by the International Livestock Center for Africa (ILCA) based on metabolic weights (Bekure *et al.*, n.d.). Camels, not treated by Bekure *et al.* were converted by a factor of 0.87, based on an average camel weight of 310 kg (Wilson 1984). Field sizes were recorded in local measures, *darab* or *jibal*.

1.2 Camel milk - Production Data

Comparatively little is known about camel herd productivity in Somalia in general. In relation to milk production, a comparison of published information with my own data suggests that one can expect between 15 and 20% of a given herd to be lactating females at any time of the year. Average offtake possible for human consumption is about 600 litres of milk *per annum*. In the driest season (*jilaal*), daily offtake/dam can be as low as 1 litre, while in the peak season (late *gu*/early *hagai*) it can increase fivefold to about 5 litres.

1.3 History and Organization of Camel Milk Sales

Most herders interviewed were adamant that milk sales are a superior alternative to the sale of live camels beyond the culling of aged or other deficient animals. They generally disclaimed that they had in any way been forced into milk sales

as a consequence of the disastrous drought of 1974/5 or any other pressures. The more common explanation was that generally and for a long time, the demand of pastoralists for a number of goods had been increasing. Elders said that people wanted to trade milk to buy sugar (more common in the diet since the 1960s), cloth, medicine and other 'things of the town', such as flashlights. Therefore, herders readily seized upon the opportunity when the first milk traders started to come to the area after the opening of the new tarmac road in about 1973, and when the desired goods became more readily available in the developing villages along the road.

For the producers, the problem is to bring the milk to one of the collection points along the roads in the area. Generally, the sale of milk is women's work, even if men who happen to go to one of the collection points for other purposes may occasionally carry milk for sale. In the dry season, milk sales can to some extent be integrated with the female routine of getting domestic water at two or three day intervals from wells where milk is also collected. On other days and in other places, special milk sale trips have to be made. Camps are usually quite far from sales points and distances covered for milk sales are considerable in all seasons. In *jilaal* 1989, camel milk was brought to Yaq Bariweyne village for sale from as far as 25 km. The labour demand for selling milk is therefore high, and a number of households could not sell milk at certain times not only because of the distance, but because they lacked a suitable person to carry the milk. Within camps, rotational arrangements are common, with one household being alternately responsible for carrying and selling all of the camp's milk.

1.4 Patterns of Camel Milk Sales

The level of camel milk production, and thus the availability of milk for sale, depends heavily on rainfall and pasture conditions and varies strongly between seasons and years. Moreover, the decision to sell camel milk is influenced by the availability of cow and goat milk for household consumption, and on the availability of alternative sources of cash income (migrant labour, sale of livestock and grains). In the area, there is only a market for camel milk, but cow milk can be processed into *ghee* (*subag*) for sale.

Despite the complexity of household decision making, there are observable seasonal patterns of milk sales, especially if data are disaggregated by wealth. The following presentation is based on two sets of data: an estimate of the incidence and amounts of sale over the four seasons of 1988/89 (Table 2), and a survey of camel milk production, consumption and sale in late *jilaal*/early *gu* 1989 (Table 3). For the interpretation of the data it must be noted that rainfall in *hagai* 1988 was considerably above the long term average, while *deyr* was

considered as below average, and this is reflected in the amounts of milk sold.

Table 2: Average daily camel milk sales and proportion of households selling milk, by season and wealthrank, 1988/89¹

Wealth-rank ²	<i>gu</i>		<i>hagai</i>		<i>deyr</i>		<i>jilaal</i>	
	sale l/day	HH selling %	sale l/day	HH selling %	sale l/day	HH selling %	sale l/day	HH selling %
Rich	10.7	44	8.9	56	10.0	56	5.7	100
Medium	5.1	65	4.6	50	5.1	46	1.9	85
Poor	4.3	60	3.6	80	3.5	60	1.7	93
Mean	7.1	56	6.2	59	6.7	53	2.9	92

¹ Based on producer estimates. For the amounts of daily sales a sample of N = 45 was used, for the proportion of HH selling milk a sample of N = 68.

² Based on the same ranking as in Table 1.

