# Somali ethnoveterinary medicine and private animal health services: Can old and new systems work together?

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## Introduction

The Somali people are one of the largest ethnic groups in the Horn of Africa, occupying Somalia, south-east Ethiopia, and parts of northern Kenya and Djibouti. The Somali economy and culture is very closely related to livestock production and hence livestock populations are substantial. Within the African continent, Somalia alone was estimated to possess 43% of the camels, 10% of the goats, 5% of the sheep, and 2% of the cattle while accounting for only 0.83% of the human population (Janzen 1993). Due to the arid and semi-arid climate of Somali areas, most livestock are reared using pastoral production systems based on mixed herding. At household level, the pastoral food economy is characterised by high milk consumption and the sale or exchange of small ruminants for grain (Abdullahi 1993a, Holt and Lawrence 1991). The latter activity is the basis for a well-established livestock export market which ships live animals to the Gulf States (Janzen 1986, Reusse 1982). Recent surveys valued livestock exports from the northern Somali ports of Berbera and Bossaso at $12.5 million (Stockton and Chema 1995).

In common with many other African countries, economic and structural reform of veterinary services is occurring in Somalia, Kenya, and Ethiopia, albeit in varying political contexts. This paper discusses Somali ethnoveterinary medicine in relation to emerging private veterinary services and market-orientated changes to livestock production systems in Somali areas. The paper uses the term ‘private veterinary services’ to describe private veterinary pharmacies, clinics or drug importers whose activities are based on the use of modern pharmaceuticals. Although traditional healers are also private operators, the paper considers this indigenous service to be one component of ethnoveterinary practice.

## Features of western-style veterinary services in Somali-occupied areas

Somali pastoralists currently occupy countries where veterinary privatisation programmes are underway. The extent to which central government supports these programmes varies as does the capacity of government to oversee the privatisation process and undertake under public-sector animal health activities. While Somalia is in the unique position of having no recognisable government and hence little option for delivery systems other than private systems, both Ethiopia and Kenya have well-established government veterinary services which are gradually redefining their role as

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part of nationwide privatisation programmes. Although the current state of veterinary services varies between these three countries, some common features are as follows:

- From the pre-colonial era to the present day, government veterinary services in Somali pastoralist areas have been limited for reasons including resource constraints, logistical problems, and cultural and political bias.
- Both ongoing veterinary privatisation programmes and previous aid-related support to animal health services have focussed on the transfer of western-style services to an African setting.
- A rare deviation from the western approach has been the introduction of community-based animal health workers[4] in an attempt to provide a basic service to remote pastoralist areas and improve disease surveillance.

## Somali ethnoveterinary medicine

Information on Somali ethnoveterinary practices has been documented since at least 1927 when Leese referred to camel diseases in the Somaliland Protectorate. Later, work by Hunt (1951), Mares (1951, 1954a and b), and Peck (1939, 1940) and included descriptions of plant remedies, traditional vaccination, cautery, use of broths, and use of salt in the form of salt bushes, salty wells, and salt-rich soils. Mares also provided an extensive list of Somali names for livestock diseases and parasites. More recent accounts of Somali ethnoveterinary practice show considerable agreement with the earlier work and even 40 years after the publication of Mares work, herders in northern Somalia were still using soups, cautery, and medicinal plants (Catley and Mohammed 1996). A brief review of the literature indicates common terminology for some livestock diseases throughout Somali-occupied areas. For example, the words *gendhi*, *dhukaan*, *caal*, *cadho* and *cambaar* are very widely used by Somali herders from north-west Somalia to northern Kenya. Accounts of Somali ethnoveterinary practice are summarised in Appendix 1 to this paper.

## Ethnoveterinary medicine and modern veterinary medicine

Although Somali ethnoveterinary knowledge has been regularly documented during the last 70 years, few of the recent or on-going animal health programmes in Somali areas have attempted to incorporate indigenous knowledge into modern systems of veterinary service delivery. Although it might be argued that the Somali pastoral economy has developed with limited access to western pharmaceuticals, options for complementing western systems with traditional systems have tended to be overlooked.

In part, the need for aid programmes to deliver western drugs and vaccines might be related to the immediate post-war environment in Somalia and south-east Ethiopia. In emergency and relief situations, aid agencies may need to provide material inputs in order to establish good relations with local communities and ensure their own security.

