
Original Article

Along the Milky Way: Marketing Camel Milk in Puntland, Somalia

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Abstract Milk is the most critical resource in pastoral systems; it is the staple food as well as the most precious gift. When it flows it means rains have come and peace is there. Milk production and utilisation is deeply embedded in the pastoral institutional setting, which governs natural resource management, household dynamics and social roles. The recent commercialisation of camel milk and its increasing role as an income generator in some pastoral regions reflects and induces important societal changes. By investigating the nature and the dynamics of camel milk production and commercialisation, this article explores their impacts on society as well as on local livelihoods in the Somali context. It does so in Puntland, the northeastern territories of Somalia, where commercialisation of camel milk is an increasingly key dimension of the strategy to enhance livelihood options among pastoralists.

Le lait est la ressource la plus cruciale dans les systèmes pastoraux; il constitue non seulement l'aliment de base mais le don le plus précieux; s'il y a du lait, c'est que les pluies sont tombées, et la paix règne. La production et l'utilisation du lait sont profondément ancrées dans le système institutionnel pastoral, qui gouverne la gestion des ressources naturelles, les dynamiques des ménages et les rôles sociaux. La commercialisation récente du lait de chameau et le fait qu'il procure des revenus croissants dans les régions pastorales reflète et provoque des changements sociétaux importants. En étudiant la nature et les dynamiques de production et de commercialisation de lait de chameau, cet article retrace l'impact de ces récents changements sur la société, ainsi que sur les moyens de subsistance dans le contexte Somalien. L'étude se concentre sur le Puntland dans le nord-est de la Somalie où la commercialisation du lait de chameau devient une dimension de plus en plus importante de la stratégie visant à renforcer les moyens de subsistance des pasteurs.

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Rangelands at Stake

The development domain is by definition embedded in mythological visions and mostly irreversibly informed by virtual images, interfacing unknown realities with unattainable objectives (Scott, 1998; Van der Ploeg, 2003). The more remote and the less known the entity 'to be developed', the more articulated the architecture that is needed to bridge the divide between myth and reality. Remote pastoral populations have thus traditionally evoked a plethora of informing mythologies that have developed through time (Sandford, 1983; Horowitz and Jowkar, 1992; Swift, 2004). During the last century two main myths about pastoralism have been those of Herskovits' 'cattle complex' (1926), attesting to the supposed economic irrationality of pastoralists behaviour, coupled and complemented by Hardin's analysis of herders as engaged in pillaging their natural environments in a doomed 'tragedy of the commons' (1968). According to these lenses, pastoralists have contributed over time to fuelling all the nightmares of modern development: desertification,

famine, insecurity, violence and now insurgency – as the cases of Somalia and Afghanistan attest. Outsiders and observers have almost inexorably pointed to the inability of pastoralists to sustainably adapt to changes.

The distrust of existing pastoral institutions was paralleled by the belief that modernisation in pastoral regions necessarily meant an in-depth restructuring of pastoralism itself. Along these lines a World Bank report in 1991 stated that there was little potential for commercialising milk production among pastoralists, especially those on communal lands (Walshe *et al*, 1991). Not surprisingly, as a result, investments should rather target mixed and intensive dairy farmers, especially in peri-urban areas, the advantage being that their control over the production inputs would be tighter as they are closer to markets. Ironically, that report dates 1991, the same year the Siad Barre regime collapsed and camel milk marketing (CMM) started evolving to become a major economic activity in the Somali drylands.

This article analyses the evolution of CMM in northeastern Somalia, today's Puntland. CMM has reverted from being considered a socio-cultural taboo, to an increasingly popular strategy to support livelihoods in the Horn of Africa. This shift has important implications over the control and the management of the pastoral resources, thus contributing to reshaping local livelihood patterns. By analysing the interactions between the factors that characterise the access, control and utilisation of pastoral resources in the Somali pastoral setting, this work aims to provide relevant insight into the changes affecting a pastoral society increasingly integrated into the wider market environment.

Within the frame of market integration of pastoral economies, most studies have traditionally addressed marketing of pastoral livestock (Kerven, 1992), and yet very little is known and understood about milk marketing and related networks and dynamics in pastoral environments, despite its critical and increasingly relevant role for local food security. With regard to this topic the Maasai are by far the most well-researched pastoral peoples globally. Several other East African pastoral groups have also been extensively researched regarding milk production and utilisation; notable examples for the East African region include the Turkana of northern Kenya (by Ellis and the South Turkana Ecosystem Project (STEP) team) and the Boran of southern Ethiopia (notably by International Livestock Research Institute (ILRI) staff) (Sadler *et al*, 2009). With regard to Somali pastoralists, milk matters were investigated in the late 1980s through the Camel Forum initiative (Herren, 1990, 1992) and by Little (1989, 1994).

This work assesses the way pastoral resources are circulated and converted into valuable products such as milk, and the ways this is utilised are assessed so to provide a critical view of elements concerning the sustainability of such processes, from an economic, social and ecological viewpoint. In order to do so, an 'actor-oriented approach' is undertaken, in order to unveil and analyse the capabilities and projects of the different stakeholders involved in their interrelations.

The interest in this subject started with a collaboration on the Africa 1970/UNA milk programme in 2001, where a survey investigating on milk production and utilisation in approximately 200 herding households was complemented with a more thorough understanding of milk market evolutions. Qualitative information on the social and economic functioning of CMM has been collected through a number of interviews, participatory sessions and meetings held mostly between 2001 and 2003 within this programme. In 2006 a survey addressing the milk market seasonal patterns was undertaken in Puntland in collaboration with Vétérinaires Sans Frontières Suisse, and this was complemented with a survey undertaken with the Save the Children Foundation UK during early 2007 aimed at gaining a comprehensive picture of the local livelihood systems in the region from a sample

of approximately 300 households. Information and data gathered during these surveys are to be analysed from the perspective of the lengthy drought that affected the region from 2001 to 2004, with related impacts on herd production and reproduction dynamics. The complete assessment and analysis of CMM in Puntland is to be found in *Milking Drylands*, the PhD thesis on the subject of CMM in Puntland, developed within the CERES (Research School for Research in Development) Programme at Wageningen University. This article represents a portion of that work.

