A PROGRAM OF ASSISTANCE FOR LIVESTOCK MARKETING IN SOMALIA

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PREFACE

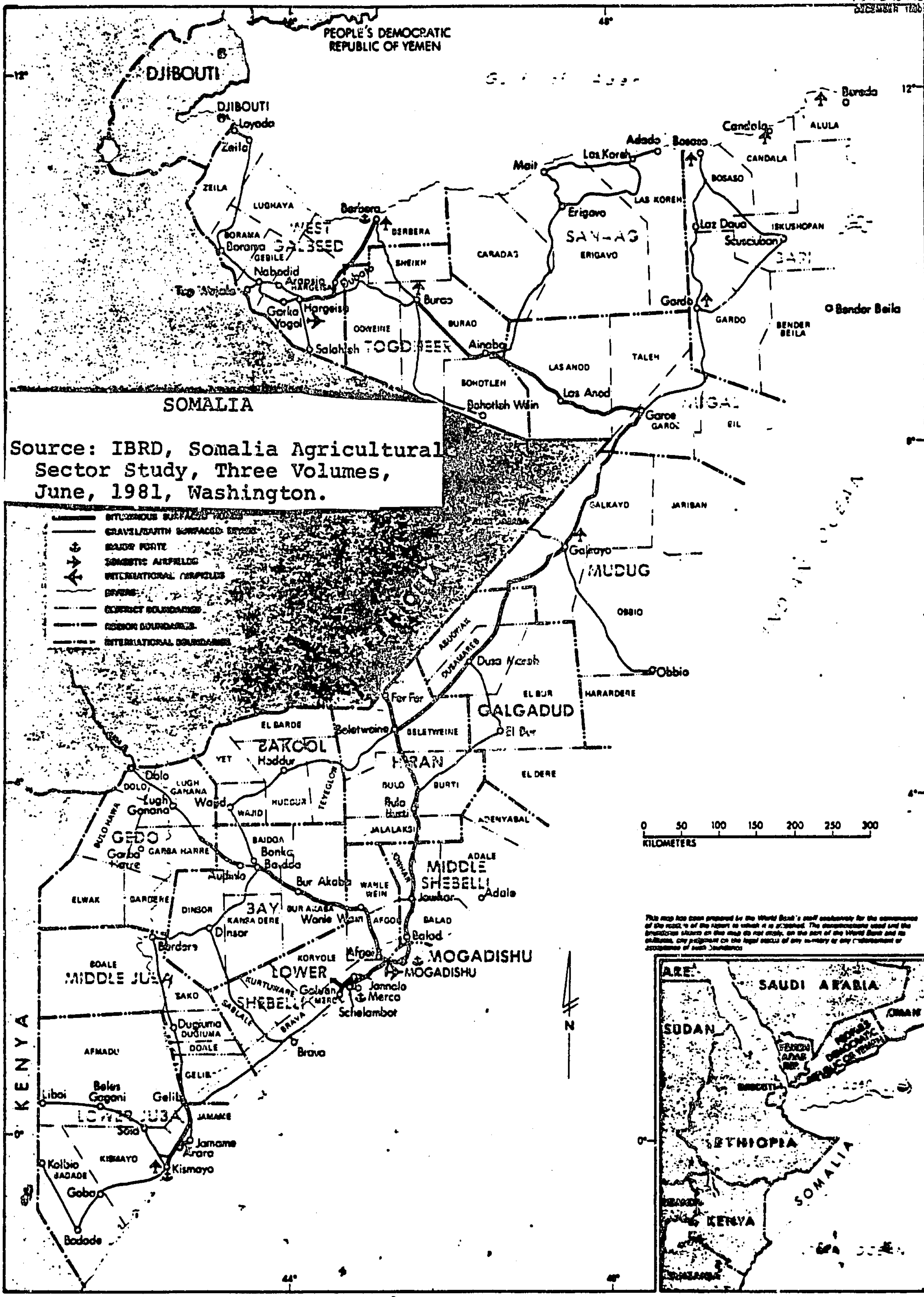
This report is a follow-up of an earlier study by Elliot Berg Associates, entitled Encouraging the Private Sector in Somalia. The earlier study stressed the importance of seeking private sector-oriented approaches to the development of the livestock sector. The present study attempts to push that approach forward.

It's one thing to urge the encouragement of the indigenous private sector (in Somalia or anywhere); it's another to discover feasible and concrete ways to do this. This program represents one effort to do so. Though many of the proposals are straightforward and reasonably familiar, some are new and have many ramifications throughout the private economy of Somalia.

The report is the result of a mission to Somalia comprised of Robert Pogson, Team Leader; Randall Thomas-Peterhans, Livestock Economist; Pamela Procella, D.V.N., USAID/Mogadishu veterinarian; Frank Procella, MLRF, USAID/Mogadishu; and Mahmud Abshir Mohamed, Research Assistant and Interpreter. The latter deserves special mention; without his insights and language facility, the mission could not have done its job.

Alexandria, VA.
September 1983

Elliot Berg



Source: IBRD, Somalia Agricultural Sector Study, Three Volumes, June, 1981, Washington.

I. INTRODUCTION

The Somali livestock industry has been the subject of a number of studies in recent years. In 1976, the Kuwait Fund for Arab Economic Development financed an intensive analysis executed by Hunting Technical Services Ltd. of the United Kingdom. This three-volume work is the most exhaustive analysis both of the overall problems on the industry and of project possibilities. The report, entitled Livestock Sector Review and Project Identification, covers, among other subjects, the economic background of the industry, livestock management systems, animal disease problems, infrastructure needs, the nature of livestock marketing and the export marketing system, and the prospects of livestock exports. It is an excellent background piece for anybody concerned with the future of the livestock industry in Somalia.

In 1978, the World Bank sent out to Somalia a livestock sector identification team.[1/] This was also an extensive operation though it did not delve so deeply as the Hunting study into some of the underlying problems of economics and marketing. The Bank study gives some general objectives for the development of the sector: increasing foreign exchange earnings; increasing the income of the herders;

1/ IBRD, Livestock Marketing Project Identification Mission, 1978, Main Report, (Washington, 1979).

increasing the nutrition of subsistance farmers. In the short term, they give priority to the improvement of the animal and livestock marketing services. In the medium term, they stress the need to develop a better information base through surveys, research and pilot projects. Long term strategy is extremely general and the listed programs include virtually all the activities of the sector. But with respect to livestock marketing, the specific recommendations of the Bank Agricultural Sector Survey are that livestock movement should be facilitated through provision of stock, water supplies and transport...: the management of quarantine and handling facilities should be improved...feed for market livestock (should be made available) especially during the voyage...market information should be made readily available to livestock traders and producers and communications infrastructure generally should be expanded.

In 1981, the Ministry of Planning also did a sector survey that concluded with a list of projects.[1/] In 1982, the USAID commissioned a study of livestock marketing, which led to a solid report, giving the latest data on livestock marketing and a generally excellent survey of the problems of animal health and marketing as they existed in mid-1982. A specific study of the Saudi market

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1/ Somalia Democratic Republic (SDR), Ministry of Planning, Livestock Sector Survey, 1981.

2/ Holtzman, J., The Economics of Improving Animal Health and Livestock Marketing in Somalia, MSU/USAID (Somalia), June, 1982.

for Somali animals was commissioned at the same time.[1/]

These studies leave little doubt about what the problems in the industry are. And many of them contain project proposals with specific prescriptions for ameliorating these problems.

This body of description and analysis is a mine of useful information. It is full of project ideas, some of them well-developed. However, its operational utility - the possibility of using it wholesale for programming purposes - is reduced by three factors.

(1) The focus is almost entirely on the public sector; the possibilities of using private sector instruments are given little attention.

(2) The limited fiscal and management capacities of the public sector are not adequately considered in some of the proposed programs; projects that have failed before are in numerous instances recommended again, despite the fact that the fiscal constraints, management shortages, and policy deficiencies that contributed to project failures in the past are still present.