Table 3: Amounts of camel milk sold and consumed daily, and sales rate of households actually selling milk in late *jilaal*/early *gu* 1989, by wealthrank

Wealth Rank	% of house-holds	Late <i>jilaal</i>		Early <i>gu</i>			
		Sales	Con-sump-tion	Sales Rate	Sales	Con-sump-tion	Sales Rate
		<i>l</i>	<i>l</i>	%	<i>l</i>	<i>l</i>	%
Rich	33	5.1	1.8	80	6.7	2.8	70

							11	
Medium	33		2.3	1.0	70	1.8	2.7	40
Poor	33		1.4	0.6	70	2.4	0.6	80
	100	Mean:	2.9	1.0	74	3.4	1.9	63

First of all, more than half of the households are selling milk in any of the seasons, but more do so in the dry seasons. Then, milk production is lowest, and the need for cash to buy sorghum for subsistence is highest. Only very few households claimed to never have sold milk over 1988/89. Conversely, 28% of all households sold milk throughout the year. Thus, camel milk sales are not only a way of disposing of wet season surpluses, but an integral part of the way by which households provide the necessary cash for buying sorghum, sugar and other goods, especially during the dry seasons. The differences between the milk sale strategies of different wealth ranks emerge more clearly in the disaggregation of data, however.

The rich households generally sell about twice the amounts of medium ranked households. In *jilaal* 1989, they could maintain a very high sales rate, but still consume three times more than the poor. They also have most possibilities of supplementing camel milk by cow and goat milk, but almost all informants pointed out that cows were either dry or were not milked at that time of the year. Goats still yielded small quantities, and a number of rich households sold all camel milk at the height of the dry season and relied on the goat milk for the children and to whiten the tea. In the wetter seasons (especially in *gu*), rich households have a tendency to withdraw from the market, as they move to good but remote pastures beyond the milk trade network. This is even more attractive, as milk prices are considerably lower in the wet seasons. When production picked up in early *gu* 1989, they could reduce their sales rate, and at the same time increase the amounts of both sales and consumption.

The medium ranked households also had very high sales rates in *jilaal* 1989. When production picked up in early *gu*, they considerably reduced their sales, both absolutely and proportionally, but increased their consumption to the level of the rich, *i.e.*, they were willing to at least temporarily reduce their cash income and drink the highly valued camel milk. In informal interviews, they maintained that they often had a target milk income in mind, beyond which they preferred to drink the milk themselves.

The poor households are proportionally most involved in the milk market. Their milk production is rarely sufficient to cover consumption requirements, so they tend to sell milk throughout the year and therefore to stay near the milk collection points. This has been most marked in the unusually wet *hagai* season of 1988, when wealthier households moved to remote pastures in the south, while poor households stayed near the Baidoa road. The reason that not all poor households sold milk in *jilaal* is because some had no milking animals left. The amounts sold are only slightly below those of medium ranked households, although the production of the latter can be assumed to be at least double (based on camel herd sizes in Table 1). When the production increased with the onset

of *gu* 1989, the poor stayed on their low level of consumption, but increased their sales rate to generate the necessary cash income. At the milk consumption levels recorded in late *jilaal* 1989, a rough calculation of daily household requirements in energy and protein indicates that among poor households, camel milk covered less than 5% of energy, and less than 15% of protein requirements. The market for camel milk thus allows poor households to sell milk rather than animals in order to maintain the herd, but they do so with a potentially deleterious impact on their nutrition. In fact, a number of poor households sold all camel milk at the height of *jilaal* and were only left with small amounts of goat milk for whitening the tea.

Because of the market withdrawal of many households, especially among the wealthier, in the wet seasons, the increase of market output from the driest season (*jilaal*) to the peak production season (late *gu*/early *hagai*) is only about 70%, while milk production increases about 400%.

1.5 The Importance and Impact of Milk Sales

The interview schedule utilized allowed estimation of the total yearly cash income in only 21 cases, 15 of which were in the poorer half of the sample. Nevertheless, the relative importance of different incomes can be estimated. In 16 of these 21 households (76%), milk sales clearly dominated other income sources. In two other cases, milk sales and other incomes brought comparable amounts of cash. In the remaining three cases, all wealthy households, sales of livestock, mainly camels, dominated milk sales although the volume of milk sales was considerable.

Most informants maintained that camel milk sales had not radically altered their way of life. However, they agreed that the location of milk collecting points has become an important aspect in the decisions concerning camel herd movements and camel management, including the milking regime. Interestingly, many talked about camel milk sales in terms of a tradeoff between the interests of people and camels. In the words of one elder:

Selling milk is good for people, but it is bad for camels.

