veterinary assistance

somalia

Period: May 1992 - April 1993

Sangeeta KOENIG

4th May 1992

TABLE OF CONTENTS

..2/..

Annex 1 - Livestock Exports

Annex 2 - Livestock Distribution in Somalia

Annex 3 - Work Plan, Vet Programme 1992/93

1. INTRODUCTION

1.1 ECONOMIC SIGNIFICANCE OF THE LIVESTOCK SECTOR IN SOMALIA

In Somalia, the highest proportion of the population is engaged in mobile livestock keeping. About 70% of the population is nomadic and they rely entirely for their day to day survival on their animals (Somra report 1991).

Livestock provides employment for an estimated 80% of the population.

Livestock exports represent the main source of foreign exchange for Somalia, with annual revenue ranging between 70 and 90 percent of total foreign exchange (Janzen 1986c:43).

Statistics shows goats and sheep are Somalias main livestock exports. Camel sales have fallen since 1980 and the May 1983 Saudi Arabia ban on Somali cattle caused a considerable decrease in cattle exports (see Fig.1).

1.2 LIVESTOCK POPULATION AND DISTRIBUTION IN SOMALIA

According to FAO estimates of 1989, Somalia had about 45 million heads of livestock 20.3 million goats, 13.8 million sheep, 6.7 million camels and 5.2 million cattle. In addition there are also about 25,000 donkeys and 24,000 mules.

The distribution of livestock within Somalia shows a dominance of cattle in the South, especially in the middle and lower Shabelle areas. The rest of the country has large population of sheep, goat and came population. (See Table 2.). This distribution is influenced by the rainfall, availability of water, soil condition and type of vegetation in the region - the middle and lower Jubba region having a black clay soil which is

very slippery after rainfall and on which camels in particular slip and injure themselves. Camels are therefore grazed in areas with less rainfall and sandy soils. The Jubba and Shabelle river valleys are also home to Tsetse fly and Tabanids which cause trypanosomiasis to which the camel is highly susceptible. Cattle are grazed in areas where water is readily available, areas of high rainfall or around permanent water points. The sheep and goats fall in between the camels and the cattle in their water requirements. They are predominant, along with the camels, in the Northern and Central part of Somalia, decreasing in the South. The vegetation also influences the distribution. The bush and tree vegetation is mainly browsed by camels and goats whereas the grasses form the main fodder supply for cattle and sheep.

2. PROBLEMS OF THE LIVESTOCK SECTOR

The main problem of the livestock sector is the reduction in herd size. The reasons for the decline are:

2.1 INCREASED DOMESTIC CONSUMPTION resulting from displaced urban dwellers joining their nomadic relatives where they could at least survive by living off the livestock.

2.2 LOSSES DUE TO THEFT, SHOOTING AND MINE ACCIDENTS (NORTHERN SOMALIA)

2.3 SEVERE DROUGHT/LACK OF WATERING PLACES IN THE DRY SEASON

Most of the pumps and generators at boreholes have been looted during the war. This creates a greater concentration around the few wells which do function. As too many animals are dependant on the same well, the watering interval of each herd increases. This is particularly disastrous for the cattle as they cannot tolerate a watering interval of more than 3 days. This is further worsened by the fact that the cattle can only graze at a radius of 1 day distance from the

watering point whereas goats and sheep which have a watering interval of 7 days can move further out and camels with a watering interval of 15 days in the dry can go very far in search of grazing. This lack of grazing and severe crowding around the wells has decimated about 30-50% of the cattle on the Liboi/Doblai/Afmadu/Banta axis in Southern Somalia. In Saakow/Salagle region, the drought was particularly severe with people losing all their animals and therefore all means of livelihood and having to come to Kenya (Liboi) to become refugees.

In this connection, it must be also be mentioned that the 1992 drought was equally if not more severe on the Kenyan side of the border with huge losses in cattle population in the Kenyan nomads.

2.4 THE BREAKDOWN OF VETERINARY SERVICES LEADING TO LOSSES DUE TO DISEASE.

Before the war, all the districts were supplied with veterinary medicines which were sold at subsidized rates to the nomads. Vaccination campaigns were also sporadically carried out against major diseases. Animal health clinics were available in the district headquarter. But the most important were probably the laboratories which would conduct tests on animals meant for export.