(3) The policy environment is more or less taken as given.

The approach in this paper draws heavily on the background

1/ Holtzman, J., Marketing for Livestock and Meat in Saudi Arabia: Implications for Somalia, MSU/USAID (Somalia), June 1982.

material in the previous studies; they provide project ideas as well as analysis. But there are several elements here that are perhaps different.

First, the project proposals here are selective. Only a few of the many possible areas of intervention are chosen for action. Priority needs and the public sector's limited capacity are taken into account.

Secondly, the focus is on the private sector. We stress, wherever feasible, programs that will address the problems of the industry by drawing on private sector resources, mainly the energies of herders, traders and related entrepreneurs.

Thirdly, policy considerations are explicit in some of the proposed sets of projects; we propose that policy dialogue or firm and explicit conditionality be part of any USAID grant.

Finally, the project ideas, policy changes, and proposals for further study in this paper derive mainly from conversations with the main private sector actors in the livestock industry. We started from the proposition that in a sector where so much needs to be done, and so much has been recommended, the views of the main actors - herders, traders, veterinarians, ministry officials, businessmen with industry invovlement - should be given especially heavy weight. The field team therefore concentrated on interviews and visits with these elements,

especially the private sector participants. Government consultations were primarily with field people. The purpose of this concentration on field officials and on the private sector people was to get a down-to-earth "micro" picture of the problems at hand. In addition, knowing how people on the ground see things would allow us to propose more relevant and feasible projects.

It is important to see clearly the position of the present paper in the long continuum between diagnoses of sector problems and project design. The previous studies have described the industry and its problems and have offerred a variety of project proposals for people dealing with these problems. We attempt here to: 1) set out projects that merit highest priority in any upcoming sector program; 2) use a private sector perspective in looking at ways to improve sector performance; 3) address aspects of the policy environment that are crucial to the industry's future growth. We stand midway in the project idea/project design continuum. We draw on past studies and indicate to design teams the projects that we think should be analyzed. We also suggest to the Mission that they consider the critical issues that require further study.

The livestock sector in Somalia, as elsewhere in Africa, has not proved an easy target for local development planners and their foreign partners. While some problems now are so urgent

and so obvious that they cry out for immediate project response, with others, possible solutions are far less clear. New projects aimed at these problems - at least projects which can be more effective than those in the past - cannot be developed without some action-focused study.

The present study follows directly from an earlier analysis of the private sector in Somalia which concluded as follows:[1/]

> "...'conventional' approaches which rely on public sector institutions for direct output increases or delivery of services have an extremely poor record in terms of durable economic impacts and are not likely to get better results in the near future. Modifications are therefore in order - notably, the design of projects which draw more widely on private sector energy...
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> ...The poor performance of livestock projects in Somalia, as in Africa generally, illustrates (this) proposition....For at least twenty years, the conventional approaches, donors and the Somali government have tried to create effective institutions serving herders and traders, the backbone of the country's major industry. But except for the anti-rinderpest campaign of the 1970s, the results have been dismal. In one recent report, the present state of affairs has been summarized as follows.
>
> > 'The animal health and marketing infrastructure in assembly areas in the hinterland, along stock routes and in staging areas near the principle ports, and at the port, is poor and deteriorating. Water reservoirs are punctured or inoperative, crushes and ecto-parasite facilities (dips, spray pumps) do not exist or are not used, holding grounds are badly main-

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1/ Elliot Berg Associates, Encouraging the Private Sector in Somalia, September 1982.

> tained or reserved for other uses, and quarantine facilities are in a hopeless state of disrepair. Yet traders are required to pay local government import taxes, veterinary inspection fees and customs duties with little or nothing in the way of services in return.'" 1/

The main element in the scope of work in the present study is "to define possible assistance activities to 1) improve the livestock system as a whole and 2) support the broad participation of the private sector in livestock-related activities." We were instructed to consider the policy environment for the industry, and to look at a variety of other issues. (See the Scope of Work attached as Annex I.) Some of these issues we do not cover at all. For example, we were asked to assess the adequacy of the market intelligence system for livestock. But based on extensive interviews with the major players in the system it became apparent that the rough and ready communication system, despite obvious deficiencies, was working reasonably well. Traders know prices in Jeddah and other points in the marketing network. Formal and informal communications systems seemed to be in place which allowed very complex information to be transmitted from Jeddah to Mogadishu and to other major points in Somalia. Family links and frequent travel appear to sustain this abundant and trustworthy flow of information.

1/ Holtzman, J., op. cit.

For this reason, and because (short of the appearance of some new technology which we know nothing about) the cost of installing more modern and complete communications networks would be prohibitive at this stage of evolution of the industry, we do not propose any projects on the communications side.

Similarly, the Scope of Work calls for an assessment of problems involved in financing livestock exports. Discussions with traders, however, did not indicate that this was a major concern - at least in the Spring of 1983. And more objective evidence tends to bear this out: livestock exports rose significantly in 1982 and preliminary reports indicate a faster rise in the first half of 1983. This provides some a priori indication that price incentives in the Saudi market are not presently unattractive to producers and traders.[1/] For this reason, we did not regard the matter as a high priority and do not discuss it in this report.[2/]

A number of key propositions guide the choice of projects in this paper and shape the overall strategy that these project proposals reflect.

1/ Traders did complain about the inflexibility and slowness of the letter of credit system. They found it difficult to amend the LC - specified conditions when market changes offerred newer and better opportunities.

2/ The present system is succinctly described in IMF, Somalia: Recent Economic Developments, February 1983. Cowiconsult Report of August 1983 also comments on it.

(a) Somalia's market share in Saudi Arabia has fallen drastically in the past decade (see Table 1). Other exporters have been expanding their shares of the Saudi market.

(b) The May 1983 prohibition of Somalia cattle into Saudi Arabia because of claimed rinderpest infection represents a severe danger for the industry, a danger that the Saudi market can be lost to Somalia.

(c) Livestock offtake in Somalia has grown appreciably over the past decade, and some species still show rapid offtake increases - e.g. cattle. But the potentials for further increases in production are limited, given existing technological constraints. Growth in offtake and exports therefore have to come from increased productivity - especially from reduction of animal morbidity and mortality.

(d) To retain its position in the Saudi market, and to increase incomes to herders and traders from given levels of offtake, lower costs of marketing are essential. This would allow Somalia to compete more effectively in Saudi Arabia, and to distribute bigger shares of sales proceeds to producers and traders.

TABLE 1

COMPOSITION OF SMALL RUMINANT IMPORTS INTO SAUDI ARABIA, BY EXPORTING COUNTRIES

Number of Small Ruminants	1981	1980	1979	1978	1977	1976	1975	1974	1973	1972	1971	1970
Somalia	1,155,449	1,247,533	1,150,832	1,422,885	514,529	730,178	1,002,231	806,453	930,347	1,293,284	951,866	778,910
Sudan	884,475	623,853	387,494	733,776	254,700	137,445	91,195	202,552	164,885	112,996	97,293	100,788
Ethiopia	25,296	21,167	10,460	846	53,513	13,992	8,500	81,662	129,624	27,496	42,059	45,128
Djibouti	32,383	-	6,200	3,897	92,327	3,365	6,000	2,800	-	20,716	23,536	32,389
Total: East Africa	2,053,604	1,894,533	1,554,986	2,161,404	915,069	884,980	1,107,926	1,093,367	1,224,856	1,454,492	1,113,954	1,005,112
Syria	961,685	149,436	222,740	50,745	23,326	8,687	12,662	-	-	-	-	-
Jordan	618,350	418,455	23,349	4,129	3,479	9,425	1,355	-	-	-	-	-
Egypt	162,242	165,716	181,406	91,860	24,848	2,874	1,274	-	7,991	-	-	-
Turkey	368,987	183,228	297,049	181,983	25,303	31,961	-	-	-	-	-	-
Total: Near East	2,112,834	939,745	771,555	336,704	103,827	65,618	17,110	-	7,911	-	-	-
Australia	1,764,490	1,191,020	1,058,559	1,082,426	602,716	189,826	49,307	8,000	5,950	5,000	33,560	2,500
Other	52,690	300,471	137,897	110,085	148,694	73,105	45,329	17,110	-	-	-	-
Total	5,993,618	4,328,769	3,522,997	3,690,619	1,770,306	1,233,522	1,217,653	1,098,477	1,238,797	1,459,502	1,161,390	1,939,846