[4] Also called 'nomadic animal health auxiliaries' (GTZ), 'daryelles' (Oxfam), and 'paravets' or 'primary veterinary assistants' (ActionAid).

Not surprisingly, elders and warlords tend to request supplies of modern pharmaceuticals from these agencies rather than trials on the efficacy local plant remedies. However, as projects become better established there may be opportunities to understand local perceptions of the value and use of traditional systems in relation to modern systems.

The ActionAid Animal Health Programme in Somaliland in northern Somalia began in 1992 and was based on a network of 30 primary veterinary assistants (PVAs). The PVAs received training in the diagnosis and treatment of locally prioritised diseases and were supplied with modern veterinary medicines for sale at subsidised rates. Later stages of the programme involved support to ex-government veterinary personnel in order to assist them to open private veterinary pharmacies (Catley 1996). From the beginning, work with pastoralists included the documentation of local terminology for livestock diseases and information on indigenous treatments (Catley and Mohammed 1995, 1996).

In 1994 ActionAid used a soft systems methodology to evaluate the animal health programme. The evaluation included scoring of treatment strategies 'before' and 'after' ActionAid's interventions. A summarised account of the scoring process is shown in Table 1 and indicates that in the programme area, ethnoveterinary practice declined as herders' use of PVAs and private pharmacies increased. The review report noted that herders feared the erosion of their traditional knowledge and loss of traditional medicines (ActionAid 1994).

**Table 1.** Summated scores of herders' treatment strategies 'before' and 'after' the ActionAid Animal Health Programme.[1]

| Location | Ethnoveterinary practice | | Animal health service introduced by programme | |
|---|---|---|---|---|
| | **Indigenous medicine** | **Religious healing** | **Primary veterinary assistants** | **Private veterinary pharmacies** |
| | **before/after** | **before/after** | **before/after** | **before/after** |
| Yube | 130/82 | 76/44 | 0/248 | 0/248 |
| Jidali 1 (male informants) | 123/82 | 83/47 | 0/233 | 0/233 |
| Jidali 1 (female informants) | 118/81 | ns[2] | ns | ns |
| Jidali 2 | 156/131 | ns | ns | 65/175 |

[1] The numbers in the table are intended to show trends rather than precise quantities. The scoring process required informants to score treatment strategies for different diseases from 0 to 10. The scores from numerous diseases affecting different livestock types have been summated by the authors for the sake of brevity. Readers are advised to consult the ActionAid report (ActionAid 1994) for more detailed information.

[2] ns = not scored.

A more recent NGO animal health project in south-east Ethiopia worked with local veterinary authorities to understand the options for improving veterinary service delivery. During the early stages of the project, workshops were conducted with various stakeholders including livestock owners, community elders, religious leaders, women, traditional healers, livestock traders, private veterinary drug vendors, and government veterinary personnel (Save the Children 1997). Stakeholder groups provided information on existing strategies for treating sick livestock and highlighted the importance of religious healing and traditional medicine (Table 2).

**Table 2.** Relative importance of current options for treating livestock among stakeholder groups in the Somali National Regional State, Ethiopia.

| **Option for treating livestock** | **Ranking of options by stakeholder groups** | | | | | |
|---|---|---|---|---|---|---|
| | **Women** | | **Livestock herders and traditional healers** | | **Livestock traders** | |
| | **Jijiga & Degehabur zones** | **Fik & Shinile zones** | **Jijiga & Degehabur zones** | **Fik & Shinile zones** | **Jijiga & Degehabur zones** | **Fik & Shinile zones** |
| Use of koran | 1st | 1st | 1st | 1st | nm[1] | nm |
| Traditional methods | 3rd | 2nd | 2nd | 2nd | 2nd | nm |
| Private drug sellers | 2nd | 3rd | 4th | 4th | 1st | 1st |
| Government service | nm | nm | 3rd | 3rd | 3rd | 2nd |

[1] nm = not mentioned or ranked by informants. Traditional methods include plant-based medicines, cautery, and soups/broths.

Further discussion indicated that although indigenous methods were very important, people also recognised that for many diseases, modern drugs were the most effective treatments. Even traditional healers noted the limitations of traditional veterinary practice and stated that:

> "*At this time people who have traditional knowledge may not tell other people because if their advice or treatment is unsuccessful, it may cause a quarrel.*"

> "*Nowadays people use traditional methods less because they are always seeking the easy option. Also, some plants are difficult to find and some are no longer available because of changes in climate and vegetation.*"

In one workshop, traditional healers were asked to consider the different options for treating livestock and decide which of these options should be developed or improved. The results of this discussion are summarised in Table 3 and show a strong preference for private services through pharmacies or clinics.