Since the war, these structures no longer exist and the nomads no longer have a source from where they can buy drugs at rates they could afford.
The most important disease in the various livestock species are:

1) In Camels

Viral Diseases : Camel Pox

Bacterial Diseases: Pasteurellosis, Anthrax. Brucellosis, Leptospirosis, Contagious skin necrosis.

Protozoal diseases: Trypanosomiasis, Theileriasis, Anaplasmosis

Helminthic disease are very common. Ticks infestations are severe spread the protozoal diseases. Skin diseases (scabies) caused by mites is very common.

2) Cattle

Viral diseases: Rinderpest, Contagious Bovine Pleuropneumonia (CBPP) Foot and Mouth Disease.

Bacterial diseases: Anthrax, Haemorrhagic Septicaemia, Brucellosis.

Protozoal diseases: Trypanosomiasis, Babesiosis, Theileriasis, Anaplasmiosis.

Tick infestation reduces the health of the animals and spreads the protozoal diseases. Endoparasites (worms) are not as bad a problem in cattle as in sheep, goat and camels. Clinical signs seen only in young animals.

3) Sheep/Goat

Viral Diseases: Contagious Caprine Pleuropneumonia (CCPP)
Bacterial diseases: Brucellosis, Anthrax.
Protozoal Diseases: Trypanosomiasis.

Sheep and goat are very susceptible to endoparasites of which the Trichostronglyidae and the Strongyloides sp. cause the most important losses.

(Source GTZ Report 19 September 1990
GTZ Report 25 December 1990
GTZ Report 13 1990)

2.5 THE ECONOMIC SIGNIFICANCE OF A REDUCTION IN HERD SIZE

For the majority of the nomadic families, providing for subsistence needs is the main goal. Milk, ghee and meat are the major goods produced for family consumption.

The agropastoralist in addition grows sorghum, sometimes maize, cowpeas and sorghum. Products like honey and wild fruit can be added to the daily food supply. Any surplus is sold on the market or in remote areas, bartered for other goods. The nomads needs to sell his animals in order to have cash for almost all aspects of life:

- Purchase of basic foodstuffs, sugar, tea torches batteries, etc.

- Purchase of medicine for both people and livestock.

- Payment of food while staying in settlements and water points.

- Purchase of crop residues for livestock fodder in the dry season.

- Payment for watering charges of livestock at private shallow wells, boreholes and water catchments.

The rates of exchange for sheep/goat against a bag of rice are at the moment very unfavourable being between 2-4 sheep/goat for 1 bag of rice. According to the Vet Aid reassessment mission March 1992 as the herd size falls, there is very little insurance against disaster and below seventy heads of sheep/goats it becomes impossible to support a family with surplus stock to sell to buy grain etc to meet the family's food requirements.

3. THE NECESSITY OF AN ICRC INTERVENTION IN THE LIVESTOCK SECTOR

As explained earlier, the livestock sector is the backbone of the Somali economy. At present and in the recent past, herds have been and are still forced to support formerly urban based members of their family. The herd size has dropped, trade of livestock is more difficult, food is very expensive and the herders purchasing power is reduced. In addition, the shortage of water and fodder has been a major stress on the nomads decimating the cattle population in some areas by 30-50%. Though disease is a secondary problem compared to the drought, rainfall is not controllable and range management schemes are difficult and longer term interventions. Veterinary medicines enable rapid resolution of a disease problem.

Veterinary intervention is now necessary and justifiable to prevent more pastoralists from owning less than the minimum number of sheep and goats (estimated at about 70 heads) to subsist.

4. SOME GUIDELINES FOR A VETERINARY PROGRAMME IN SOMALIA

- The programme should be considered as a relief effort rather than the rehabilitation of health of the country's health services.
- Given the uncertain security situation in Somalia, the programme should be designed with minimal equipment requirements (to reduce the likelihood of looting).
- The programme should be geared towards rapid results so that it would be of benefit even if an immediate withdrawal is necessary .
- Since the nomads have lost all confidence in past and present government authorities, the programme should be channelled directly at the village level. Such an approach was tried in North-West Somalia in Jan 1992 by ICRC and was found to be very successful. As a result, it is also planned by other agencies, (VSF/Action Nord Sud, SOMRA, Vet Aid).
- Since the need of veterinary assistance is large, the veterinary programme should limit its area of activity to absolute priorities.