PERCENTAGE OF TOTAL SMALL RUMINANT IMPORTS BY COUNTRY/REGION

Somalia	19.3	28.8	32.7	38.5	29.1	60.6	82.3	73.4	75.1	88.6	81.9	74.9
Sudan	14.1	14.4	11.0	19.9	14.4	11.4	7.5	18.4	13.3	7.7	8.4	14.3
Total: East Africa	34.4	43.8	44.1	58.6	51.7	73.4	91.0	97.9	99.9	99.7	97.1	97.6
Near East	35.3	21.7	21.7	9.1	5.9	4.7	1.3	-	0.6	-	-	-
Australia	29.4	27.6	30.0	29.3	34.0	15.8	4.0	0.7	0.5	0.3	2.9	2.4
Other	0.9	6.9	4.2	3.0	8.4	6.1	3.7	1.4	-	-	-	-

Note: All small ruminant imports except for imports of female breeding stock, are included in the above figures. Small ruminants imported for raising are assumed to be immatures imported for finishing and slaughter within the calendar year. In some cases imported immatures might be slaughtered in the succeeding year(s), but in the absence of any information on the length of the feeding period for imported immatures, no adjustment has been made.

Source: Foreign Trade Statistics, Ministry of Finance and National Planning, Central Department of Statistics.

Source: Holtzman, (Saudi Arabia), op. cit., p.2.

(e) The livestock industry runs into trouble when it has to rely on public services, for many of them are deficient. Therefore, even a wholly private sector-oriented strategy has to provide some public sector infrastructure and some strengthening of public sector services since these are, in a number of instances, critical bottlenecks.

On the basis of these propositions, four sets of projects are proposed in this paper:

- Animal medication: increases in supply and reform of the distribution system.
- Improvements at the ports, beginning with Berbera: an integrated water supply system, new livestock loading facilities, improved quarantine station facilities, procedures for vaccination and certification of export animals.
- Assistance to Somali entrepreneurs.
- Two longer term projects: financing of lecturers in market-oriented economics, and continuation of support for the animal breeding (artificial insemination) effort at Afgoi.

Within each of these programs a number of studies and policy changes are recommended. Also, for the ongoing discussion of sectoral policies and programs, we recommend the formation of a Livestock Sector Coordinating Group, composed of donor and Somali technicians.

There is now general recognition of the importance of the livestock industry to the Somali economy. It directly engages some 70% of the labor force, generates 35% of GDP and produces 80-90% of export earnings. But even these dramatic figures do not adequately capture the complexity and the full social and economic importance of the livestock industry. It is the centerpiece of the economy in the sense that it ties the Somali people to the modern economy; it is the sole generator for monetary income for most of Somalia.

Nomadic livestock production generates income and employment throughout the economy by its linkages with a wide variety of specialized services - from "bush veterinarians", private transporters, water and forage sellers, to government workers. The employment importance of the industry in truth exceeds the 70% figure usually cited; adding the livestock-related private services and the public employment related to livestock (including shipping and finance) would probably bring total livestock-generated employment to 75-80% of the Somali labor force.

Not only is livestock-raising and selling the dominant economic activity, it is also privately organized. It is, in fact, the predominant element in Somalia's private sector. And it is extremely complex in organization

and in its economic and social ramifications. It involves movement of many hundreds of thousands of animals over long distances, ultimately to markets that may be 1000 km. from point of first sale. It rests on complicated arrangements for purchase of herder services, water, access to grazing. It involves a highly diffuse network of contractual relationships to do all the varied specialized tasks required by the industry - to cut grass for forage, dig wells for water, provide transport services, etc. It has created a rough and ready system of "internal" animal health care; "bush veterinarians", for example, provide, for a fee, diagnoses and medication, and there exist networks of semi-sedentary herder-farmers with whom sickly animals can be left for recuperation and later recovery.

For transport from holding areas to ports an extensive private trucking industry has developed. In the case of Berbera, most small ruminants and many cattle are shipped into the port by truck. This is big business in terms of income flow; from Burao to Berbera, according to a Burao trader, a typical truck charges 2000 Som. Sh. for a load of 20-25 sheep or 14 cattle.[1/]

1/ The costly use of trucking (versus trekking) is imposed by the lack of fixed and reliable shipping schedules for livestock out of Berbera, and the scarcity of water and protective shade in the likely event of shipping delays and postponements. Animals are held in the more benign conditions around Hargeisa and Burao until loading in Berbera is assured. Then they are trucked to the port.

In a large periphery around the three main ports there is a thriving business in the cutting, collection and delivery of fodder necessary to feed livestock in the ports and aboard ship during the passage to Saudi Arabia. There are also sales commitments to be made with the importers in Saudi Arabia specifying species, condition, numbers, prices, estimated delivery dates, letters of credit and financing of shipments.

All of this is indicative not only of the size and complexity of the livestock industry; it also underscores its social significance. And it shows the many ways that Somali herders and traders have had to cope with the hazards and difficulties of the environment.

And cope they have. The industry is successful in many different respects. First, it represents a successful exploitation of the resource base - an unyielding resource base at that. Reusse, in his cogent appraisal of the nation's livestock economy, notes that the "...contribution (of Somalia's nomad herders)... is really a net value-added item since it originates from land resources that can hardly be exploited in any other way and is produced and marketed with almost no inputs from outside the system....Even the movement of the crop, i.e., the livestock offtake on the hoof, to consumer markets (domestic and abroad) is to a large

extent free of purchased transport energy inputs."[1/]

Secondly, the private agents of the industry have responded ingeniously and energetically to the challenges of the environment.

One observor comments:[2/]

> "Until recently loading was first come, first on board, with the result that more animals than could be sent were rushed down the scarp, and the small supplies of feed and water in Berbera were pressed unnecessarily. Realizing the magnitude of the costs in weight loss and confusion involved, the exporters organized their own committee early in 1978 to regulate boarding according to the serial order of the letter of credit. It should be noted that this committee is not a government entity nor a sanctioned cooperative in any official sense, but rather a privately-motivated dealers' association.
>
> ...some traders direct low-technology livestock feeding enterprises by buying immature animals... holding them in their trade herds, and eventually (six months for sheep and goats) moving them to market. Second, since the exporters must also provide feed (but not water) for the four-day voyage, they have enclosed many small areas in the best pastures in a wide hinterland in the highlands, and they harvest the indigenous forage. A further task of the land transport fleet involves moving these many tons of feed to Berbera, where it is stored (for use by waiting herds or on board the ships) in large walled open-roofed compounds that are also built and owned by the landlords. Fourth, wranglers are hired by the Somali government to handle the animals on board, but are paid for (and privately paid extra) by the exporters. By mid-1979 the senior exporters were beginning to talk of financing a ship to carry their control of the trade one step further..."

1/ Reusse, E., "Somalia's Nomadic Livestock Economy, Its Response to Profitable Export Opportunity", World Animal Review, July-September 1982, pps. 2-3.

2/ Aronson, D., "Kinsmen and Comrades: Toward a Class Analysis of the Somali Pastoral Sector", Nomadic Peoples, No. 7, November 1980, p. 18.