(Ahmed Usman, 14 April 1989)

The disadvantage for camels is seen in the need to stay nearer to villages, where pasture is less abundant due to fields, charcoal clearings and high livestock densities. In terms of productivity, this results in camels being weaker and thus more susceptible to diseases, mainly in the dry seasons. According to many herders, mortality is higher and fertility is lower, *i.e.*, it has become more

difficult to successfully mate camels. The frequent complaints about the proliferation of charcoaling sites were less about the decrease in forage, but because camels tend to tread on thorns in these places. There was also quite general agreement that the loaning of milk animals to more needy friends and relatives (*hirmansi*) had declined as people now depended on cash income from milk sales.

2 The Camel Milk Trade

In the study area, the trade with milk (mainly camel milk) is divided into two segments:

- the local trade to the villages in the area, and
- the trade to supply Mogadishu, operated by professional women milk traders called *abakaar*.

For this paper, the focus is on the *abakaar* trade; the local trade will be mentioned only briefly.

2.1 The Local Trade

In the whole study area, camel milk is bought by village residents for their home consumption. Given the small size and semi-permanency of most villages, only Yaq Bariweyne, Bur Heibe and Leego will be considered. The buying of camel milk by village residents takes place mainly in the two dry seasons, when villager households buy milk to compensate for the shortfall of their own milk production from cattle herds. In the wet season, the amounts bought are negligible, while at the end of the *jilaal*, the villages may well take up to 14% of the total amount on sale in the area (see Table 5). In general, village households buy only small amounts rarely exceeding 1 to 2 litres/day. The usual pattern is for buyers to ‘hang out’ and stop one of the pastoral women bringing milk for sale, *i.e.*, there are rarely regular arrangements but ‘you buy from whomever you meet’.

Another category of buyers are the small teashops/restaurants in the area’s villages. The main buyers are the teashops catering for the transit traffic on the Baidoa road. As with private local buyers, the amount bought in the wet seasons is almost negligible; in the dry season however, they may buy up to 15% of the amount on sale (see Table 5).

Finally, there are the ‘milk tourists’, the reverse side of the *abakaar* trade. Over the last few years, a greater number of wealthier Mogadishu households have decided to send women and children to either Leego or Yaq Bariweyne in order to drink fresh and cheap camel milk during the wet season. For this purpose they either rent or build houses in these two villages. During the study (in *jilaal*) it was difficult to estimate the numbers of milk tourists. In all, there are about 190 houses in the area owned by outsiders for ‘milk tourism’. On this basis, the total daily consumption may well be estimated at around 1,000 litres/day, or roughly one fifth of the total amount on sale (Table 5). However, *abakaar* did not think this new development drastically impaired their own business.

2.2 The History of the *Abakaar* Trade

Undoubtedly, trading camel milk to the market in Mogadishu must have started a long time ago. The area of supply was however rather limited due to the bad road infrastructure. Indeed, quite a number of informants said that they had intermittently sold camel milk for a long time - some said since the 1950s - but also that milk was regularly sold in the 1960s only from an area reaching to some 20-30 km beyond Afgooye in the west of Mogadishu and to Balcad in the north. It is not clear how this market was organized and whether there were professional milk traders.

In the study area, informants were unanimous that the professional women traders based in Mogadishu (*abakaar*) started coming shortly after 1970, or generally when the new Baidoa road was being finished in about 1973. However, while the road made the area beyond Wanlaweyn easily accessible, this was only one of the necessary preconditions for the establishment of the milk trade along the lines that we still find today. Equally important was apparently the formation of a milk trader’s cooperative in the course of revolutionary mass organization in about 1971 or 1972.

According to my information, only one *abakaar* cooperative was formed, and it concentrated its operation on the new Baidoa road and the area beyond Wanlaweyn, where an area with considerable camel populations was thus opened up commercially. With the accelerating growth of Mogadishu after the mid-1970s, milk trade along all the major roads to Mogadishu has increased, but the organization found in the study area has apparently remained unique.

While we also find *abakaar* milk traders in other urban settlements of Southern Somalia, like Baidoa and Kismayo (Samantar 1987; CASARSA 1988), none of

these seem to be organized in cooperatives, and the market structure is accordingly different.