5. PROPOSED VETERINARY PROGRAMME IN SOMALIA

Following the points given in Chapter 3 & 4:

The Veterinary Programme in Somalia should consist of the following components:-

a) Parasite Control for Internal and External

b) Vaccination Programme against major diseases

c) Trypanosomiasis treatment in cattle

d) Trypanosomiasis control in camels)

e) Support to major export centres with the most essential equipment and antigens (Brucella).

f) Monitoring and evaluation of current and on-going veterinary activities.

5.1 PARASITE CONTROL

Endo parasites (worms) and tickborne diseases have always been a major problem in Somalia.

Tickborne disease such as Nairobi Sheep Disease Anaplasmosis, Heartwater disease and Babesiosis together with endoparasites account for 56% of the total complaints regarding diseases in livestock (Somra Report 1990).

Helminthiasis (worms) is a major problem in young sheep, goats, cattle and camels. Trichostrongylidae and strongylidae are the main parasites infecting the livestock. In the surveys carried out by the ICRC veterinarians the most common complaint was of tick infestation and tickborne diseases and helminthiasis in camels, sheep and goat. Therefore parasite control should be a priority in any veterinary programme as internal and external parasites are the main constraint to livestock health and productivity.

Target Animals -Sheep and goats, camels. The sheep and goats at the moments, are the most important animals in Somalia. They are the chief buffer stock against disaster. Being small, they are more easily sold and exported. They also form the main part of the diet of the nomads. They most susceptible to endoparasites (worms) extoparasites (ticks). If sheep can be compared to cash in the hand, the camels are like money in the bank. The camels are a hardy breed, completely adapted to the rigours of the Somalian environment. They too suffer from a heavy worm load and heavy infestations from ticks.

5.1.1 ECTOPARASITIC TREATMENT

1) Drug of choice:

An investigation made by the GTZ on the efficacy of different acaricides under field conditions in Somalia, concluded that there is a build up of tick resistance towards acaricides of the Toxophene group. These are therefore to be avoided.

Due to lack of water, the drug of choice for the moment is Bayticol (Bayers). It is a flumethnin based acaricide with an easy pour-on application, with no known resistance in Africa.

Another cheaper acaricide with no known resistance is Triatix (Cooper's) Basic ingredient - Amitraz. It is however, available for use as a spray or a dip and should be used later in the year when water is again. available.

Time of Application - The acaricides should be distributed during or before the rainy season. Adult ticks breed in the rainy season and as one female tick can lay several thousands of eggs, the problem of tick control could be improved if the focus was on the control of adult ticks, ready to lay eggs in the rainy season. This would minimize the follow-up problems of larvae and nymphs and thus be a more effective and economic control method.

5.1.2. ENDO PARASITE TREATMENT

Drug of Choice:

The drug of choice should be a modern benzinidazole (eg oxfendazole, fenbendazole, albendazole) "Rintal" (Bayer) Active agent - Febental is both effective against both mature adults stages and larvae. In case of non-availability of Rintal, "Albendazole" (Dopharma) is a second choice. Many effective anthelminthics are readily available.

Period of Treatment - Helminth Infestation and resultant diarrhoea are more common in the rainy season particularly since survival of infective worm larvae in the pasture are favoured by the wet conditions. However, since animals are well nourished at this time, it causes less mortality.

However, towards the end of a long dry season, when animals are in poorest condition with lower resistance, a worm burden may cause more losses in stock. The best period would therefore be the beginning of the rainy season, followed by treatment of only the young stock in the middle of the rainy season.

5.1.3 EXTENT OF TREATMENT - Though most animals have a certain amount of worm load, they also develop certain resistance to them. But when the animal is under a food and water stress, towards the end of a long dry season a worm burden could develop into clinical helminthiasis. Therefore it is commendable to provide drugs for about 10% of the estimated population.

Similarly for the ectoparasites, it us not possible to treat every animal, therefore animals with heavy infestations are to be targeted. Later on in the season, when water is more available, use of cheaper acaricides in dips and sprays might give a more general coverage.