Another study concludes with respect to animal health:[1/]

> "...Producers are very knowledgeable about the causes and symptoms of animal diseases and have devised clever though rudimentary means of treatment. Isolation of diseased stock from healthy animals is a widely practiced form of disease control. Holding livestock exposed to or showing symptoms of contagious disease down wind of healthy stock is also standard practice. A crude form of vaccination against contagious bovine pleuropneumonia, practiced by traders in Southern Somalia in the 1950s and 1960s, involved applying infectious tissue to slits made on the animals' noses. When anthrax outbreaks occur in an area, pastoralists will typically burn the surrounding pasture and browse to destroy the bacterial agent. When foot and mouth infects several of the nomadic producers' cattle, he often will spread the disease using the infected animals' saliva. Local strains of foot and mouth, which debilitate cattle but rarely cause mortality, generally run their course in 18 to 20 days. By afflicting all his animals at the same time, the producer minimizes the period over which his herd suffers from disease. This practice eliminates the need to separate and provide special treatment for individual animals over an extended period while the herd is on the move. The pastoral producer therefore minimizes labor inputs and simplifies herd management under difficult circumstances. Further examples of the skill and ingenuity of Somali livestock producers could also be cited.
>
> Unlike the veterinary service, the pastoralists rarely mis-diagnose animal disease. Although the veterinary service does not usually mis-diagnose animal diseases, there are isolated instances of misdiagnosis which are nonetheless disturbing. Indeed, it is the pastoral producers who usually bring disease outbreaks to the attention of town-based veterinary staff, describing the symptoms accurately and identifying the diseases correctly by their Somali name. Unfortunately, the rapport between livestock

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1/ Holtzman, op. cit.

> owners and the veterinary service is not particularly good at the present time. Producers complain of the unavailability of drugs when they are needed and instances of misdiagnosis of disease and unwanted vaccination imposed by force. Moreover, nomads deplore the abortions induced by vaccinating female stock late in Jilaal, shortly before most of the calf, kid and lamb drop takes place, while the environment is harshest and animal nutrition and overall condition is poorest. On the other hand, pastoral producers do appreciate curative treatment and vaccination when disease outbreaks occur. Drugs for treating ecto and endo-parasites, though in short supply, are in high demand. Nomads' readiness to pay for these drugs reflects no unwillingness to combat parasites..."

Because of these factors, the industry has managed to maintain output, offtake and exports despite very difficult climatic circumstances (drought), in a public policy environment that has not been particularly encouraging, and with little help in publicly-provided inputs. Table 2 shows that livestock exports have grown steadily in the past twenty years - from roughly 500,000 head to roughly 1.5 million. A recent observor of the industry comments: 1/

> "The achievement of the Somali livestock export sector under such a complex set of adverse factors is remarkable and unique in the history of worldwide livestock export performance..."

The private actors in Somalia's industry have performed well, maintaining and even expanding production and sales during a decade of deteriorating overall economic conditions. But they face serious problems, even threats to their future. Much of this derives from the fact that they

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1/ Reusse, op. cit., p. 11.

TABLE 2

EXPORTS OF LIVE ANIMALS FROM SOMALIA
('000 head)

Year	Sheep	Goats	Total Small Ruminants	Cattle	Camels
1950	n.a.	n.a.	121	2.7	0.2
1958	286	149	434	12	2.5
1959	350	107	457	10	5.5
1960	427	149	576	12	6
1961	447	181	628	25	8
1962	526	222	748	32	10
1963	670	190	860	49	17
1964	823	192	1,015	57	18
1965	416	375	791	38	24
1966	610	487	1,097	36	24
1967	567	367	931	36	37
1968	768	514	1,282	42	17
1969	712	695	1,407	34	23
1970	546	605	1,151	45	26
1971	608	576	1,184	56	24
1972	789	828	1,617	77	21
1973	684	639	1,323	70	28
1974	655	556	1,211	27	24
1975	796	754	1,550	39	33
1976	374	374	748	76	37
1977	461	442	903	54	35
1978	728	723	1,451	74	21
1979	579	616	1,195	79	17
1980	829	951	1,780	85	21
1981	685	680	1,365	117	14
1982	731	720	1,451	157	16

Sources: Ministry of Planning, Central Statistical Department, Foreign Trade Returns (1962-80), Annual Trade Reports of the Northern Region (1958-61), Statistica del Commercio con l'Estero (1958-61), Southern Region. Holtzman, J., (1981), (Somalia) op. cit., pp. 2,3. Cowiconsult, (1982), op. cit. pp. 2,3.

cannot work alone. Public sector inputs are essential for the protection and further growth of the industry. It is especially ominous that the industry faces a severe threat to its export markets and avoidance of disaster requires vigorous public policy changes.

The problems are as follows. First, the productivity of the industry is reduced by policy deficiencies in the area of animal health. Animal medicines are at present the main purchased input provided by the public sector. These veterinary medicines and supplies are the responsibility of a government monopoly; only government is legally permitted to sell them. This it does, in some cases at 100% subsidy, i.e. "free" prices, when the medicines are available. This arrangement has not worked well. Supplies are scarce, herders and traders must travel long distances to buy at the limited number of outlets, and smuggling and diversion to parallel markets are common.

Secondly, the costs borne by the industry are high and in some respects increasing, because the basic infrastructure required for efficient operation (a public sector responsibility) is also seriously deficient. With a few exceptions, road links are often impassable. Communication facilities are sparse, for example. There is no phone or telex connecting Hargeisa and Berbera.[1/]

1/ That this limits the flexibility of export traders is obvious. Letters-of-credit procedures are so sticky that is is usually impossible to take advantage of late market developments, e.g., sharply rising Saudi prices for a single species. Such changes can't be accommodated even
(Footnote continued on next page.)

Similarly, the industry bears heavy shipping costs - perhaps the highest in the world - because of uncertainties in ship loading schedules, lack of competition in chartering, high risks of loss or damage to shipped animals, lack of access to insurance, inadequate dock, water and general loading facilities in the ports, especially in Berbera.

Just as the public capital stock is sparse and deteriorating, the private capital stock is suffering from years of foreign exchange scarcity and the decade of neglect that prevailed under "scientific socialism". Cars, trucks, farm equipment of all kinds are old and in poor condition.

Finally, the industry faces a grave problem in its chief export market, Saudi Arabia, because of health factors. The system of disease control at the Somali ports functions in a highly uncertain and ineffective manner. Importing countries, especially Saudi Arabia, are increasingly concerned with the health of their consumers, their domestic herds, their livestock-related industries. There is a real threat hanging over the industry: a potentially disastrous exclusion by Saudi Arabia.

Footnote Continued:

when the Somali exporter has the required animals and an upcoming shipment is scheduled. Somalia thus loses sales, is denied the benefits of higher unit prices and delivers according to an agreement made months earlier. Most of the costs of these marketing inefficiencies cannot be shifted forward to the Saudis, because of competition among livestock exporting countries. The incidence is mainly borne by the herders via reduced prices for their export animals.

The strategy proposed here gives priority attention to these problems. It recognizes the competence of the private agents and suggests ways to enlarge their role. But it recognizes the essential character of the public sector and proposes public sector projects that will stimulate production and sales by reducing costs and will protect export markets by a new attack on the animal health problem. Finally, it addresses key policy constraints, the removal of which can raise productivity and Somali income.

PROGRAM 1

EXPANDING THE SUPPLY OF LIVESTOCK MEDICATION

PROGRAM 1

EXPANDING THE SUPPLY OF LIVESTOCK MEDICATION

Summary

The scarcity of medication is one of the major problems confronting the livestock industry. Some of the scarcity comes from defects in the budget process and some from foreign exchange scarcity. But much is inherent in the public monopoly in the importation and distribution of animal medication.

Increase in the supply of medication and improvement in its distribution system is the most economic and administratively feasible way to expand livestock offtake.