The article is structured as follows. After having assessed livelihood systems in Puntland, the functioning of the pastoral economy is presented, and the specific case of CMM with its societal implications is then discussed.

Pastoral Livelihoods in Puntland

Puntland's agro-ecological and socio-cultural features are similar to those of most of the so-called Somali ecosystem, and attest to the uniqueness of these territories, where pastoralism is at home. These lands span the large tip of the Horn of Africa, including eastern Ethiopia, all of Somalia, southern portions of Djibouti, and northeastern Kenya. Biophysically, this arid land includes stony deserts with low thorn scrub, riverine vegetation, extensive areas of bush vegetation and high-grass savannah. Nomadic pastoralism is a primary economic and land use activity for the Somalis, with camel pastoralism predominant in the north, and cattle pastoralism based in the south of the region; these are always complemented by large flocks of sheep and goats (smallstock).

A main distinctive aspect of Somali pastoralism is that of a herding society with extended and longstanding exposure to regional and international cross-cultural exchanges and patterns of trade. This is not a common feature for most pastoral societies in Sub-Saharan Africa (that is, Fulani, Maasai, Oromo, Afar, Dinka, Nuer and so on). This feature is mainly a result of the geographical position of the Somali region, not only in terms of having the second largest coastline in the African continent (about 3000 km), but also owing to its strategic positioning, at the interface between the Middle East oil areas, the Indian Ocean trade routes, the Red Sea maritime corridor and Sub-Saharan Africa, at the heart of the political divide between the western world, the Eastern bloc and the Arab states (Gunn, 1990).

The seasonal cycles dominate the rhythm of socio-economic life, which is largely dependent on the natural vegetation growth. Rainfall is the most critical factor in much of rural Somali life, as it is both low and unreliable, and access to water represents the key to local patterns of mobility and livelihood. The four distinct seasons are similar to those in the rest of Somalia: two main rainy seasons, *Gu* (April–June) and *Deyr* (October–December), and two dry seasons, *Xagaa* (July–September) and *Jilaal* (January–March). When conditions are not extreme, herding migration tends to rotate within the same areas, in a transhumant pattern. Protracted periods without rainfall translate into droughts (*abbaar*) with important stresses on local communities, as happened during the 2001–2005 lengthy drought that affected the region. Rainless seasons have, however, always been part of the normal cycle of pastoral life all over Somalia; Swift (1977) reported 13 drought events just in the last century (Figure 1).

Most of Puntland population is from the Darod Clan family, Majerteen group. The population of the region has increased greatly since the war because of displacements of consistent groups who fled from the southern parts of the country for security

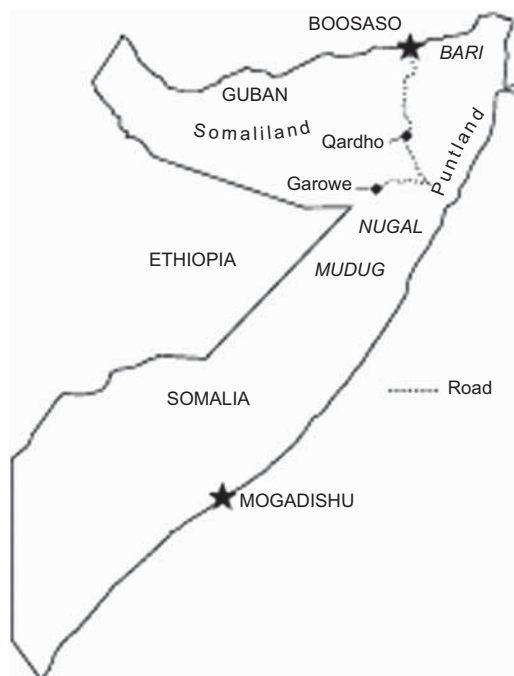


Figure 1: Somalia and its northeastern region, Puntland.

and economic reasons. Overall, it is estimated that this exodus concerned approximately 15 per cent of the 1990s country population. The United Nations Development Programme in 2006 estimated 60 000 internally displaced people in the northeast inhabiting major towns of the region, mostly Bossaso (JNA, 2007). The autonomous 'Puntland State of Somalia' was proclaimed in 1998, following a series of consultations among local leaders that led to a Constitutional Conference. Within the 'modern' administrative set up, the traditional systems based on representation by elders remains firmly in place, and the Constitution assigns them the important role of supporting and checking the new administration (WSP, 2001, p. 29).

Livelihood strategies in Puntland hinge on a multiplicity of diverse and interconnected activities, which draw on local, regional and international resources. Migration to other regions has contributed to the international exposure of the Somali society and the likelihood of drawing resources from external environments (that is, remittance, international aid and illegal trade¹). On a regional scale, livelihoods depend on resources that draw from pastoral, coastal and urban environments and are embedded into one another through a web of interconnections that materialise on different spatial, time and functional scales (Brons, 2001). This economic multiplicity is based on the continuous mobility of people, resources and information. These exchanges traditionally rely on a solid supporting infrastructure involving insurance and credit systems, contributing in time to their development (Gunn, 1990). Market integration of the pastoral economy is a longstanding process, and northern Somali ports (Berbera and Bossaso) export millions of heads of small ruminants yearly (Figure 2).