5.1.4 PARASITE CONTROL PROGRAM

REGION	TARGET NO OF CAMELS	TARGET NO SHEEP/GOAT
1) SOMALILAND	100,000	800,000
2) NUGAL	15,000	200,000
3) BARI	25,000	100,000
4) MUDUG	70,000	300,000
5) GALGADUUD	40,000	150,000
6) HIRAAN	40,000	100,000
7) MIDDLE SHABELE	20,000	80,000
8) LOWER SHABELLE	30,000	30,000
9) BAKOOL	20,000	30,000
10) BAY	40,000	30,000
11) GEDO	50,000	120,000
12) MIDDLE JUBBA	30,000	40,000
13) LOWER JUBBA	20,000	20,000
TOTAL	500,000	2,000,000

5.1.5 COST OF PROGRAMME

ECTOPARASITE TREATMENT

500,000 camels at USD 0.5/dose	=	USD 250,000
2000,000 sheep/goats at USD 0.14/dose	=	USD 280,000
		480,000

The whole operation is to be done twice a year.

Therefore cost of ectoparasite treatment = USD 960,000

ENDOPARASITE TREATMENT

500,000 camels at USD 0.5/dose	=	USD 250,000
2000,000 camels at USD 0.1/dose	=	USD 200,000

This operation is also to be done twice a year.

Therefore cost of endoparasite treatment	=	USD 900,000
Total Cost of Medication	=	USD 1,860,000

5.2 VACCINATIONS AGAINST MAJOR DISEASES (RINDERPEST)

In the cattle dominated areas of Kolbio and Afmadu, many of the nomads complained that Rinderpest was present in the region and was causing great losses in the young calves. (This was before the drought decimated 30-50% of the cattle in the region.) Reports of Rinderpest have also come from the Central Region and Baydhabo.

In the next two weeks blood samples of calves of 1 year of age which are not yet vaccinated will be taken and handed over to PARC to ascertain the presence of the virus. Only in case of confirmation, the following programme is proposed.

Somalia, Ethiopia and Kenya, according to the Pan African Rinderpest Campaign are supposed to be free of Rinderpest. Therefore, the presence of the virus will be a sensitive issue as it will be important to know from which country the disease spread into Somalia.

Since most of the cattle are concentrated in Southern Somalia (estimated population - 3 million) and more particularly in the Middle and Lower Jubba regions (estimated cattle population - 2 million) it will be relatively easy to reach a large number of cattle just by vaccinating along the Kolbio-Badhaade and the Doblai-Diif Afmadu axes. Vaccinations against other diseases may be done in case of confirmed outbreaks. Other diseases prevalent in the area are Anthrax, Black quarter, Foot and mouth Disease and Haemorrhagic Septicaemia in cattle.

PROPOSED RINDERPEST VACCINATION PROGRAMME - SOUTHERN SOMALIA

Region - Kolbio/Badhaade/Doblai/Afmadu/Hagar/Middle & Lower Jubba		
Target No. of Animals	:	500,000 animals or more
Period	:	September 1992 to February 1993
Cost of Programme	:	Purchase of Equipment - USD 50,000
		Purchase of Vaccine - USD 250,000

Purchase of Lab and Medical Items	-	USD 50,000
General Items and Services	-	USD 20,000
Expenses for Local Employees	-	USD 30,000
Total Cost of Programme	-	USD 400,000

(Most of the cold chain facilities could be used from the South Sudan Rinderpest Vaccination Programme, currently stored in Lokichoggio.)

5.3 TRYPANOSOMIASIS IN CAMELS

Trypanosomiasis is a very common disease of camels in Somalia. The main vectors of the disease are the Tabanus flies. The rate of infection of camels is directly related to the population of Tabanides. Infection mainly occurs during the months of April and May which is the only time the tabanides are present in large numbers. Shortly after the start of the rains, a sharp increase of the population occurs, and after the beginning of the dry season the number of the flies decreases rapidly.

Parasitological investigation was carried out by GTZ in 1990 to detect Trypanosoma spp in the bloodstream. The micro-haematocrit method was found to be the most sensitive test. This method identified 7.2% of camels as currently infected with trypanosomes of which 80.5% were infected with Trypanosoma evansi. Considering that Somalia has the world's largest dromedary population of around 6 million, the number of infected camels every year is around 500,000.