To achieve this objective, we recommend five projects:

- establishment of a Livestock Medication Fund;
- agreement by the Somali Democratic Republic (SDR) to allow private imports and sale of selected livestock medications;
- technical assistance;
- establishment of a Livestock Sector Coordinating Group;
- project-focussed studies.

Introduction

Somali livestock breeds are especially hardy; they have developed resistance to disease and drought. Somali herders and traders have also developed, through long experience and much inventiveness, various indigenous means of treatment.1/

Nonetheless, animal mortality is high. The mortality estimates in Table 3 (see following page) suggest that normal annual mortality for mature and immature stock is between 140-230,000 cattle, 224,000 camels and 1.5 million small ruminants (sheep and goats).

The potential benefits from reduced mortality are very substantial; a 30% increase in sheep and goat offtake alone is not too much to expect, according to some analysts.2/

The sources of high mortality are, of course, diverse and many are not amenable to quick resolution. The two principal sources are poor animal nutrition and disease. For convenience, the disease factor can be broken into two components: 1) those subject to vaccinations and whose delivery is normally the responsibility of modern veterinary services, and; 2) those not involving vaccination, but are applied by a broader range of agents, often the herders and traders themselves.

1/ Holtzman (Somalia), op cit., pp. 50 & 52.

2/ Holtzman (Somalia), op cit., p. 64.

TABLE 3

ESTIMATED LIVESTOCK MORTALITY

Species	Adult Mortality			Calf/Kid/Lamb Mortality		
	Estimated[1] Population	Mortality Rate	Estimated Annual Losses	Estimated[1] Population	Mortality Rate	Estimated[2] Annual Losses
Cattle	2,792,500-2,067,900	5-8%	139,600-229,400	854,200-925,600	15-30%	150,700-301,500
Camels	4,486,099	<5%	224,300	811,140	25%	231,800
Sheep	5,463,671	10%	546,400	3,968,649	30%	1,400,700
Goats	9,432,657	>10%	934,300	5,842,901	30%	2,062,200

Note: These estimates of livestock mortality are for years of normal rainfall. During years of drought adult mortality would be significantly higher and calf, kid and lamb losses would be nearly zero, since little reproduction occurs under drought conditions.

Source: Mortality rates are from the World Bank's Agricultural Sector Review, Annex 1, "The Livestock and Wildlife Subsector," December 1980. Livestock population figures are from the 1975 national census.

[1]The calf/kid/lamb populations are estimated in the following ways: (1975 census estimate) x (% female breeding animals in national herd) x (calving/kidding/lambing rate) x (1 - (50% of calf/kid/lamb mortality rate)). The last term is included, because we assume that half of the calf/kid/lamb crop for the year has already died at the time the estimates are made. The percentage of female breeding animals in the respective herds is based upon research findings for African herds and is assumed to be as follows: 45% for cattle, 50% for camels and goats and 55% for sheep. Birth rates, taken from the Agricultural Sector Review, are as follows: 60% for cattle, 35% for camels, and 90% for sheep and goats. The "adult" livestock population, which includes immature as well as mature stock, is calculated as a residual (Total Population - Estimated Calf/Kid/Lamb Population).

[2]Annual calf/kid/lamb losses are calculated not as a proportion of the estimated calf/kid/lamb population but as a proportion of calculated births during normal (non-drought) years.

Source: Holtzman (Somalia), op cit., p. 53.

This project focuses on the second component. The strengthening of the vaccination delivery capacity of the MLRF, which is not addressed here, is certainly a high priority need. It is addressed in part in Program 2. But there are issues involved about which more needs to be known -- e.g., the reasons why herders are reluctant to use available free vaccination services. This program includes research aimed at these problems. Meanwhile, much can be done with regard to increasing the volume and improving the distribution of medicines and related supplies. This is, in fact, the single most pervasive and immediate need throughout the sector, affecting pastoralists, sedentary farmers, ranchers, dairymen, and touching even the fledgling poultry industry. This is an area in which additional resources coupled with policy changes leading to better mobilization of private energies can have quick, strong, positive effects.

The Extent of Scarcity

Animal medication is in very short supply. The best evidence that this is so, and has been so for a long time, is the testimony of local officials, herders and traders who almost all say drug availability is a major preoccupation. Examples are abundant.

(a) Veterinarians interviewed in the field report trouble in securing regular

supplies of medication from the MLRF warehouse. They say that even drugs listed in the official circular giving prices and availability are in fact not in stock when ordered. Less than ordered quantities are almost always supplied, apparently to stretch limited inventories. Veterinary and para-veterinary staff adjust to medication scarcity in the government stock by translating and explaining dosage instructions for illegal contraband drugs that users bring to them for such help.

(b) Herders are said to have their own syringes. Despite the fact that it is government policy not to distribute injectables, most veterinarians readily admit to giving injectables to pastoralists. An indication that medication is not available is the increased reversion to "firing" (burning an infected area with red hot metal) despite traumatic results.

(c) Herders and traders freely report dependence on contraband and black market medication. There are accounts that herders travel to Mogadishu seeking livestock medication, often

without success. It was common for informants to note matter-of-factly that a particular item "cost a certain amount from the government, but isn't available." In many cases, similar drugs (either of contraband or black market origin) were available at premium prices. Herders, traders and ranchers told the mission that Kenyan drugs are available while government drugs are not.1/ Kenyan drugs were also said to be regularly available in the village. MLRF drugs, when available, are typically in distant MLRF district or regional offices. Trips of 40 kilometers were described only to find no drugs were being sold to herders in the district office.2/

1/ The following examples were cited in one village. Antrycide (anti-trypanosome) for camels: local - not available, Kenyan - 1000 Som. Sh. for 100 grams. Naganol (anti-trypanosome): local - 7 Som. Sh. and not available, Kenyan - 5 Som. Sh. for one sachet/dose. Barlin (anti-trypanosome): local - 3 Som. Sh. per dose, Kenyan - 2½ Som. Sh. per dose. For official prices see the government price list attached as Annex II.

2/ One local customs police officer said that contraband medications were down due to aggressive enforcement. As evidence he reported arrests and convictions totalling seven in a year. This was in the same jurisdiction where other contacts asserted that Kenyan drugs were easily bought.

(d) In another area, a herder selling animals in a local market indicated that the only endoparasite medication available was either from Kenya or Djibouti. He also indicated that MLRF medication was 3 Som Sh. a dose, but not available. A similar contraband medication was 12 Som. Sh. In the same market another herder said endoparasites were a major problem. He said that contraband medication was 15-18 Som. Sh. a dose. Sheep dip was reported to sell for 5 Som. Sh. an ounce when available and was currently only available in the black market at 7-8 Som. Sh. The third most needed medication in the same market was said to be antibiotics to combat infections that occur mainly when dehorning young cattle. None was available from any source. This town was a district headquarters on a paved main road; one can imagine the chance of finding medication 100 kilometers off any all-weather road.

It does not appear that the situation is improving. Nowhere do people say that drugs are becoming more available or that prices are lower now than in the recent past. Nor are objective indicators of improvement present; for

example, such indicators as increasing stocks of medications in MLRF district and regional offices. Limited inspection of such inventories revealed only meager supplies. In one case it was said that the whole stock could be sold in a day if it were made openly available.

The evidence of scarcity as transmitted from the grassroots is confirmed by available data on imports of animal medications. No orders were placed by the MLRF, Animal Health Department, in the first half of 1983. Orders had been approved in 1982 for Som. Sh. 16 million, but the Central Bank refused to authorize them. Foreign exchange scarcity was the reason. No drugs were received by MLRF during the first four months of 1983. Some imports, however, came in under aid programs. Table 4 shows the 1982 inflow by donor. The total value of these imports was Som. Sh. 11 million.

The Causes of Scarcity

One cause is, of course, foreign exchange scarcity, as indicated above. But budgetary scarcities are also a factor. Table 4, from a recent World Bank-financed study, is ambiguous in certain respects, but it does indicate that few budget resources are given to drug purchases.