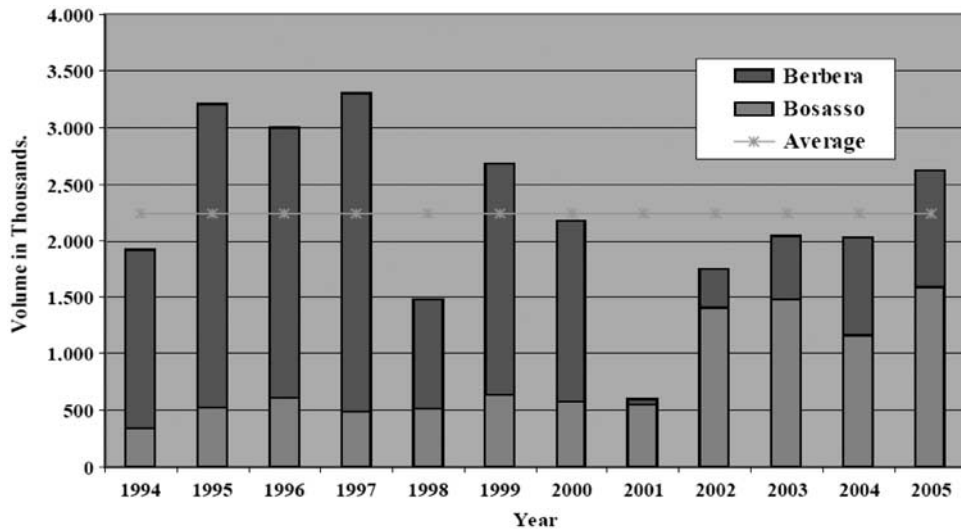


Figure 2: Export of smallstock from northern Somalia: 1994–2005.
Source: FSAU (2005).

Within this framework the relevance of camel milk as an income generator in north-eastern Somalia is quite recent. Reports reveal that before it became a popular activity, there was a certain shame associated with the sale of camel milk, and many people regarded this as causing evil to their stock, especially if it was undertaken by women (ibid., p. 16). As of today the sale of camel milk is still perceived as a cultural taboo in other areas of the Horn of Africa, such as in Afar and Tigray areas in northeastern Ethiopia.

Previous reported experiences of its commercialisation in Somalia relate to the late 1980s, when CMM networks were established in southern Somalia to serve demand from the capital city, Mogadishu (Herren, 1990). As a result of the civil strife that has remoulded the Somali socio-economic fabric, camel milk has increasingly become a marketable commodity in other parts of the Somali drylands and its trade has developed accordingly. At present in the Horn of Africa thousands litres of camel milk are produced, transported and commercialised on a daily basis through networks that link small kiosks, restaurants and shops in the main cities via long transport routes to the desert hinterlands.

Developments in the port city of Bossaso have represented a major trigger for the evolution of CCM in Puntland. During the last two decades Bossaso has converted from a small town (with fewer than 10 000 inhabitants) to a large commercial hub. The completion of the Galcayio-to-Bossaso tarmac road, the development of Bossaso Port in the late 1980s and the expansion of mobile phone coverage, and the local capacity to translate in political terms the relative clan homogeneity of the area, have attracted large numbers of Somalis fleeing from insecure southern Somalia. The urban setting of Bossaso is surrounded by semi-desert mountainous rangelands (mean rainfall approximately 50 mm/y); the rocky nature of the soil provides a further difficulty for camels, which move on delicate hoofs. The local 'livestock revolution' (cf. Delgado *et al*, 1999) has generated a demand for

animal proteins that can scarcely be satisfied by neighbouring districts. As a result, most of the milk that is consumed in Bossaso has to come from relatively remote areas, such as Qardho, Burtinle and Jalam areas in Mudug and Sool and Hawd Plateau and Nugaal Valley; some production areas might be as far as 600 km from the terminal markets (WSP, 1998).

Camel Milk

The milk that flows in local markets results from a number of processes and relationships that enable its production and commercialisation. These dynamics are governed by a complex institutional environment that regulates the access, control and utilisation of resources in the Somali pastoral setting. Hereafter, an analysis of this environment is proposed specifically concerning the market shed of Qardho.

Making Milk

The institutional setting governing Somali society relies on the organisational principle of the clan, based on agnation, and the framework defined by the customary rule, the *xeer*. As to the pastoral nature of the society, local contiguity is not a significant principle of social cohesion and solidarity; these come rather through common genealogical affiliation (Farah, 1994). Somalis are structured on a kinship system of segmentary lineages that divide into subsidiary clans or lineage groups. The belief in common descent and traditional genealogies represents the backbone of the social Somali contract; descentence follows mostly patrilinear lines and defines the collective identity and responsibility of its members *vis-à-vis* the rest of society. The clan is the basic unit that associates population groups with a common descent; social relationships are defined in terms of kinship based on descent from a common ancestor, who in Somali oral history is considered an Arab *sheikh* who migrated to Somalia sometime in the distant past.

On the other hand, the *xeer* represents what in academic terms is defined as customary law or social contract. It combines elements of the Somali pastoral cultural elements with dictates from Islamic jurisprudence in establishing individuals' reciprocal rights and obligations *vis-à-vis* natural resources and social relationships. *Xeer* offers the interpretative machinery both for the internal governance of a community and for its relations with other Somali groups; it represents the set of rules and procedures that provide the backbone to the social, political and civil functioning of Somali society (Kapteijns, 1995; Sucad Ibrahim Abdi, 2001; PDRC, 2003). Genealogy determines resource entitlements, labour division, rights, obligations and relative standing of persons and the exercise of authority (Gunn, 1990; Farah, 1994; Unruh, 1995). In this sense the clan dimension provides a regulatory framework for the control of pastoral resources, setting the scene for their access and management, through the rules defined by the *xeer*. This institutional setting governs life on the Somali drylands.