The drug of choice against Camel Trypanosomiasis (T.evansi) is Naganol. Since Naganol has to be administered intravenously, this programme will require experienced personnel.

The time of administration would be after the beginning of rains as the tabanide population increases to a maximum then and the rate of infection is also the highest.

Approximate cost of programme:-

500,000 dose of Naganol at the rate of USD 1/dose	:	USD 500,000
Purchase of equipment	:	USD 60,000
TOTAL		USD 560,000

5.4 TRYPANOSOMIASIS IN CATTLE

The trypanosoma is a protozoal parasite carried by the Tse-tse fly in the riverine areas. Some trypansoma species are also transmitted by other biting flies like the Tabanides in areas away from the river. Normally the nomads avoid areas where the tsetse fly prevails but due to interclannic problems and prolonged drought, the migration pattern has changed and the pastoralists are forced to graze more along the riverside where the cattle are subject to bites of the Tstse-fly or graze in the forests where the Tabanids also transit other species of Trypanosoma.

The severity of Trypanosomiasis varies with the susceptibility of the animal infected and the virulence of the Trypanosoma involved. The typical clinical signs are intermittent fever, anaemia, a tucked up abdomen, and weight loss. In very acute cases, the animal may die, but most cases in cattle have a chronic course causing productivity loss ie decreased milk yield, abortion, failure to conceive. Treating the cattle by the riverside before they leave for their rainy season migration or treating them after they return from their dry season migration from the river-side would help reduce the incidence of the disease.

TRYPANOSOMIASIS TREATMENT FOR CATTLE

	REGION:	TARGET NO OF CATTLE:
1)	MIDDLE JUBBA	25,000
2)	MIDDLE JUBA	75,000
3)	MIDDLE SHABELLE	25,000
4)	LOWER SHABELLE	25,000
	TOTAL	150,000 HEADS OF CATTLE

DRUG OF CHOICE

The drug of choice is BERENIL (HOECHST). Available in 1 dose packaging, its effectiveness is well known. Other effective drugs are Novidium and Samorin. The time of treatment would be after the rains as the population of the biting flies increases substantially during the rains and rate of infection is therefore higher.

COST OF PROGRAMME

150,000 Doses of BERENIL	
@ USD 0.7/DOSE	= USD 105,000
Distil Water for injection	
Syringes, needles etc	= USD 25,000
TOTAL	= USD 130,000

5.5 SUPPORT TO CURRENT EXPORT CENTRES

Sheep and goat exports form the major exports particularly in North East (Mijerthinia) and North West Somalia (Somaliland). At present, the export centres of Berbera and Bossasso are very active. A number of vets are concentrated in Berbera. They earn a living by screening sheep and goats for Brucellosis using the Rose Bengal Test.

The trader provides the antigen, needles and syringes. The antigen should be kept cool but this is not always possible and after the antigen is unusable when it comes to Berbera.

The vets charge SOS 1000/head if the antigen is brought by the trader and SOS 1500/head if the vets provide the antigen. The testing is done in very crude conditions.

This testing (though not the most reliable) is very important as on arrival in Saudi Arabia, a random testing is done and if one animal is positive, the whole consignment may be rejected. The trader then has to sell them at a less lucrative market (Yemen) before the animals die on the boat.

The ICRC could have a role to play here. It would mainly be to supply the vets with the Brucella antigen which has been kept

cool and is still in good condition when it arrives and other basic materials for the test plates, slides, pipettes since brucellosis screening provides the main source of income for the vets in Somaliland, an input in this field would ensure that the vets maintain an independent activity, would help in better screening of the animals and continue the exports which have to be encouraged to revive the economy of Somalia.

COST OF PROGRAMME

Antigen and basic testing equipment: USD 30,000

5.6. MONITORING AND EVALUATION OF CURRENT VETERINARY ACTIVITIES

A monitoring and auto-evaluation component will have to be incorporated into the programme.

For the Parasite Control Programme, a trial flock will be taken in each of the regions, before and after worm, larvae and egg counts will be done to check the efficacy of the endoparasitic drugs. Half body tick counts, a week after application of acaricide will check on the efficiency of the acaricides.