**Table 3.** Which option for treating sick livestock should be improved? Results of six traditional healers doing a proportional piling exercise with stones.

| Option | Score (stones) |
|---|---|
| Koran | 0 |
| Traditional methods | 0 |
| Government service | 15 |
| Private pharmacies/clinics | 79 |
| **Total** | **94** |

The workshop facilitators were familiar with the ActionAid programme evaluation in which people expressed concerns over the loss of traditional knowledge, Therefore, the traditional healers in the stakeholder workshop were asked to consider what might happen if a strong private and modern veterinary service developed and traditional knowledge and skills were lost. Their answers were as follows:

> "*If the modern drugs prove to be more effective than the traditional ways then it doesn't matter if the traditional knowledge is lost. We will change and will benefit from the new system.*"

> "*We can manage the preservation of the traditional knowledge. Every area has people who know the traditional medicines and these people pass their knowledge to their children -- the knowledge will not disappear. There is a medicinal plant on the ground right in front of us -- can you see it? You do not know it but everyone of us knows it even if we choose not to mention it to each other.*"

> "*The traditional skills will always be with us because some diseases can only be treated by traditional methods. For example, the disease* gudaan *(twisted neck syndrome) in camels can only be successfully treated by our method of burning the neck of the affected animal. Other diseases which can only be treated by traditional methods are* gidir, mull, garabayro *and* dhaf shalaalo."

## Trends in livestock management and ecological change in Somali areas

Much of the literature on Somali ethnoveterinary medicine refers to traditional pastoralism and relates livestock husbandry to specific grazing areas and a range of plant, water, and mineral resources. The full use of indigenous knowledge requires access to both a diverse range of medicinal plants and graze or browse species. Traditional Somali pastoralism is based on mixed herds and a preference for camels above other livestock types. However, the ethnoveterinary literature should not be viewed in isolation. For many years there have been reports of changes in Somali pastoralism linked to increasing human and livestock populations, increasing water points, increasing sedenterisation, and a shift towards a market-orientated rather than a subsistence economy.

Working with a veterinary team in Hargeisa in the early 1970s, Edelsten noted human sedenterisation around boreholes and related higher stock density and livestock population to increased incidence of diseases such as haemonchosis, streptothricosis, footrot, and tick infestation (Edelsten 1994). New settlements were also discussed by Janzen (1986) and were related to the profits offered by the livestock export trade and investments in water supply for livestock. It was suggested that commercialisation had enabled more affluent herders to appropriate prime grazing land and that herd structures had altered in response to the strong demand for sheep and goats in the Saudi markets. Further evidence of change was provided by work in the Bay region of Somalia (Al-Najim 1991) and working with GTZ in the central rangelands (Abdullahi 1993b).

In 1996 Oxfam UK/Ireland and the Department of Livestock Production in Wajir District, Kenya, conducted a study to investigate the effects of increasing numbers of water points and settlements on Somali pastoralism (Department of Livestock Production/Oxfam UK&I 1996). The study used participatory appraisal methods in seven sites followed up by interviews with pastoralists. This work demonstrated dramatic increases in water points and human settlements in Wajir District compared with the situation in the 1940s. Water points increased from four to 24 and human settlements increased from four to 45. One effect of these changes was an alteration in dry season/wet season grazing patterns so that distinct seasonal grazing areas were no longer distinguishable when compared with the situation in the 1940s. At the time of the study, the former wet and dry season areas tended to be used throughout the year.

Changes in grazing patterns and increases in livestock populations were investigated in more detail with reference to fodder availability. Table 4 is an example of the type of data which was collected. It details 10 grass species which were considered by pastoralists to have shown serious decline in availability during the previous 25 years. Regarding ethnoveterinary remedies, these findings are of interest because changes in flora might affect the distribution and availability of medicinal plants. Table 4 indicates that the grass species *Chrysopogon plumulosus* (*dareemo*) was one species which was thought to have shown a marked decline in availability. This plant is well-known as a styptic to control haemorrhage from wounds and during castration of livestock (Catley and Mohammed 1996, Mares 1954b).