The relationships between pastoralists and livestock involve a biological dimension that translates into social dynamics (Horowitz and Jowkar, 1992). Herding and caring for livestock is arduous work and imposes upon the family a division of labour. Each household member has specific tasks to perform.

Camel herding implies moving to remote rangelands far from the family hut. The posture, water, salt and other pastoral resources that make up the living of a camel are

found in different territories, over which bundles of rights and claims co-exist and conflict. Animals and herding boys from different households from the same *diya-paying* group² move along together, with their fathers paying regular check-up visits. Young male members are sent in advance to scout (*sahan*) potential grazing territories before herd and household units move; a meeting of the elders is called and a final decision taken as to when and how to move to the new place. Elders often reside in villages and settlements, from where they perform political roles including information gathering and decision making over natural resource management and resolution of possible conflicts. Herdsmen come together not only to exploit natural resources better, but to protect themselves against misfortune and insecurity (Elmi, 1989, p. 37). Camel watering is less frequent but much more labour-intensive compared to that of smallstock, as a camel might drink several dozen litres of water at a time. Furthermore, camels are watered at points where control rights are often to be negotiated with other groups. During the surveys, it was reported that most conflicts break out or escalate as a result of disputes at watering points among camel herders, specifically at *Jilaal*. Having to wait too long to water someone's camels or being overtaken during the queuing at a water point is a main source of problems, not only owing to camels becoming impatient, or herders growing tired, but also because the whole clan identity is brought into the arena when a herd goes watering.

Different management patterns characterise smallstock, which necessitate continuous but low-intensity labour to look after the flock. Distance from the household hut is limited, and it is the responsibility of children to attend to the sheep and goats and that of the women to milk them. During *Jilaal* small ruminants are watered at home wells, which are typically in the territory controlled by the group. During that critical period a household and its flock are often found in the territory related to that group (*degaan*), while camels are brought far away, also to preserve the *degaan* grazing resources (Table 1).

Figures from the UNA survey attest to these patterns. Camel rearing is a task almost exclusive (97.3 per cent) to household adult males, and this includes grazing, watering, looking after their health and milking. Similarly to what is reported for the Beja of the Sudan (Hjort, 1993), women are not permitted to milk camels. Men are also in charge of all livestock marketing, which is mainly restricted to small ruminants. Women normally look after small ruminants (84.6 per cent), with support from young children, and milk the goats (92.9 per cent). The marketing of camel milk is predominantly done by women. In fact, adult males are only involved in the marketing of milk during the *Jilaal* season when

Table 1: Main persons responsible for livestock-related activity (*n* = 191)

	<i>No. of respondents</i>	<i>Adult males</i>	<i>Adult females</i>	<i>Any adult</i>	<i>Children</i>	<i>Labourers</i>
Grazing female camel herd	185	97.3	0.5	1.1	0.0	1.1
Grazing male camel herd	183	64.5	4.9	11.5	18.6	0.5
Grazing sheep and goats	169	0.6	84.6	5.9	7.7	1.2
Milking goats	168	3.6	92.9	3.6	0	0
Milking camels	180	95.6	2.8	1.7	0	0
Veterinary care	162	93.2	1.2	3.1	0	2.5
Fetchng/watering animals	182	94.0	1.1	3.8	0	1.1
Marketing livestock	182	97.8	0.5	1.6	0	0
Marketing milk	177	20.9	49.7	28.2	1.1	0

Source: Author's work with UNA (2003).

they migrate afar with milking camels. Exceptions to these rules obviously apply, such as women trading livestock in Somaliland during the 1990s (Warsame, 1996) and in the Ethiopian Somali Region more recently (Umar and Baulch, 2007) and male enterprises trying to market milk. But a thorough analysis reveals that these exceptions tend to reinforce the rule, which defines distinct, complementary and inverse roles for Somali pastoral men and women in the productive and commercial spheres (refer to Nori, 2010).

Marketing Milk

A number of diverse ways exist in Puntland to market milk. The most important and effective milk marketing networks are those controlled by women, who can be said to control approximately 90 per cent of local milk markets. Primary Milk Collectors (PMCs, *kaameley* in Somali) are women located in mobile camps that follow seasonal pastoral transhumance in order to collect fresh milk from surrounding herders on a daily basis. PMCs move from one place to another tracking and following milking herds, so to collect and supply milk to urban-based Secondary Milk Collectors (SMCs). They are based either in small rural settlements or in mobile camps, where they receive fresh morning milk from herders.

While milk and other pastoral products flow towards urban dwellers, imported goods are made available to inland and coastal populations through the milk collectors networks. In this respect milk marketing is thus closely intertwined with bush petty trading, representing a critical source of livelihood for many Puntland households. As reported, PMCs not only depend on milk trade mark-up, but also gain simultaneously from the commodities they sell to herders. PMCs assert that the bulk of their profit is made by one business (milk marketing) or the other (sales of good to herders) depending on the seasons. During lengthy dry seasons and prolonged conditions of economic hardship, these petty traders have the capacity to bear and buffer the short-term financial difficulties of their clients, through a complex system of credit. Their relationships with SMCs and wholesaling transport companies are continuously remoulded from a season to another, hinging on a set of longstanding principles, such as trust relations and credit mechanisms (Figure 3).