In addition, surveys will be conducted to find out the pasteralists + response to the drugs and the effect on the animals.

The trypanosomiasis control programmes would be easy to monitor as there will be a need for an expatriate field veterinarian to control the use of the drugs and to monitor the drugs.

The Rinderpest vaccination can be monitored by taking antibody titres before and after the vaccination by using the Eliza test PARC (Pan African Rinderpest campaign) the facilities in Nairobi and would help us out.

An auto-evaluation component (evaluation within the ICRC) will have to be developed within the frame of the programme.

This would be essential if the programme or parts of it was to be handed over to another organisation in the near future.

5.7 TOTAL COST OF EXTENSIVE VETERINARY

ACTION IN SOMALIA FOR ONE YEAR (COST OF LOGISTICS AND PERSONNEL NOT INCLUDED)

A)	Parasite Control Programme	USD	1,860,000
B)	Cattle Vaccination (Rinderpest)	USD	400,000
C)	Camel Trypanosomiasis Treatments	USD	560,000
D)	Cattle Trypanosomiasis Treatments	USD	130,000
E)	Support to Export Centres	USD	30,000
F)	Laboratory Cost for Monitoring and Control	USD	30,000
	TOTAL	USD	2,950,000

6. PERSONNEL REQUIREMENTS.

- In case, the programme can be applicable to all parts of Somalia and if all the activities can be carried out, there will be need for 3 expatriate personnel.

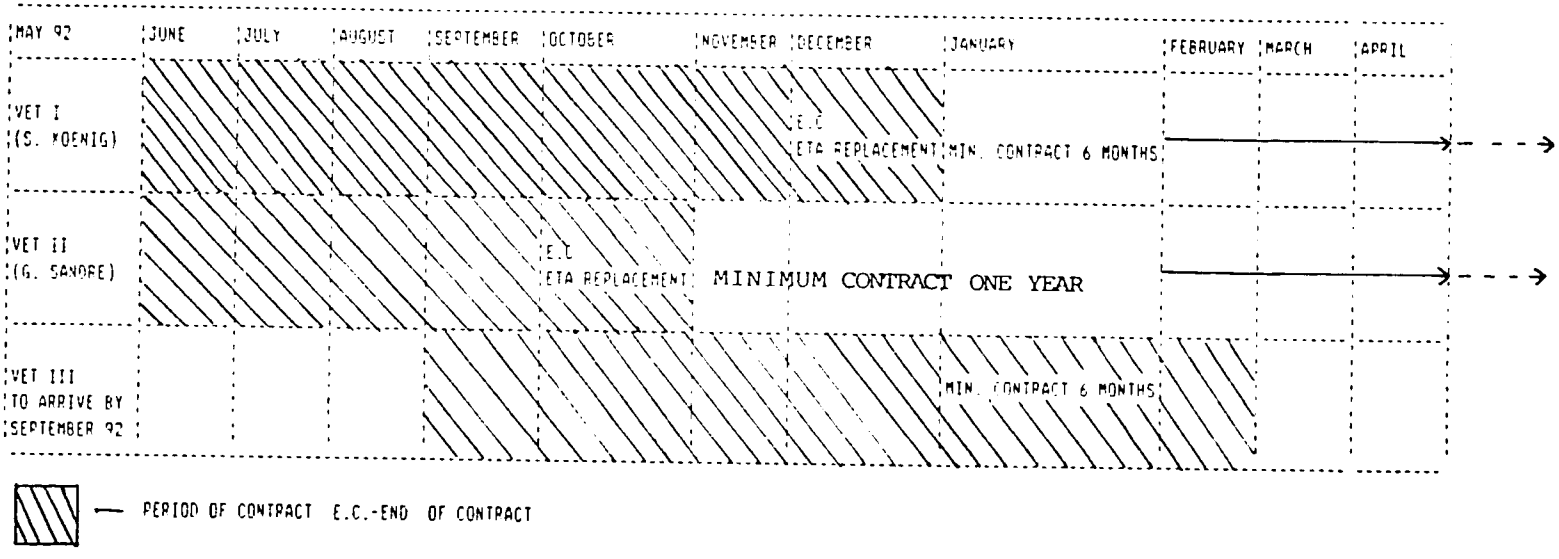
- If North-West Somalia (Somaliland) were to open up and create conditions conducive for veterinary operations, one vet. could be based in Berbera for actions in the area.