The second aspect of the drug scarcity problem has to do with policy and organizational issues. First, import

TABLE 4

MINISTRY OF LIVESTOCK RANGE AND FISHERIES
ALLOCATIONS AND EXPENDITURES
(1982, 1983, Som. Sh.)

Project	All 1982	All 1983	Expenditures	Remarks
MLFR-HQ[x)]	37,945,923	55,095,792	37,259,527	Ordinary budget-salaries
Range Agency	15,351,500	22,244,600	15,351,500	
Tsetse Unit	6,500,000	7,511,000	722,094	
Animal Health	230,000	2 mill	230,000	
Intensification etc				Vet. equipment allowances,
Quarantine Stations	510,000	750,000	507,143	
Ectoparasites project	448,000	800,000	445,466	Spraying equipment
Laboratories	2,770,000	2,770,000	2,365,500	
Workshop	2,135,200	4 mill	2,074,523	
Vaccine Institute	2,218,000	5 mill	2,270,000	
Veterinary School	3,573,500	4 mill	3,684,500	
Total	71,682,123	104,171,300	64,910,253	

Source: Min. of Livestock, Forestry, and Range.

x) MLFR-HQ: In the ordinary budgets 1982 and 1983, a total of 4 mill. and 6 mill. Shs. respectively were earmarked for drug purchase on a revolving account.

Source: Ministry of Agriculture, SDR, Agricultural Inputs and Services Study, Interim Report, July 1983 (hereafter Cowiconsult), p. A3.2.

distribution of animal medicines is a government monopoly. Private importers are not allowed to legally import these products. Secondly, there are organizational weaknesses that prevent efficient use of such resources as are available.

(a) Imperfections in the budget process and financial administration lead to low drug allocations and uncertainties and delays in getting what the budget says. Drugs, as noted, are a small share of the budget. But cutbacks fall heavily on them, as on all non-salary items.

(b) Personnel and wage systems are not designed to encourage hard work, initiative, risk-taking. In fact, salaries are so low that they almost necessitate secondary activities and invite corruption.

(c) Market supply and demand are difficult to estimate. Drug supplies must be ordered long in advance - longer than the normal budget cycle. It is never known what portion of the request will win Central Bank approval for a foreign exchange allocation. Estimates of drug demand are also difficult

to make; the flow of signals from herders to those responsible for placing orders is long and easily interrupted.

(d) The drug distribution function in a nomadic setting is inherently unsuitable for a large-scale organization. Direct treatment of thousands of herds, highly mobile and dispersed over vast areas, presents unmanageable demands for management skill, mobility (vehicles, fuel), communications.1/

On top of these basic organizational elements are added certain policies that exacerbate the situation. Subsidized pricing (sometimes 100%) encourages waste and excess demand.

The overall result is generalized scarcity of livestock medicine, irregularity of delivery and constant

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1/ Uncertain supply conditions require a flexible, energetic management, which is rare under the circumstances described above.

An example of how the lack of these management qualities adversely affects the welfare of the livestock industry was apparent in mid-1983. Endo-parasitic medicines were very scarce at that time. Domestic supplies were nil; there were limited supplies of smuggled medication from Djibouti and Kenya. All this time, a government-ordered shipment of the required drugs was long overdue. But the shipment had been at another Somali port - though not at Mogadishu, where it was expected.

uncertainty among herders and traders as to what drugs might be available, where and when. These drugs are a necessary resource in the production of livestock.

It was the experience of this mission, as of others in recent years, that shorages and unsatisfactory delivery of animal medication is the most pervasive and important problem in the livestock sector. The supply crisis affects pastoralists, sedentary farmers, ranchers, dairymen, and poultry-raisers. It frustrates the producer's efforts to keep his own animals healthy -- which is the most fundamental element in any animal health effort. It causes prices of medicines to soar. It distorts demand: it makes a "hoarder" of every trader and herder. It stimulates leakage of drugs from government's distribution system into the black market. Aside from the lamentable incentive to illicit activity, it also leads to faulty veterinary practices as some herders and traders try to accommodate to the scarcity/high cost conditions by resorting to smaller doses than recommended by the manufacturer.

These kinds of difficulties are hardly unique to Somalia. They are, in fact, all common in less developed countries. A recent assessment of livestock problems in dry Africa concludes:

> A particular problem has always been the timely and adequate supply of veterinary drugs and requisites. Even in

> those countries which rightly pride themselves on veterinary services of above-average efficiency (e.g., Botswana and Kenya), livestock owners, particularly in dry areas, cannot procure (they are willing to pay) the veterinary supplies they need. Government veterinary services usually have a monopoly of distribution which they cannot effectively carry out. Government financial regulations and budgetary processes (which prevent the use of revolving funds and require budgetary requests to be made up to 24 months before the expected date of expenditure) are a major cause of the defects in the supply system.1/

The Proposed Projects

Summary

The project proposed to address these medication supply problems has five elements.

- The U.S. will create a Special Livestock Medication Fund for a three-year period for purchase of imported drugs. The amount of the U.S. contribution will be determined in consultation with the SDR and all relevant donors. (See Annex III for discussion of estimated size of the Fund). Other donors will be asked to participate in the Fund. Its existence will allow expanded imports of livestock medication and policy discussions between the donor community and the MLRF.
- The creation of the Fund will be conditioned on agreement by the SDR to replace the present system of monopoly control of imports and distribution

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1/ Stephen Sandford, Review of World Bank Livestock Activities in Dry Tropical Africa, January 1981, p. 105.

with a more open policy that will permit private Somali traders to import specified livestock medicine and supplies.

- The U.S. will provide technical assistance to help the SDR introduce the changed supply system in an orderly way.
- Establishment of a Livestock Sector Coordinating Group to effectively set into motion the ideas mentioned above.
- Project-focussed studies are a necessary prerequisite to increased understanding of the health care system within the livestock sector.

A Livestock Medication Fund

The USAID will make a three year grant to a Fund for importation of livestock medicines and supplies. Because of difficulties in estimating "needs", the amount of the Fund will have to be determined later (see Annex III). The Mission should seek complementary contributions from other donors at an early stage.

These resources could be used to supplement existing MLRF imports, or to temporarily replace them, thereby reducing budgetary deficits and the foreign exchange gap. The creation of the Fund would, in any case, be conditional on a basic SDR policy change - i.e., modification of the present system that prohibits private import and sale of animal medicines.

The basic idea is that the supply of drugs will be increased in two ways: directly, by the augmented foreign

exchange made available by donors; and indirectly, by private importers drawing on foreign exchanges available via informal channels. Also, rational drug pricing will reduce waste and decentralized private distribution will make usage more efficient. The net result will be a reduction in morbidity and mortality of animals, reduction of time and energy now devoted to acquisition of drugs, and reduction in drug costs. The output effects should be seen in increased livestock offtake for both domestic slaughter and export.

Three major issues arise concerning this project and its associated policy reform: the appropriate size of the Fund; the determination of specific medications that should be allowed to be sold privately; the implementation of the new arrangements.

The present volume and costs of imported medication is poorly known. The range of estimates is wide. Use of MLRF "treatments rendered" data and prices from the USAID Bay Region project lead to an estimate of some $6 million a year in recent years. According to a recent study by Cowiconsult, which identified Letter of Credit imports and donor contributions for 1982, the total is much lower: Som. Sh. 28 million or U.S. $2 million. The appropriate amount needed to satisfy Somali demand is thus unclear. (See Annex III, "Estimating Livestock Medication Requirements", for

more details). This matter will have to be resolved by further inquiry when the Fund is being defined. Consultation with other donors and the MLRF will be essential in that exercise. This will be one of the immediate tasks of the Livestock Coordinating Group, which is described later.