Collected milk is then sent to SMCs (*aanoley*) based in the recipient town markets, which receive milk on a daily basis and distribute it to market retailers. Transport companies managed by men are hired by female collectors to transfer milk and related information and goods across rangelands; distances covered daily through rangelands may surpass 100 km. SMCs are mostly female-based in the final market, in Qardho, Garowe or Bossaso. They receive the milk sent daily by PMCs and sell it directly, or, more often, they

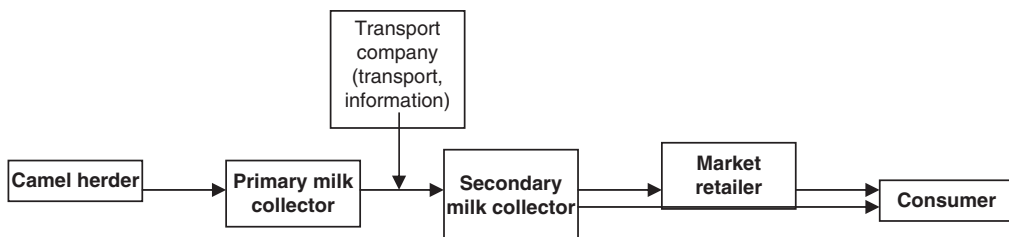


Figure 3: The chain of actors involved in camel milk marketing.

distribute it to market retailers. At the end of the day they collect the milk money and send it through the same milk supply route. At times SMCs are also in charge of supplying imported commodities to their PMC partners. SMCs together with retailers include their mark-up profit in the final price to consumers. On average, each SMC is served by 2.35 PMCs, who do not normally change from a season to another and remain the reference suppliers throughout the year. SMCs keep the milk in jerrycans or store it in *haruubs*.³ The empty containers go back to the PMCs together with the recovery cost and the relative income statement, through the same supply route.

Most collectors deal with a range of available products depending on the season: camel, goat milk and *ghee* (clarified butter). However, during *Jilaal* and in dry periods it is milk from camels that is of utmost importance for their economy. The networks constituted by female milk collectors represent the backbone of CMM; the relationships established between primary and SMCs are embedded in a number of societal values and norms, which critically shape the institutional environment for CMM. During the research the CMM network operating in the district of Qardho was assessed.

The average age of respondent female milk collectors is 37.4 years, ranging from a minimum of 26 to a maximum of 56 (Save the Children Foundation (SCF) survey, $n = 158$). The age of PMCs located in more remote bush areas is lower compared to those located closer to the main road network. Over time those among the first to initiate CMM in the bush have slowly moved towards more comfortable positions, such as along the main routes or the tarmac road, while 'it is up to the younger ones, those with few or no children, to be located in the remote bush'.⁴ A similar trend linking age with positions along the marketing chain was reported by Little in southern Somalia (1994). For most women, no other alternative to work and generate an income exists in the region. Most interviewed SMCs used to be housewives before becoming engaged into CMM. Approximately 15 per cent undertook nomadic tasks in the bush before coming to town to sell milk, while 20 per cent of these women have been involved in other forms of trade, often tea or vegetables. Most interviewed PMCs state they have not had previous work experience other than looking after the household or the flock. Some stated 'milk is the only thing we know about'.

Approximately 44 per cent of households involved in the CMM are female-headed, which is higher than the reported average for the region (approximately 35 per cent, WFP, 2007). This seems to confirm UNA indications that milk collectors are mostly widowed or divorced women who are the breadwinners for the rest of the family members (1998, p. 15). In addition, another 11 per cent of interviewed SMCs reported an unemployed husband, which further increases the consistency of bread-winning women within CMM networks, and attests to its relevance as an income-generation activity for vulnerable households. This comparatively high rate of single women working as milk collectors in the CMM is explained by the fact that the allocation of time and labour better suits their conditions, compared to other forms of business that are more demanding, such as collection and sale of wild gums and wood.

No direct correlation seems to exist between the marital status of the SMCs and their previous work experience. A question thus remains as to whether the rate of household-heading women is higher-than-average among milk collectors because (a) single women turn to CMM to generate an income for their household or (b) women who have acquired some economic independence through CMM are more likely to divorce their husband. Indications from field interviews would confirm both hypotheses, and in general describe CMM as a mechanism that has enhanced women's position within the local societal setting.

The SCF survey results on the relationship between primary and SMCs evidenced that, overall, the relevance of family ties is quite limited (less than a third), and definitely not predominant. A deeper analysis of these data through interviewing milk collectors reveals that family ties (often of sisterhood) between primary and secondary collectors might be relevant for newcomers in the first stages of attachment to the marketing, whereas these become proportionally less relevant in the longer term. Relations among female collectors are mainly based on mutual business interest, though most of these links started in family/kin affiliation (UNA, 2001, field report). Friendship is the most chosen definition for their relationship with the other side of milk collection, entailing that human and business interests coincide in the arrangement. According to SMCs ($n = 68$) they meet with PMCs about every week. Cases exist of milk collectors partnering in milk marketing who have hardly met: as a woman once stated in Awlidaaglay ‘We only know names of each other though we don’t know the faces’.

To understand the evolutionary mechanism of pastoral trade and milk marketing in the region, we can differentiate between milk collectors involved in the system before and after the 2001–2005 drought. A distinction can be said to exist between the SMCs selling milk within the Qardho market facilities provided in 2003 by the UNA milk project in collaboration with local administration and those crowding its external surroundings, thus operating in worse environmental conditions, and at slightly lower prices. As the survey confirmed, the latter are clearly the latecomers, less integrated and often with a nomadic background. They have a higher degree – approximately three times more – of direct family relationship with their respective PMC, compared to those installed inside the market.

As a result of the drought conditions they have either lost their animals or broken the relationship with their husband and have thus come to town and changed their lifestyle. They have, however, kept their nomadic links and invested in them. They have established commercial networks with their sisters, who are still nomadic, and who supply them daily milk from the rangelands. This case further serves to confirm that the milk market business starts through family ties between primary and secondary collectors, so that family resources are pooled and jointly invested. As the network gets extended these arrangements change in nature, and family ties become less relevant and trust is generated through fair commercial relationships (Table 2).