- A second veterinarian/experienced stockman will be necessary to conduct the vaccination programme in the Southern regions of Afmadu/Banta/Kolbio/Badhaade based probably in Liboi.

- A third veterinarian would be necessary to cover the activities in the North-East and Central Regions

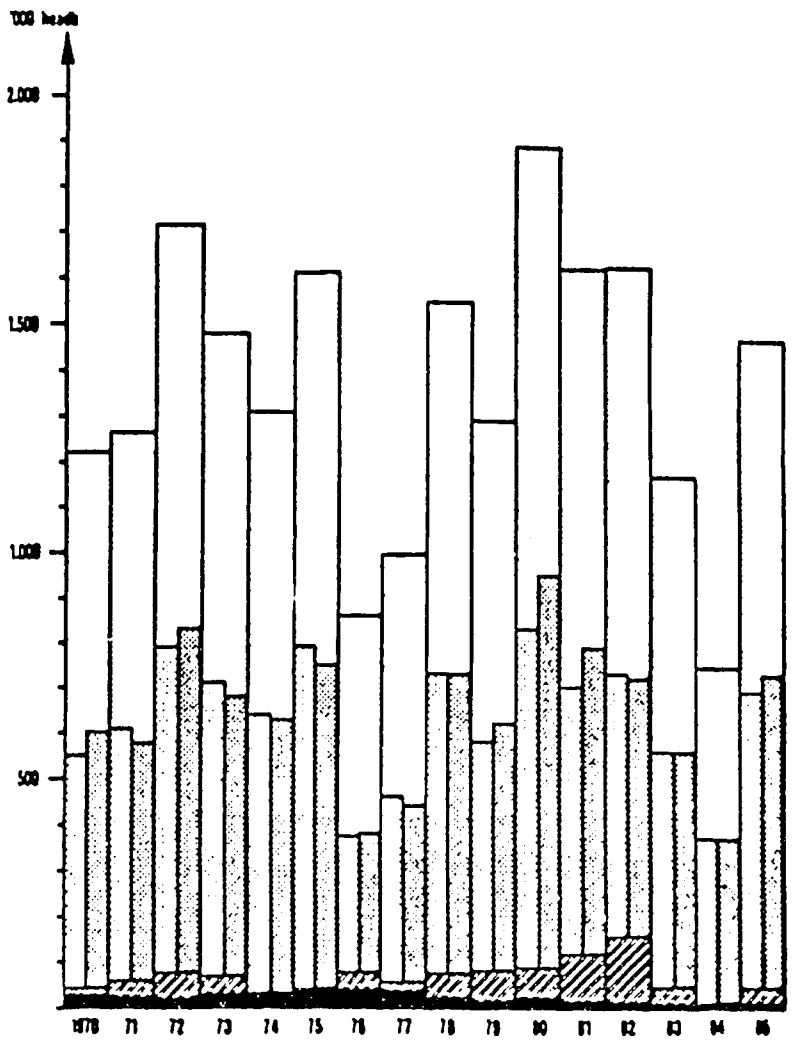
- Since the situation in the North-West (Somaliland is not so conducive for commencing veterinary activities, two expatriates are sufficient for the moment. However, if we were to commence the treatments against trypanosomiasis in camels, there would be again the need of a third veterinarian. The treatment requires an intravenous injection of Naganol and therefore professional supervision. This veterinarian would require experience or knowledge of working with camels.