In addition to studying grass species, information was also collected on 152 browse species. Species showing serious decline included plants from the genera *Barleria, Blepharispermum, Ipomoea, Indigofera*, and *Cucumis* -- genera which also feature in recent reports on Somali ethnoveterinary practice (Catley et al. 1996). Throughout the survey area pastoralists reported declining animal health since the 1940s despite the wider availability of modern veterinary services. The Wajir survey also included details of changes in the species composition of pastoral herds, the most notable of which was a tendency for camel herders to diversify into keeping cattle. This change was associated with increased water points and high market prices for cattle.

**Table 4.** Grass species showing serious decline in Wajir District, northern Kenya, 1970-1996.

| Grass species | | Scoring of availability of species in 1970 versus 1996 according to location[1] | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Botanical name** | **Somali name** | **Khorof Harar** | **Wajir Bor** | **Dam-bas** | **Buna** | **Griftu** | **Aber-kore** | **Biya-madhow** |
| *Chrysopogon plumosus* | *dareema* | 5-2 | 4-3 | 5-2 | 5-2 | 5-2 | 5-2 | 5-2 |
| *Bracharia leerisodes* | *jeebin* | 6-1 | 3-2 | 5-2 | 5-2 | 2-2 | 4-3 | 4-2 |
| *Sporobolus helvolus* | *jarba* | 2-1 | 5-2 | 5-2 | 6-1 | 4-3 | 5-2 | 4-1 |
| *Leptthrium senagalense* | *rerma* | 5-2 | 5-2 | 5-2 | 5-2 | 4-2 | 2-1 | 2-1 |
| *Aristida stonnostachya* | *sheekshel* | 7-0 | - | 2-2 | 3-2 | 2-1 | - | 2-1 |
| *Chloris virgata* | *halfa* | 7-0 | - | 5-2 | 5-2 | 5-2 | 2-1 | - |
| *Aristada sp.* | *bila* | 7-0 | 4-2 | - | 5-2 | 5-2 | 3-3 | 3-2 |
| *Leptochloa obtusifora* | *humbasib* | 5-2 | 5-2 | - | 2-1 | - | - | 5-2 |
| *Dactyloctenium aegyptium* | *aus danan* | - | - | 6-1 | 3-1 | 4-3 | 2-1 | 4-3 |
| *Entropogon macrostachys* | *aus gudud* | 5-2 | - | 4-3 | - | 2-1 | 2-1 | 2-1 |

[1] The 'before' and 'after' scoring used up to seven counters which were selected and divided by the informants.

A similar study to that outlined above was also conducted in south-east Ethiopia. Again, marked increases in water points were described along with changes in grazing patterns, increased sedenterisation, and increased human and livestock populations (Jama Suguule and Walker 1997). Perhaps the most important finding of this study was that Somali communities were already recognising that too many water points for livestock caused problems. In some locations, inter-clan contracts or '*xeer*' had been agreed two or three years previously in order to limit the construction of new water points and human settlements in important grazing areas. The '*xeer*' had been negotiated and agreed in the absence of government, projects, or NGOs.

## Discussion

This paper has shown that Somali pastoralists possess very detailed ethnoveterinary knowledge but while traditional methods are still widely used, herders are also aware of the benefits of modern medicines. One NGO animal health programme in Somaliland in northern Somalia found that the introduction of private veterinary pharmacies was welcomed by pastoralists although they were also worried about the loss of their traditional skills. Another NGO programme in south-east Ethiopia highlighted the importance of ethnoveterinary practice in the absence of an effective modern service, though it also demonstrated strong support for private pharmacies.

The paper has also attempted to relate ethnoveterinary practice to changes in Somali pastoralism and has hinted at some of the links between livestock management, ecological change, and ethnoveterinary medicine. When rangeland flora and access to that flora alters, so too will the use of traditional grazing strategies and use of medicinal plants. Reduced mobility of stock and increased stock density is likely to increase the incidence of some diseases, thereby affecting the relevance of some traditional methods of disease treatment or control.

Regarding trends in livestock holdings and management in Somali areas, the authors have presented information from two short studies conducted in northern Kenya and south-east Ethiopia. While it is not intended that the results of these studies should be extrapolated to other Somali areas, the findings are supported by other research. In particular, a study in the Bay Region of Somalia described changes in herd composition in response to market opportunities (Al-Najim 1991). The complex relationships outlined in the paper indicate that a holistic approach to pastoral development and animal health is required in Somali areas. After six years in the central rangelands of Somalia, GTZ noted that:

> "*.....interdisciplinary research has to be extended......The extensive capability of nomadic herdsmen with respect to breeding, keeping and caring for livestock as well as their knowledge of the natural environment, should be utilised in the planning and implementation of projects*" (Janzen et al. 1993).