Table 2: Estimation of average amounts of people and milk involved in CMM in Qardho district (Deyr 2006)

<i>Agents</i>	<i>Herders</i>	<i>PMC</i>	<i>Transport companies</i>	<i>SMC in Qardho</i>
Herders	10 herdets each	—	—	—
PMC	Milk from approximately 100 herdets	150 PMCs	—	—
Transport companies	—	3 cars × 10 PMC each	Six companies @ three cars	—
SMC in Qardho	—	2,35 PMCs for each SMC	—	Approximately 65 SMC
MILK × unit (galaan = 0.75 litre)	10	100	3000	235

Source: Author’s fieldwork with VSF, July 2006.

CMM networks are supported by a social infrastructure that enables the effective circulation of information, which is critical to the developments of the system. Information circulating among CMM agents relates to three main areas, namely the prices in the consumers market, the need for and price of imported commodities, and the origin and quality of collected milk. Furthermore, a sophisticated system of credit (*daayn*) exists to facilitate resource flows in different seasons and also to support vulnerable and poor groups in times of need. Credit represents the backbone of economic transactions in the region. It works as a type of delayed payment that enables flexible transfers over time and thus helps to buffer the seasonal fluctuation that characterises the livelihood systems. Credit systems characterise almost all economic transactions in the region, from those involving livestock and milk, to those regulating access to and exploitation of frankincense and fishing resources.

The credit system works on one hand as an incentive enhancing market accessibility, while also providing adequate financial support in times of crisis on the other. In this sense credit is vital to CMM exchanges, as it enables the functioning of the market to continue even when milk is scarce but producers' needs are on the increase. In a way, credit helps the redistribution and sharing of the economic risk of operating under such conditions among the different actors involved.

Over time, the 2001–2005 drought further pushed the integration of pastoral livelihoods into the market economy, as those who had good relationships with market stakeholders (milk collectors/petty traders and wholesalers) reportedly fared better during times of drought than those who lacked these relationships. In this respect, credit mechanisms that maintain pastoralists' purchasing power and food entitlement during difficult times represent a most effective device to support pastoral livelihoods. This system also enables rapid economic recovery once dire times are over, thus enabling the pastoral economy to continue tracking environmental conditions (Swift, 1994).

Assets and Actors

In this section, the three critical domains regulating pastoral resource control, transformation into products and the utilisation of these are discussed. Notably, the social actors and mechanisms behind these systems are different, and complementary to an important degree. Control over rangeland and herd resources relies on clan-related mechanisms and as such is managed by men, whose corporate identity is strong, whereas milk commercial networks are transversal to clan boundaries and are managed by women, who are in control of milk as a commodity.

Camel as an Asset

Among Somali pastoralists, livestock represents both the means of production and the basis of wealth and prestige; different animals contribute differently to household subsistence in the short and long term (Talle, 1988).

As expressed during the survey, camels constitute the main clan corporate asset and the most direct link of individual pastoralists with their clan, and as such are an interface between the individual and the collective dimensions. They are seen as part of the general claims of a *diya* paying group, and as such their ownership rights are restricted: camels belong to men, not women, with group rights prevailing over individual rights (Horowitz

and Jowkar, 1992; Farah, 1994; Samatar, 1994; Warsame, 1996). Different dimensions of the *xeer* institutional arrangements refer to camels as the measure of things, as holding camels is central to mechanisms regulating conflict resolution and alliance-building. In Somali poems, songs and riddles, camels are compared to the most beautiful women, the most precious jewels and the finest weapons (Abokor, 1987). Smallstock on the other hand are conceived as animals owned and controlled by the household, which has absolute rights over them. This can also be noticed in the different branding of the animals. All camels of a particular patrilineal kinship group are in some senses regarded as common property and marked with one single brand (Hussein Mohamed Ali, 1984; Farah, 1994).

Somalis not only live on camels, but their lives are also defined in camel standards, in a society that is governed by a 'camel ideology' (Meeker, 1989). This ideology deeply embeds the wider institutional set-up, with the dual role of animals reflected in the sexual division of labour and entitlements to and control of livestock as assets (Joeke and Pointing, 1991). Women's 'ambiguous' role vis-à-vis the clan organisational system is reflected in their properties and rights. Women cannot be entitled to main capital assets: large ruminants, horses, buildings, vessels and frankincense plantations; in the south their land rights are limited. In Somali culture, women are thus not entitled to camels; inheritance or compensation rights can be calculated in camels but effectively paid in smallstock (Warsame, 2001). This is not in line with Sharia principles, which grant women fair inheritance rights, and differs to a large extent from the system analysed for another important camel society, the Tuareg, where women are recognised as having specific livestock ownership rights over camels (Oxby, 1987; Worley, 1988).

Women's rights, roles and responsibilities over livestock differ consistently from those of their male mates, and their social networks are transversal to those based on clan affiliation pertinent to men. Within this framework, each camel stock is likely to have a specific set of rights and claims within the larger clan frame.

Milk as Use Value

Herd management and production of camel milk are highly complex systems; human capacities and social relations are both important to make the best use of a limited and variable natural resource base. Circulation of camels and milk within the extended family is also an important feature among Somali pastoralists. Figures from the UNA survey attest to the relevance that lactating camels and their milk hold in existing social support systems among members of a kin group, as shown by the important circulation of camels and their milk. Of herded camels, 24.5 per cent are derived from either the father or some other relative, and significantly most of these are women. Twenty-five per cent of the yielded milk is daily distributed to members of the extended family. Camel status is the reason for the relevance of the circulation of camels (and milk) between and among different groups. Camels are continuously entering and leaving an individual herd, regulated by social institutions such as heritage and bride wealth, but also by blood compensation and restocking. All these pertain to the higher level of the clan sphere/organisation. Apart from the relevance in reviving genetic diversity within the herd and thus decreasing the risk of inbreeding, these exchanges embody the cementing of important political ties at inter-group level.