2.3 The Main Actors - the *Abakaar*

A remarkable characteristic of the camel milk trade to the towns of Southern Somalia is that it is fully in the hands of women, collectively termed *abakaar*. Most *abakaar* work from an urban base, where they have their houses and families. Not surprisingly, the women engaged in the trade are very often heads of households, having been widowed, divorced, or deserted. Most of them have a not too distant pastoral background (CASARSA 1988).

A second feature only began to emerge in the second phase of the study. In the study area, there is a strict differentiation within the traders collectively termed *abakaar*, and the trade is highly stratified.

Four types of actors operate in it:

The 'big abakaar' (abakaar weyn)

These are the members of the one and only milk trader cooperative mentioned above. I do not know the number of original members; today they number 19. It seems that up to the late 1970s, the cooperative had a monopoly of milk trade from the areas beyond Wanlaweyn. It is not clear whether this monopoly still formally exists, but in practice, the big *abakaar* have an important say, through whatever channels, on who participates in the milk trade and on what conditions. Over the past years, the cooperative has also operated to the north of Qoryooley through the Afgooye-Qoryooley road; it is not clear whether this was the case from the start. The big *abakaar* operate on a fairly large scale and have a high turnover of milk and cash. Their 'trade mark' is the huge woven traditional milk container (*haan*) containing as much as 50 litres of milk. These containers are bought in Buulo Berti and are quite expensive.

The 'small abakaar' (abakaar yerey)

The small *abakaar* are women who have been admitted as members of the cooperative, apparently after considerable conflicts with the original *abakaar*. It is said that this conflict was settled by a *sheikh* in the late 1970s. Information on whether they had to buy themselves into the cooperative are contradictory. They operate together with the big *abakaar*, but have fewer rights. It was also said that they operate on a smaller scale and buy smaller amounts, but there are also indications that the division of *abakaar weyn/yerey* is just a matter of

original members *versus* latecomers.

The jaqafley

These women are 'freelance' traders, who are not formally organized. They are called *jaqafley*, after a smallish tin container that they are said to have used instead of the big 40-50 litre *haan* which are a trade mark of the 'real' *abakaar*. Today, they mainly use plastic jerrycans of up to 40 litres, but some of them even worked with 5 litre jerrycans. They buy on a considerably smaller scale than the organized *abakaar*, and are disfavoured by a number of mechanisms discussed below. They started businesses more recently, apparently mostly after about 1984; some informants maintained that such milk trade had been prohibited before 1981, but this could not be verified.

Pastoral women

Finally, nomadic women may bring milk to Mogadishu themselves, either just their own milk, or milk collected from the neighbourhood camps. This is done more often from the southern pasture areas (north of Qoryooley), and mainly in the wet seasons, when labour is more readily available, camel milk is more abundant, and producer prices are low, especially those offered by *abakaar*. Within the sample of milk producers interviewed, less than 5% claimed that their women would intermittently sell camel milk directly to Mogadishu and Afgooye. Direct sales must be much more frequent from areas nearer to the towns, where it is easier for pastoral women to reach the markets.

2.4 The Organization of the Trade

The organization of the trade in the study area is basically simple and seems to have remained largely unchanged since the inception of the trade. The real *abakaar* operate from a truck that they rent on a daily basis, and which carries them along the Wanlaweyn road to the milk production areas. The *abakaar* negotiate a fixed rate for hiring the truck, advance the cash for petrol and then pay the rest of the rate after the conclusion of the trip.

Of course, not all members of the cooperative can do the trip every day. Usually 4-6 *abakaar* buy milk on any day, the truck being reserved for the big *abakaar* on two days, and for the small *abakaar* on the third day. This turn taking however seems to be quite flexible. It changes over the seasons, and may have changed in detail over the years.

In most seasons the *abakaar* truck carries along *jaqafley* women for a fee. The

condition thereby is that the *jaqafley* keep away from the best production areas, where prices are lowest. In other words, the places of purchase open to freelancers are quite strictly set by the organized *abakaar*. *Jaqafley* indicate that they would be excluded from the truck or even hassled *via* government channels if they did not stick to this arrangement. As has been said, this stratification of buyers is apparently unique to the study area. The *abakaar* do not, or only very occasionally, take along pastoral women who want to sell milk.