This Project would pick up all costs of imported animal medicine for three years. The MLRF could then utilize its own budget and its "drawing" of foreign exchange, to strengthen its vaccination programs and its general activities. It would be understood, of course, that the MLRF, and hence the SDR budget, would begin to pick up these costs after three years. But by then, increased project-related livestock sales, and overall economic stabilization will have made this feasible.

The complexities of introducing private sales of animal medicines should not be underestimated, nor should risks of failure be ignored. Suitable price policies for those drugs distributed by the public sector have to be defined; the drugs cannot be distributed "free" and determination of appropriate prices is as thorny as it is important. Problems arise over such simple matters as the establishment of proper guidelines for use of the medicines that are freely sold; these must be clear and simple, and the spread of knowledge about them may require such things

are preparing explanatory flyers capable of being understood by non-literates.1/

But the biggest immediate issue is the division of the task -- determining which drugs can be imported and sold on the open market, and which must remain under direct administration by the MLRF. An analysis done by the USAID Mission veterinarian, P. Procella, recommends that veterinary medications of certain classes and specified generic drugs be open to commercial import and sale. These should be the cheaper, simpler, less toxic drugs, leaving the broader spectrum antibiotics and more toxic ones for distribution and use through the veterinary service against disease organisms resistant to the open-distribution drugs.

There may be a potential for production or packaging of some of these drugs by pharmaceutical companies in Somalia, which would have the advantage of allowing labelling in Somali. If imported, the MLRF should work on educating livestock owners in the proper use of these drugs, possibly through simple literature or picture presentations in leaflet form for wide distribution through the MLRF and commercial channels.

The following categories of drugs are recommended for open sale.2/

1/ Standardized concentrations would be highly desirable to allow herders to become more readily familiar with proper applications.

2/ These recommendations come from the USAID/Mogadishu veterinarian, Ms. Pam Procella. See Annex IV for details.

Open Sale

1. Topical antiseptics and antibiotics, including wound dressings, ophthalmic preparations, foot rot medications, etc.
2. Intrauterine antibiotic boluses.
3. Intramammary infusions of antibiotic - with short milk-out time.
4. Oral sulfonamides - boluses and powders for use as drench.
5. Oral antibiotics - boluses and powders.
6. Antiprotozoan drugs for poultry.

The following drugs are already administered by untrained people; they could be sold under the conditions outlined above with more attention to educating users to proper application and to control of specific drugs sold.

7. Injectable antibiotics - inexpensive drugs or combination of drugs with low toxicity and short withdrawal time.
8. Trypanocides.
9. Anthelmintics.
10. Acaricides - low toxicity (since hand dressing is common) with little residue in milk or meat, suitable for use in lactating or slaughter animals.

Sale Restricted to the Veterinary and Para-Veterinary Profession

Drug sales in the above ten categories would be open. It would be important to stock the MLRF Veterinary Service

pharmacies with a wider range of more potent (therefore more toxic) medications. Drugs restricted to use by the veterinary service would include the following:

1. Broader spectrum antibiotics and acaricides and anthelmintics with more potency but also more toxicity and longer drug residue.

2. Vaccines - most of these require storage facilities not available to the average animal producer, and vaccination should be recorded and the animal tagged.

3. Other classes of drugs not covered above, such as hormones, steroids, etc., which are not commonly used by non-professional people anyway.

Given the size of the country and the dispersed mobile population to be served, the possibilities of effective outreach for direct application of these "restricted" medications are severely constrained. It will be difficult to achieve national, regular coverage. Therefore, the MRLF should evaluate whether specialized training could be given to other agents that would permit at least the most necessary "restricted" drugs to be applied.

Technical Assistance

To assist the MLRF in the introduction and management of the new system, a technical assistance team should be provided. Indicative functions of the team would be as follows.

(a) Assist in designing the transition to the new supply system.

(b) Participate in the continuing review and updating of the "Open" list.

(c) Advise private sector businessmen interested in participating in medication importation on how to use the Special Livestock Medication Fund.

(d) Participate in periodic trips to monitor the program's progress in the field.

The head of the mission should be a veterinarian, with LDC and administrative experience. His second should be a livestock (or agricultural) economist. The Mission budget should contain funds for short-term specialized consultants.

Donor-SDR Coordination: A Livestock Sector Coordinating Group

The effective operation of a Livestock Medication Fund requires new forms of cooperation among donors and between donors and the SDR. To determine the volume and pattern of animal drug imports, it will be essential tc have good estimates of the total inflow of drugs from all donors and flow anticipated in upcoming aid agreements. The spending of the MLRF will have to be coordinated with that of donors. Otherwise, the risk of unusual over-supplies of some medicines could coincide with severe scarcities of others.

To deal with these issues, the formation of a Livestock Sector Coordinating Group should be proposed to the relevant authorities of the SDR. It should include multi-lateral and bi-lateral donors, representatives of relevant Ministries of the SDR (MLRF, Central Bank, Ministry of Finance), private traders and importer representatives. The functioning of the Livestock Medication Fund, and problems involved in the transition to a more open and developed marketing system would be a major initial concern of this group.

Project-Focused Studies

In critical areas of the livestock sector, and particularly in the health care system, vast gaps exist

in the stock of basic information and understanding. For example, it would be unrealistic or imprudent to launch broad new public programs of animal health care without better understanding of fundamental questions such as why herders are so reluctant to have their animals vaccinated and how the "informal" system of health care operates.

The informal system has drawn widespread comment - mostly praise. It is known that a "herd health specialist" exists in many herds, apparently a gifted, uncommonly skilled herder who is identified by the herd chief. It is also known that many "bush veterinarians" exist - private purveyors of treatment and medicine who earn their living from fees collected from herders and traders for treating sick or impaired animals. There may be other forms of informal health agents, less widely commented upon.

Two facts are most relevant in connection with these informal suppliers of health care. First, extremely little is known about them, who they are, where they come from, how they are "trained", their methods of operation, their efficacy. Secondly, they are oriented to deliver care when and where it is needed - a capacity that has so far proved to be largely beyond the reach of the formal animal health sector.

It may be that these groups can provide the core of a future outreach effort, one that would make improved care,

including better medication, available to most herders. But, first more must be known about them.

More needs to be known also in order to improve the overall vaccination efforts, as well as other elements of animal health. A study should, therefore, be undertaken of animal health care knowledge and practices among nomads. The study should be executed by a team composed of a veterinarian and a social scientist, working in collaboration with Somali counterparts.1/ The study should be in-depth, at least 18 months in duration, so as to allow adequate seasonal and geographic coverage. The following are the subjects that should be investigated:

(a) diagnostic abilities of "informal" practitioners;

(b) medication availability and use;

(c) attitudes toward and experience with vaccinations, including the feasibility of incentive schemes such as animal insurance coverage coupled with ear-tagging;

(d) what has been the experience, negative and positive, with specific medications;

1/ Part of the incentive for the Somali members could be the offer of a U.S. scholarship after successful completion of the study.

(e) if a private medication supply system were to develop, when and where would herders be most accessible;

(f) how do "bush veterinarians" and herder health "specialists" operate? Who are they? Where do their drugs come from? What do they do best and worst? How feasible would it be to create training programs for them? What kind of training programs would be most appropriate?

In addition to this special study, the Central Rangeland and Bay Region projects should be encouraged to carry out similar research. Various mechanisms are conceivable, including financing under an eventual livestock sector grant.

PROGRAM 2

IMPROVEMENTS OF FACILITIES AND PROCEDURES AT THE PORT OF BERBERA

PROGRAM 2

IMPROVEMENTS OF FACILITIES AND PROCEDURES AT THE PORT OF BERBERA

SUMMARY

Some 80% of Somalia's livestock exports go through the Port of Berbera. A substantial share of total cost of an export animal is shipping costs. So inefficient operations at the port reduce Somalia's competitiveness and hence reduce returns to local herders and traders. It is at the port and its hinterland that animal health controls have to be exercised, to prevent export of unhealthy animals. The inadequacy of health controls at the ports puts Somalia's exports industry at risk in the Saudi Arabian market.