Camel milk thus holds an important social dimension, as, if it were not commercialised, that same milk would circulate within the extended family/kin group, which then retains some claims on its utilisation. Camel milk 'moral economy' value is likely to be the main

reason behind the taboo concerning its commercialisation. Lineage redistribution or other forms of collective circulation are supplemented with systems of individual loans of camels. The herd that is managed by one household typically belongs to a variety of owners (Dahl, 1979; Hussein Mohamed Ali, 1984, p. 16).

At every step a number of different options to utilise milk are possible (also refer to Kerven, 1992 and Sikana *et al*, 1993): (1) milk can be used for the calves, in order to spur their health and growth. This strategy can apply in a variety of conditions, often aimed at increasing the herd size (for example, restocking, trade, dowry formation and so on); (2) milk can be used to feed the pastoral household members, either as a staple or for specific purposes (for example, camel milk is also used as a treatment for sick people); (3) milk can be distributed to members of the larger family or given as a gift to (urban) relatives, so to strengthen existing ties and safety nets, contributing to the enhancement of the household capacity for requesting support in times of need; (4) milk can be given to herders to enhance their physical strength and as an incentive for their labour activities; (5) milk can be directly marketed, either fresh, sour or processed into ghee so to purchase imported commodities or to pay back outstanding debts contracted during harsh times; (6) milk can also be marketed to purchase inputs important for camel production, such as water or veterinary materials.

These diverse uses intertwine and compete among Somali pastoralists to different extents, depending on the specific household (that is, stage in the development cycle, labour availability), location (that is, available range resources), time (that is, season), ranking (that is, relative wealth) and other factors.

Producing milk from camels is thus deeply embedded in the institutional environment governing Somali pastoralism; it results from the mobilisation of natural resources whose control is in the hands of men and their access regulated through clan-related mechanisms. Camel herd management is the men's task, including milking, a critical step in controlling the milk amount devoted to the reproduction of the herd. However, once milk is extracted from the animal, its control goes under the woman of the household, the 'milk manager' who is in charge of the reproduction of the household (Dahl, 1979).

Milk as Exchange Value

When it comes to marketing, a set of important distinctive elements characterise commodities generated through the management of flocks and herds, namely camel milk and smallstock. Although both commodities contribute to the market integration of the pastoral economy, the mechanisms behind the trading of these products differ substantially; trading milk and smallstock are quite different enterprises and so are the governance structures enabling and regulating them. They have in common, however, that the achievement of a critical mass of the commoditised product is critical to enhancing economy of scale and lowering transport costs. In addition, both require establishing and maintaining security arrangements that ensure safe circulation of the products through territories controlled by different groups. The livestock corridors that are shaped through lineage divides have expanded through the camel milk market, and now include female-controlled social networks. This is largely a result of the 'ambiguous' clan affiliation of Somali women, which enables them to establish and maintain alternative forms of association based on solidarity and reciprocal support mechanisms that go beyond the family or the kin group (UNIFEM, 1998; Gardner and El Bushra, 2004).

Women are the milk managers, and money generated through milk sale is a female domain. However, female control over milk money is not limited to the household level, as the whole CMM chain is under their management. Indeed, the disaggregated nature of the milk market, the relative durability of soured camel milk and the low initial investment capital facilitate the participation of distant pastoral women in the marketing, allowing them a degree of cash autonomy (Little, 1989). This is in contrast to the domains pertaining to the production of camel milk, which are socially regulated through the clan organisational structure.

As assessed during the research, initially men participated in the marketing of CMM, but they have then been sidelined. The rationale behind this has two versions: on official and a more grounded one. Hay Ganni – a milk collector in Yaka, one of those who started the current system – during an interview expressed it as follows. Officially men do more ‘important’ things, such as dealing with politics and trade; milk marketing is a simple business and men are not interested in the petty money it generates. The less official but more inspiring version reports that men face problems in accessing the milk of camel herds belonging to clans different from theirs.

As already noted by Samatar (1994), use rights over camel products such as milk and meat pertain to all members of a *diya* paying group. The sale of camel stock is a clan matter, and this also applies to the utilisation of milk. Although milk as a commodity is under female control, it is, however, not easily acceptable for milk from camels of a clan to be utilised to generate a profit for another clan, unless proper arrangements have been agreed upon. In order for men to purchase and sell milk from camels belonging to another clan, negotiations should be undertaken between the milk trader (from say clan W) and representatives of the camels’ clans (saying X, Y, Z), and agreements arranged accordingly. This happens to an extent,⁵ but it proves to be a much less effective way than the one operated by women. The fluidity of the system, the scattered nature of grazing and the mobility of herds would in fact imply that negotiations are continuously undertaken and rearranged between the trading men and representatives from the various clans and groups that happen to graze in the milk collection areas from time to time.

In order to keep transport costs low and overall market access efficient, a critical mass of milk needs to be collected daily; in case this is being done by men the transaction costs of such operations are much higher compared to those for women. Women’s capacity to diminish these costs derives from their ‘ambiguity’ or ‘neutrality’ vis-à-vis the clan organisational structure. Admittedly, they face no problem in accessing the milk of herds belonging to different clans, as their own clan identity is not strongly defined. The arrangements they have to set are thus purely commercial (that is, the price of purchase, forms of payment, options for credit), and do not imply a political dimension.

On the other hand, it is men who control the trade in smallstock, which in turn is the result of female herding activities. A transversal gender complementarity exists between the management of flocks and herds and the marketing of their primary products. The shift from the productive to the commercial sphere thus implies a change in gender responsibilities within the household: men trade smallstock, whose production is largely controlled by women, while women market the milk of camels produced by men. Interestingly and significantly, camel herding, including milking, belongs to the domain of men. The reverse applies for small ruminants. This dichotomy is shown in Table 3, and carries important implications for the resource management and household power structures.