In late *jilaal* 1989 (end of April), the system operated in the following manner: the *abakaar* truck left Mogadishu between 10 and 12 pm, taking along 4 to 6 *abakaar* ('big' or 'small' according to the day), and about 10 *jaqafley*. The truck passed Yaq Bariweyne and Leego after midnight where the *jaqafley* were set down. Further, one *abakaar* was dropped in Jameco (still on the tarmac to Baidoa), and two big *haan* at Bur Gulow, to be filled by a hired helper, while the remaining four *abakaar* bought milk in Bur Heibe. The truck left Bur Heibe around noon, to recollect all buyers, and arrived in Mogadishu around 5 o'clock in the afternoon.

During the day, the traders started to buy milk when the first pastoral women reached the selling point around 9 am, and continued to buy almost until the truck started the return journey. The arrangements on the spot seem to vary according to the circumstances; in Yaq Bariweyne *abakaar* usually set up their containers (traditional *haan* and plastic jerrycans) in or nearby to a tea shop, but did not operate on the Yaq Bariweyne market place. In Leego however, the *abakaar* used the market stand, and in the less permanent settlements arrangements with tea shops were common. In Bur Heibe, the truck stopped outside the village, and milk was bought under a large tree. Some *abakaar* apparently had helpers at the buying places, but it could not be clarified whether these were employed or not. One teashop owner in Yaq Bariweyne allowed the *jaqafley* to work from her compound, and said that this also stimulated her own business.

In the Mogadishu markets, both *abakaar* and *jaqafley* sell their milk in bulk to other women, urban milk traders, who distribute the milk to the consumers. There was no time in this study to look at the Mogadishu market. It was not clear from the available information whether the *abakaar* always worked together with the same wholesalers in Mogadishu, or whether there was also free competition between urban distributors.

2.5 The Seasonal Variation of the Trade Network

The prime characteristic of the system outlined so far is its flexibility, which is

geared to the flexibility of the pastoral production system. Of course, producers have altered and adjusted their movement patterns to be able to reach the milk collection points, which are to some extent determined by the existing road system in the area. Nevertheless, the milk trade network follows the producers as much as possible. At the beginning of the second phase of study in 1989, the *abakaar* truck went along the main road to about Qardow, and then turned south as far as Barariyo. Then, a little rain fell around and east of Bur Heibe, and pastoralists started moving there. Immediately, the milk truck changed its route and went up north to Bur Heibe.

Abakaar constantly discuss movements of people, and the amounts being offered in different places, and thus have a very close and detailed knowledge of the state of the milk supply. It should be noted that these features of the milk trade only began to be discussed towards the very end of the study when traders had gained some confidence in the researchers. It was then not possible to verify some aspects or to get a better regional overview. The following general seasonal pattern is reliable for the central study area (along the Baidoa road), but less so for the southern pasture areas mostly used in *hagai*.

Jilaal

In *jilaal*, the truck usually operates along the main road, and the end points of the network are not far from it. Fewer *abakaar* purchase milk, and they buy less per trip. Consequently, there is room for *jaqafley* on the truck, but their choice of area is restricted. In late *jilaal* 1989 they were not allowed beyond Leego.

Gu/early hagai

This is the flush season as far as production and sales go. The *abakaar* in this time rent two (or even three) trucks. The trucks operate along the Baidoa road; often, one turns south and goes as far as Farsioley, the other turns north as far as Bur Heibe. The *abakaar* truck(s) then refuse to take *jaqafley* along, and many *jaqafley* stop trading because of the low prices. Others occasionally rent their own small truck and exploit market niches not served by *abakaar*. As one *jaqafley* said: 'We just disappear to bush places and do good business.' This is also the time when increasing numbers of pastoral women travel to Mogadishu (or Afgooye) themselves, using whatever transport is available.

Late hagai

As pastoralists generally move southwards, one *abakaar* truck follows the road

to Farsioley or Dugule. In late *hagai*, *jaqafley* can use the *abakaar* truck much as in *jilaal* and with the same restrictions. Many *jaqafley* seem to stop operations in late *hagai* and early *deyr*, as the restrictions become too heavy.

Deyr

In *deyr*, the *abakaar* generally step up their activities, and again sometimes operate two trucks; the *jaqafley* may rent their own truck to places not served by *abakaar*. As in *gu*, the endpoints of the networks depend on pasture conditions, *i.e.*, it may either be to the north or the south of the Baidoa road.