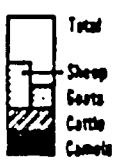
PERSONNEL REQUIREMENTS 1992/93



ANNEX 1

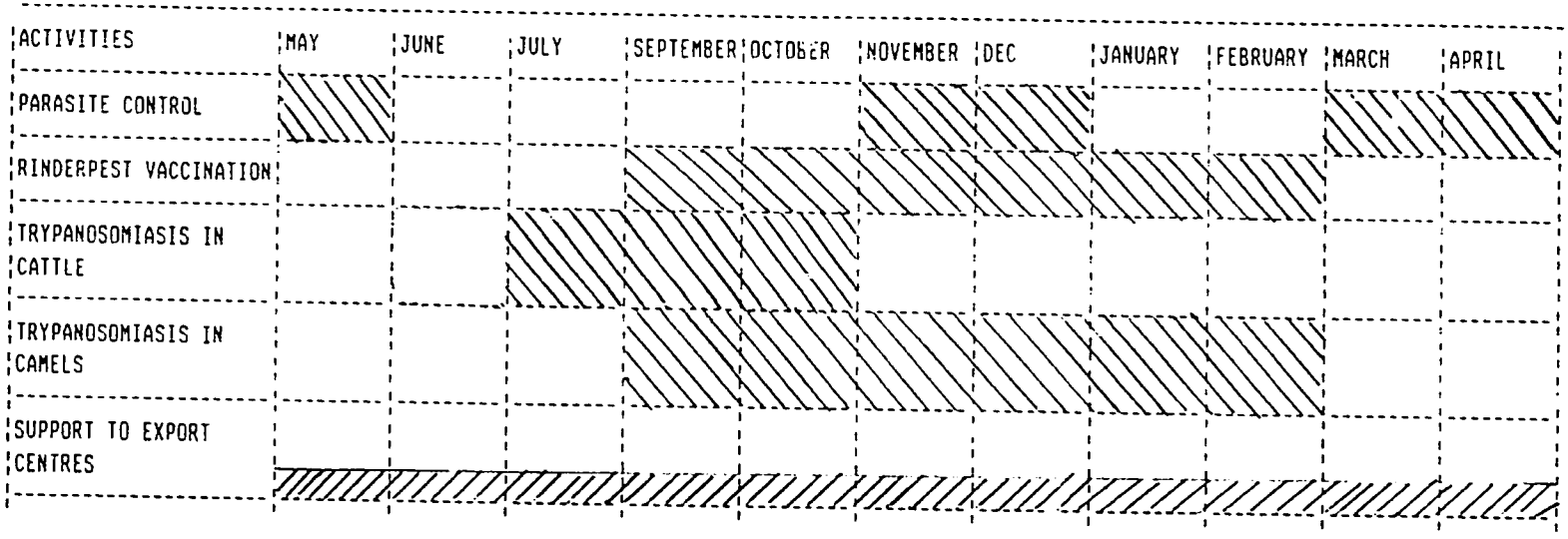
LIVESTOCK EXPORTS (1970 TO 1985)





Source: Dept. of Livestock, Marketing and Health/Woodlabs 1986

WORK PLAN - ICRC VET PROGRAMME
1992/93



Livestock Distribution in Somalia (1986)

REGIONS	CATTLE	CAMELS (in thoudands)	SHEEP	GOATS
Northern				
West Galbeed	164.34	680.06	2,671.30	2,719.20
Togdheer	49.87	359.10	1,091.10	1,072.06
Sanaag	83.90	230.05	1,809.82	835.50
Nugaal	13.60	173.94	265.34	2,636.11
Bari	17.00	269.33	1,647.99	769.00
Sub-Total	328.71	1,712.48	7,485.55	8,031.87
Central				
Mudug	385.37	842.78	1,351.77	3,452.70
Galgaduud	274.09	443.27	699.65	2,181.87
Hiraan	192.68	517.33	341.49	1,458.35
Sub-Total	852.14	1,803.38	2,392.91	7,092.92
Southern				
Middle Shabeelle	432.97	230.05	386.71	905.96
Lower Shabeelle	433.47	328.80	107.09	251.65
Benaadir	24.93	1.12	7.14	23.90
Bakool	113.34	215.46	94.00	344.77
Bay	289.02	406.24	65.44	241.59
Sub-Total	1,293.73	1,181.67	660.38	1,767.87
Trans-Jubba				
Gedo	598.45	879.81	594.94	912.26
Middle Jubba	414.84	246.84	29.75	905.97
Lower Jubba	975.89	249.13	83.29	159.80
Sub-Total	1989.76	1375.78	707.98	1978.02
National Total	4,463.76*	6,073.31	11,246.82	18,670.59

**The national total of cattle including the influx of cattle with the refugees in the late 1970s is estimated to be 5487.00. Source: MLFR 1/1/1987:18*