Table 3: Management and economic control of diverse pastoral resources

<i>Camel milk</i>		<i>Lambs and kids</i>
Clan grouping	Asset control	Household
Men	Production management	Women
Women	Product control	Men
Women	Marketing management	Men

An Uncomfortable Taboo

Despite the rich body of scientific data attesting to pastoralists' economic rationality and recognising their productive strategies as an effective adaptation to difficult and often hostile biophysical and political environments, much contemporary thinking about pastoral developments is still informed more by myths than facts (Horowitz and Jowkar, 1992, p. 50). An in-depth assessment of the mechanisms governing the ways people mobilise resources, convert them into products and use these products reveals in fact a rather complex and sophisticated existing institutional environment – differently from what Hardin's predicted with its Tragedy of the Commons (1968). This is of particular interest as it has implications for the sustainability concerning the market integration of this pastoral society – typically a most challenging process for pastoral groups all over the world.

The commoditisation of camel milk contributes to important changes in the societal set-up, involving on one hand the construction/emergence of a new market and on the other a remoulding of range resource management patterns. It results from interacting layers of different rights and bundles of claims, from those governing access to range resources among different corporate groups, to those allocating camel control within a group, from those defining use rights of herd products within the household to the mechanisms regulating their transactions. The milk that finally finds its way through local networks is the outcome of negotiations among alternative uses and conflictive interests that take place between a range of social actors for whom camel-related products are essential livelihood elements. These processes in turn contribute to a reshaping of the relationships between and among groups and individuals and those between people and the natural environment they interact with.

In Somali pastoral society, the camel represents the reproductive means for the herd as well as the family. The dual meaning and role of the camel within the local society and the contribution of its milk to the household economy generate a conflict of interest between the individual and the corporate dimensions and between men and women's domains. Women's ambiguous kinship ties put them *de facto* outside the corporate dimension, excluding them from the associated resource control and inheritance rights. While men control camels and are in charge of their milking, women hold control of the utilisation of milk within the household. In this picture the conflict between men and women is inevitable because women give first priority to satisfying the needs of their children, while men put the needs of calves – and by implication the herd and the interest of clan – first (Talle, 1988; Joekees and Pointing, 1991; Horowitz and Jowkar, 1992, p. 50).

The commoditisation of camel milk has turned from a taboo to an increasingly relevant livelihood strategy; this process has generated a new arena for these conflictive interests.

A herder close to Qardho expressed it neatly by saying that ‘marketing of camel milk is good for people, but is bad for the herd’. Similar statements have also been reported by Hussein (1984) and Warsame (1996) referring to the camel milk commercialisation in southern Somalia.

From a developmental perspective, marketing of camel milk represents a further step in the larger process concerning the market integration of the Somali pastoral economy. This process hinges on the complementarity between gender-based roles and responsibilities, as men trade what is produced under women’s responsibility and women commercialise the primary product of clansmen. Pastoralism is a form of production where male and female contributions are intertwined, and a mere distinction between a domestic domain controlled by women versus a more public one dominated by men is fruitless in understanding the intricacies of Somali pastoral resource management (Rosaldo and Lamphere, 1974; Dahl, 1987; Talle, 1988).

The relevance of gendered roles in shaping rural livelihood strategies in an environment that is continuously reshaped by the wider family, community and extra-community connections has also been assessed for other environments (Richards, 1989; Berry, 1993; Fairhead and Leach, 2005). Men and women in this picture support and defend their own interests as individuals, but also embody societal roles, in that men lobby on behalf of the community of their clansmen, while women advocate for the members of the household. The sharing of responsibility between who mobilises resources and converts them into final products and who brings the products to the market represents an important mechanism protecting productive resources from dynamics merely driven by market interests, thus enhancing their social relevance.

Concerning the sustainability of such a process based on the results of our survey, CMM evolution seems to have positive externalities on the environment, as it supports the mobility of herds and the utilisation of remote rangelands; in this sense mobility is critical to keeping quality pastures and thus enhancing productivity. This is contrary to other reported cases where the commercialisation of pastoral milk has induced processes of sedentarisation in peri-urban environments (Broch-Due, 1981; Niamir Fuller, 1982; Waters-Bayer, 1983; Salih, 1985; Kerven, 1987; Michael, 1987; Sikana *et al*, 1993; Fratkin and Smith, 1995; Pantuliano, 2000). Along these same lines, the research demonstrates that societal changes cannot be predetermined; in this sense integration into markets does not necessarily reinforce social inequalities and gender hierarchies, and implies a marginalisation of weaker social groups and an erosion of their rights, negatively affecting their autonomy (as to Salih, 1985; Talle, 1988; Joekes and Pointing, 1991; Horowitz and Jowkar, 1992). One could view the evolution of CMM as a male form to control women’s labour; however, the control over camel milk profits and the high rate of female-headed households involved in its marketing are good indicators of how limited a perspective that vision holds (also refer to Waters-Bayer, 1983; Berry, 1993).

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Notes

1. Illegal trading and other trafficking might then become a primary activity in the aftermath of harsh periods, as the current piracy phenomenon seems to demonstrate.
2. Within the fragmented and dynamic Somali organisational system, the most stable sub-unit is the lineage segment, consisting of close kinsmen who together pay and receive blood compensation in cases involving injuries or killing; this unit is called the *diya*-paying group.
3. Traditional wood containers for milk.
4. Hay Ganni, field interview in Yaka, February 2007.
5. Two male-managed milk marketing companies exist in Puntland, Waaiel and Wanaag, but they face and report a number of operational problems (Nori, 2010).

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