2.6 Structural Determinants of the Camel Milk Price

Due to the excellent connection to the capital, the producer price in the study area is determined by the demand in Mogadishu and the supply of the whole area within the reach of the milk trade/*abakaar* network, of which the study area is only one part, albeit an important one. The *abakaar* were adamant that the Mogadishu demand is high and does not fluctuate significantly between seasons. Some even claimed that the demand is insensitive to the price. The supply depends mainly upon rainfall, determining both the herds' production and the roads passable for trade in the wet seasons. As we have seen, supply is higher in the wet seasons. Outside the reach of the Mogadishu network, price levels and their seasonal movement may be quite different, as is suggested by the data from Qansaxdhere presented in Samatar (1987).

Almost all herders interviewed confirmed that they did not face a demand problem even in the wet season, *i.e.*, they could sell all the milk they wanted to. However, they complained about the low level of the milk price in the wet seasons due to the high supply. Many herders asked were amazed by the question whether there was sometimes too much camel milk; even if very rarely milk could not be sold as expected or hoped for, it would not be a problem to consume it. At such times, camel milk would be given freely to any visitors or neighbours. The only constraint mentioned was a camp location too far from any point reached by *abakaar*, or a labour problem within the camp. Given the reach of the trade network, only herders with wet season camps in the heart of the Dooy area south of the river and in the Harqaan area considerably north of Yaq Bariweyne, said they had been too far away from collection points to sell their milk.

Conversely, the *abakaar* interviewed in Yaq Bariweyne said they would like to buy more milk, especially in the dry seasons, but sometimes had trouble even filling the containers they had taken along. In conclusion, it can be said that if

at all, the market suffers from an undersupply in the dry season rather than from an oversupply in the wet season.

2.7 Milk Price Variation

Throughout the central milk trade network, *i.e.* that along the Baidoa road, camel milk is measured with a standard tin, called *kombo*, containing 0.8 litres. The milk trade is thoroughly monetized, *i.e.* milk is always paid in cash. Even if an *abakaar* at the same time sells sorghum or sugar, a cash rate is used. There were no long term arrangements found between buyers and sellers; everybody tries to strike the best deal possible on any day. In the following discussion, three types of price variation are examined: variation due to quality, local variation during and between days, and finally seasonal variation.

Variation due to quality

The buying of milk is rarely done without a considerable amount of bargaining. A good part of the discussions turn around the quality of the milk, and the leeway offered by the measuring process. As *abakaar* pour together all the milk they buy, and as the milk continues to sour on the way to Mogadishu, the degree of souring when purchased is unimportant for them, as long as the milk is not well beyond the first stage of sourness, called *suusac*. The disregard for the stage of souring seems to be due to the long trip to Mogadishu at the hottest time of the day. Other studies have reported differences in the price for fresh and sour milk from Baidoa (Samantar 1987) and Kismayo (CASARSA 1988), where distances between producers and consumers are smaller.

More tricky is the degree of dilution. It is an accepted practice that milk sold to *abakaar* is diluted, and the standard rate of dilution is about 2 parts water to 5 parts milk, *i.e.*, the 'milk' being brought to Mogadishu contains some 15% water. Conversely, the price for undiluted milk (as it is often sold to villagers for home consumption) was about 15-20% higher than the price for diluted milk.

Local and daily variation

While the general price level is set by the season, the daily prices vary to some extent during the day, between consecutive days, and between different places. Trade always starts slowly in the morning as long as the local 'price of the day' has not clearly emerged. This price is determined by what the *abakaar* was able to get in Mogadishu the previous evening, the number of traders in one place, and the number of pastoral women expected to come. Around 10 am, the price of the day had usually emerged. Sellers could then either decide to sell and return to the camp without further delay, or wait in the hope of still finding a

local buyer. Shortly before the arrival of the truck, prices sometimes went up, as *abakaar* tried to fill up their containers, or dropped when *abakaar* had reached their target or ran short on cash.

Between days, local variations of up to 25% were observed in Yaq Bariweyne in 1989. Such variation can be the result of shortfalls in supply or demand. In one case, rainfall prompted many producers to shift camp and they were then too busy for milk sale trips. In another case, *abakaar* purchased a larger amount than usual, on commission for a wedding in Mogadishu, which made local prices soar.