Regarding changes to traditional pastoralism, work in south-east Ethiopia has indicated that communities are already beginning to recognise the problems associated with increased water points, sedenterisation, and private access to land, and are taking action to solve these problems (Jama Suguule and Walker 1997). Such local action in the absence of outside interventions could be highly relevant to pastoral development in other Somali-occupied areas.

When considering private sector services in Somali areas, there are numerous examples of private, indigenous systems which operated before the recent 'privatisation' focus of major aid donors. Traditional koranic teachers received payment in livestock, water was purchased from private water sources and traditional healers acted as private individuals. News of 'privatisation' is now a regular feature of local and international radio news to which many people in Somalia have easy access. In terms of veterinary service provision, private community to service provider links have been advocated in the context of animal health service delivery in pastoral areas (Leyland 1997). In these systems, it is suggested that private veterinarians could enter into contracts with communities for the provision of veterinary medicines and vaccines. Indigenous treatments and advice could be a feature of these systems.

Looking further afield to other pastoral areas of the world, 'privatisation' features with increasing regularity in the development and pastoralist literature. As pastoralists become more market-orientated and less isolated from national and international economies, ethnoveterinary research and development will need to understand how indigenous knowledge responds to economic and ecological change.

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# Appendix 1. Reports and published papers which include information on Somali ethnoveterinary medicine

| Author(s) | Information on ethnoveterinary medicine |
|---|---|
| Abdurahman and Bornstein (1991) | Includes names for camel diseases and brief reference to traditional healing. |
| Anon. (1971) | Report includes Somali names for priority diseases of cattle and sheep in Jijiga area, south-east Ethiopia. |
| Catley and Ahmed Aden (1996) | Tick ecology and tick-associated health problems in Sanaag region, 'Somaliland'. |
| Catley and Mohammed (1995, 1996) | Somali names for livestock diseases and parasites, and indigenous disease control and treatment in Sanaag region, northern Somalia/ 'Somaliland'. |
| Catley et al. (1996) | Lists 136 plants used to treat livestock diseases in the Somali National Regional State, south-east Ethiopia. |
| Dioli et al. (1992), Dioli and Stimmelmayr (1992) | Detailed illustrated accounts of fostering methods and other aspects of camel management. Some Somali names for camel diseases. |
| Edelsten (1994) | Information on traditional husbandry and disease names used in north-west Somalia. Condensed report of the British Veterinary Team to 1972. |
| Elmi (1989) | Paper focusing on traditional camel husbandry practised in Ceeldheer district, central Somalia. Relates grazing management to tick control. |
| Guillamet (1972) | Includes ethnoveterinary data from the Wabi Shebelle valley in Ethiopia. |
| Hadrill (1993) | Includes names for livestock diseases and parasites, and information on traditional treatments. |
| Heuer (1993) | Includes a list of names for diseases of small ruminants in the central rangelands of Somalia. |
| Hunt (1951) | Includes information on livestock grazing practices and the distribution of 'salt bushes' in relation to camel husbandry. |
| Hussein (1984) | Traditional camel husbandry including breeding management, nutrition and castration. |
| Leese (1927) | Includes notes on camel diseases in the former Somaliland Protectorate. |
| Mares (1951) | Detailed description of traditional vaccination of cattle against contagious bovine pleuropneumonia in the Somaliland Protectorate. |
| Mares (1954a and b) | Notes on traditional husbandry including grazing and breeding. Extensive list of Somali names for livestock diseases and parasites; descriptions of treatments including cautery, soups and plant remedies in the Somaliland Protectorate. |
| Marx (1984), Marx and Wiegand (1987) | Discussion of Somali ethnoveterinary practices including tick control in relation to Q-fever and the use of cautery to treat suspect chlamydiosis. |
| Mohamed and Hussein (1996) | Discusses various aspects of traditional camel health and management. |
| Nur (1984) | Detailed account of traditional camel breeding. |
| Peck (1939, 1940) | Role of salt bushes in camel management; traditional treatment of ulcerative stomatitis in camels. |
| Schinkel (1970) | Includes information on breeding management and traditional remedies. |
| VetAid (1992) | Situation analysis report which includes livestock disease names and some plant remedies used in north-east Somalia. |