Commercially much more important is, however, the variation between places with differing supply. Such differences become structural when the organized *abakaar* restrict the access of freelancers (*jaqafley*). At the height of the *jilaal* 1989, these differences were small, because the number of organized *abakaar* and the supply was small. After the rains had fallen, and pastoralists moved in increasing numbers to the east of Bur Heibe, the *abakaar* restricted the *jaqafley* to buying from Yaq Bariweyne and Leego. Then, differences began to be considerable. After 22 April 1989, the prices paid in Bur Heibe were between 60 and 80 SoSh, while the prices in Yaq Bariweyne were between 100 and 120 SoSh. In informal interviews it was confirmed that such price differences are common when the trade is most competitive, *i.e.*, in late *jilaal*/early *gu* and in late *hagai*/early *deyr*. As the bulk of the milk is handled by *abakaar*, their margin tends to determine the Mogadishu price. As a consequence, the margins of the *jaqafley* become narrower despite the generally high level of prices (see example below), and many stop operating altogether.

Seasonal variation

It has been said above that this variation is driven by fluctuating supply and not demand. In the following, the aggregate seasonal fluctuations are discussed. Given the local variation outlined above, average seasonal prices have to be treated with caution, as they may not reflect the seasonal fluctuation in any given place. Figure 1 shows the estimated seasonal fluctuation of the milk price in the Yaq Bariweyne area in 1988/89 based on informant estimates. Unfortunately, there is nothing like a rural consumer price index for the main pastoral foods, sorghum and sugar. As a proxy, the two indices compiled for Mogadishu consumer prices were used; one is done officially by the Ministry of Planning, the other by USAID for internal wage determination (kindly made available by R Peterson, Program Economist, USAID-Somalia).

Figure 1: Seasonal variation of the average producer price of camel milk

in the study area, and of the (Mogadishu) consumer prices for sorghum and sugar, 1987-89

The milk price shows the expected peak in both *jilaal* of 1988 and 1989, but no corresponding peaks in the *hagai* seasons due to the unusual rainfall noted above. The price increase has been much more drastic in 1988/9; this may partly be the result of the problematic *deyr* of 1988, but more probably of a heated general inflation in Somalia after mid-1988. The Mogadishu consumer price for sorghum has developed more unfavourably in relation to camel milk in 1988/9. An anticyclical movement is normal in *gu*, as milk prices drop with increasing output, while the sorghum harvest has not yet been reaped. However, in *gu* and *hagai* 1988, the gap between the producer price for milk and the price for sorghum has increased. Lastly, the sugar price has soared tremendously since the beginning of 1988, due to general problems in the sugar industry. In 1989, the increase seemed to have slowed, but still pastoralists generally complained that 'sugar made life expensive'.

Long term development of terms of trade

Reliable data on the long term development of terms of trade are not readily available. For the period up to the mid-1980s, Green and Jamal (1987) have found a generally favourable development of the terms of trade between milk and pastoral consumer goods, mainly grains. This was partly due to pressure on grain prices by cheap imports. In the Mogadishu consumer price index of USAID mentioned above, the development after 1986 seems to have been less favourable. If January 1986 is taken as 100, sorghum stood at an index level of around 460 in early 1989, while camel milk stood at 170, and meat (average of all species) at 220. In terms of calories, the conversion of milk to grain is however still rather favourable to pastoralists. In the dry seasons, when the necessity to buy grains is highest, 1 kcal of milk bought up to 8 kcal of grains, and in the wet seasons before the harvest, the rate is still better than 1:3.5.

In the study period and area, the marketing of milk was not influenced by the availability of cheap powdered milk from USA or EEC relief supplies. In 1988, in the Kismayo area, 80% of pastoral households were buying cheap powdered milk for home consumption while selling their own milk to Kismayo town (Peter Little, *personal communication*). It has therefore to be kept in mind that there could be drastic, short-term, and volatile impacts on dairy markets resulting from the import of cheap relief food.

2.7 The Profitability of Milk Trade in *Jilaal* 1989

The following discussion refers mainly to the circumstances in late *jilaal* 1989. The figures from other seasons are too weak to allow similar calculations. Clearly, a distinction has to be made between 'real' *abakaar* and *jaqafley*. An example is drawn from one day, April 24, 1989. The *abakaar* truck went as far as Bur Heibe, and production had already picked up, some 15-20 days after the first showers in the area. On that day, it was the turn of the 'big *abakaar*', of which 4 went along on the truck. They took 10 *jaqafley* from Leego and Yaq Bariweyne to Mogadishu. The average costs, returns and profits of *abakaar* and *jaqafley* on that day are summarized in Table 4.

The abakaar

In that time of the year (early *jilaal*), the profit margin of an *abakaar* is quite high, above 30%. She can hope to get a profit from the trip of about 10,000 SoSh. This level of profit is however only possible on the one hand by rigorously restricting the market access of competitors, and on the other hand by strictly regulating access within the cooperative. If the turn taking within the cooperative actually follows the schedule outlined above, then we can expect that each trader can make 5-7 trips per month, maybe more in the peak seasons

when two trucks operate.

The jaqafley

The profit margin of a *jaqafley* at that time of the year is meagre; about 9%. She can make around 1,000 SoSh per trip; this is also the amount several *jaqafley* estimated. This means that the *jaqafley* have to work hard for a sufficient monthly income. Our observation suggests that most *jaqafley* work about 6 days per week. In the case of *jaqafley* it is clear that with a higher turnover, the profit could be better, but even when we take what was cited as the maximum amount a *jaqafley* could handle, 6 jerrycans (about 180 litres), the profit would still be only 3,500 SoSh per trip.

2.8 The Volume of Camel Milk Trade to Mogadishu

It has not been possible in this study to assess the importance of the milk from the study area in the total Mogadishu supply, but both informants and the study of Samantar (1987) maintain that it is dominant. In late *jilaal*/early *gu* 1989, the amounts bought by milk traders in the study area could be observed over a number of days. They fluctuated between 1,700 and 2,000 litres/day. Estimates for the peak season in late *gu*/early *hagai* were based on the one hand on producer estimates of daily sales (Table 3), on the other hand on an estimate of the seasonal numbers of traders and the amounts they handle. Depending on the assumptions, between 3,000 and 4,000 litres/day can be expected to reach Mogadishu. If we finally take together the amounts of milk sold in both local and *abakaar* trade, we come to the amounts shown in Table 5.

Table 5: Estimated total amount of camel milk sold in the study area, by season, in litres/day

Sales to	Late <i>gu</i> /early <i>hagai</i>	Height of <i>jilaal</i>
Local villagers ^a	50	250
Teashops	150	250
Milk tourists	1,000	-
<i>Abakaar</i>	4,000	1,800
Total litres	5,200	2,300

^a Mainly the larger villages of Leego and Yaq Bariweyne.

Conclusions

It cannot be underlined enough that the camel milk marketing system is efficient because it is both flexible and reliable at the same time. True, the organized *abakaar* have a privileged position in a clearly stratified trade network. However, the profits made, even by them, are not excessive. Moreover, these profits should be viewed in the light of the amazingly reliable service the *abakaar* provide to the producer in the context of a generally faltering economy. Indeed, the milk trade obviously works reliably for at least 350 days per year, and only heavy rains seem able to interrupt it. The women traders supply between 2 and 5 tons of camel milk to Mogadishu every day. On the whole it cannot be said that they make lucrative profits by exploiting the producers, as has been suggested by Samantar (1987).

While the discrimination against freelance traders (*jaqafley*) is disturbing from an equity point of view, the *abakaar* organization also provides the freelancers with the infrastructural backbone, the *abakaar* truck(s). It is not clear whether the dominating position of the *abakaar* today rests more on their acquired economic standing or on government backing. It is moreover highly doubtful whether anybody would profit from an intervention into the market structure. Especially from the point of view of the producer, a termination of the *abakaar/jaqafley* distortion would not automatically be beneficial, or provide a better service. For the moment one should certainly beware of calling for state interference in this matter.

The position of the *jaqafley* resembles the position of the unorganized *abakaar* of the Kismayo hinterland (CASARSA 1988). There we find the same highly individualized, competitive market with low profit margins (7-11%), but easy access and low inputs important for those mostly involved in the trade - marginal women who are heads of households. Ironically, the CASARSA study recommends cooperatives to lower transport overheads and competition.

It is possible that commercial offtake could be increased, mainly in the wet season, by a better road network to the central northern part of the study area (the Harqaan between Gobanle and Bur Heibe), where wealthier camel owners prefer to go in the wet seasons. It is however doubtful whether such an increase would be dramatic.

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