To address these critical problems, four projects are proposed:

- o construction of a multi-purpose water system capable of meeting all Berbera's needs;
- o construction of a separate livestock pier and associated loading and holding facilities;
- o construction of new facilities and introduction of improved procedures for inspection/vaccination/certification of export stock; and
- o a study of policy and administrative measures to reduce marketing costs related to shipping.

IMPROVEMENTS IN LIVESTOCK MARKETING INFRASTRUCTURE AT THE PORT OF BERBERA

Introduction

Berbera is the main port for the shipment of Somalia's livestock to its principle trading partner, Saudi Arabia. Table 5 shows its predominant position. Jeddah is only a seventy-two hour trip from Berbera, while the Ports of Mogadishu and Kismayo are much further away, Kismayo to Jeddah taking about 10 days. Only because so much of the export livestock is routed through the Port of Berbera has it been chosen for detailed analysis here; similar problems exist at the other ports, and conditions there should be analyzed as we have done here for Berbera.

Natural conditions in Berbera and its immediate environs are extremely severe, much more so than at the Ports of Mogadishu and Kismayo. These conditions must be taken into account when deciding what is needed to support livestock shipping. The temperature is typical of sub-desert areas. The most critical period is in June, July and August when the daily average temperature exceeds 35° C and the mean maximum temperature is above 40° C. In these months, Berbera processes and ships about a quarter of a million sheep and goats. Berbera is also subject to hot winds (the "Kharif") that blow from the Gulf of Aden and produce critically hot

Table 5

LIVESTOCK EXPORTS BY PORT, 1982

PORTS	CATTLE	CAMELS	SHEEP	GOATS
Berbera	60,193	3,948	659,308	652,851
Kismayo	51,011	5,262	4,500	4,516
Mogadishu	45,706	6,158	44,680	44,678
6 small ports in six months	385	nil	21,744	17,313

Source: Department for Development of Livestock Marketing - Mogadishu.

temperatures and exceedingly dry air. The average annual rainfall is 61 millimeters; in several months there is no rain at all. These natural conditions make water supply not simply a convenience but a critical necessity. It also makes imperative the provision of related services. Somalia's major livestock port has been operating for years without adequate water for all its needs.

Given such difficult physical circumstances in a port that has so primordial a role in the export of livestock, Berbera merits priority attention from the point of view of national economic interests. The construction of livestock-related facilities and the provision of reasonable services are necessary to maintain the current level of livestock exports and to expand export sales. Berbera's present services and facilities are clearly inadequate. Water supplies are sparse and irregular in distribution. The water table on which the town and its environs depend is increasingly saline. The holding areas and loading facilities are small in size and in severe disrepair. Livestock quarantine facilities are too small and run down. Even if these facilities were in good condition, they would still be grossly inadequate for Berbera's needs. They were built over a generation ago by the British colonial administration. The British quarantine system had a limited objective: to process animals that were to go to British installations in

the Persian Gulf. Most of the export livestock in those years was shipped from points up and down the coast, in the ubiquitous dhows, which at the time brought trade goods to small coastal settlements and picked up livestock and other exports. The British Berbera facilities were never designed to carry the large volume of animals that is now being exported from the North exclusively through the Port of Berbera. In addition to being poorly suited to present needs, these limited installations are in poor condition.

Somalia's export competitiveness is crippled by such facilities and by inefficient operations. In a more general sense, Berbera as the main livestock port is a major bottleneck to the expansion of the livestock industry. Not only are its basic facilities inadequate and hence, cost-raising for the industry, but it is threateningly weak in terms of its animal health certification function. Its health controls fall far short of guaranteeing that Somalia livestock are shipped in good health and free of the major infectious diseases (rinderpest anthrax, trypanosomais, hoof-and-mouth disease, etc.).

Arrangements for holding and loading of livestock are the legacy not only of the Brtish colonial past when the port served a much more modest and different function, but also a bizarre Soviet solution to Berbera's livestock trade. When the port was upgraded with Soviet assistance in the

1970s, only a single all-purpose wharf was constructed, which poorly served diverse needs. Today and for some time, the total number of berths has been inadequate. Lack of a clear policy on livestock's priority, the allocation of a berth becomes an ad hoc decision of the Port Authority. The experience has been to generally assign only one berth to livestock (which are loaded at night to protect the animals from the daytime heat). The assignment of a second berth is exceptional. Driving 20,000 small ruminants onto a pier obstructed with the paraphenalia of cranes, fork-lifts, pallets and part or all of the daytime off-loaded general cargo would be ungainly and costly if it were temporary. But it has been permanent since the new pier was built. The livestock ramp related to the general cargo wharf has also badly deteriorated. Traders report it has been too narrow since it was constructed. All of this leads to a level of inefficiency that can only give comfort to Somalia's competitors in the Saudi market.

There are three elements of this port's services problem that need attention on behalf of livestock: the deficiencies of water supply, the inefficient shared pier and the MLRF Quarantine Station for export animals.

While the focus in this discussion is on Berbera, facilities at Mogadishu and Kismayo have deficiencies too. Water supply is important and the certification process must be strengthened there along the lines indicated in the analysis of Berbera.

PROJECT 1

A MULTI-PURPOSE BERBERA WATER SYSTEM

The water supply at Berbera is being provided by an antiquated system designed for a smaller community, with a much lower level of economic activity than is now being generated in the area.

As a general principle, it is usually most economical in any community to construct a single water system designed to meet the water requirements of all current and potential consumers. In the case of Berbera, putting livestock interests first, this would be a water supply adequate to meet the peak demands of livestock movement through the Port of Berbera. Other users include the city and Port of Berbera and the Somali military and naval establishment at Berbera. The only recent construction in Berbera is the U.S.-financed $45 million improvement to the Port of Berbera itself. We know little about this project except that it is said to include two 350 meter berths.

With the four water users and the needs of the U.S. defense project to be served, the first step for the design team should be to determine the current and forecast demand for all major users in the area. In the case of livestock, note that the pattern of demand for livestock industry water consumption is highly skewed. The system designed has to handle not average livestock exports, but the three-month

Hadj-Ramadan export peak. Once a realistic projection of water demand is established, the design team should then consider several options with regards to the source of this water.

There has been a proposal to meet Berbera's water needs by bringing an appropriately-sized aqueduct from areas back from the coast, where it is said that large water catchments could be built. These, it is said, contain enough water during the rainy season to supply all needs during the entire year.

A second option is to rely on aquifers. There is the possibility of drilling deeper and in some other location, perhaps not as close to the Gulf of Aden as present sources, and away from potential saline infiltration.

There is a third option which should be given immediate attention. It would be likely that the U.S. Defense Department-financed port improvement, whose construction crews are now (August 1983) assembling in Berbera, would make some substantial provision for the water supply of a facility of that size. Can this facility be integrated into a single water system? There may be good reason why such an establishment would have its own water supply. If this is the case, the Berbera multi-purpose system would focus on the town, the port, the livestock industry and expected future sources of demand. It appears, for example,

the cement plant on the edge of the city is inoperative, among other reasons, because of an inadequate water supply. Some additional future demand may come from that source.

In addition to water in adequate supply, there is also need for substantial improvement in the water reticulation (distribution) system. The current facility is so inadequate that increasing the volume of water alone would not solve the problem. The existing piping network also has to be upgraded.

We assume that the USAID design-engineering-feasibility teams that are working on the livestock quarantine facilities and the holding, shipping facility would coordinate with the team working on the water system. Each of the proposed Berbera improvement projects are, in fact, closely related to another.

The current practice in Somalia is to have one of two Somali agencies deal with water facilities. The Ministry of Mineral and Water Resources is responsible for the administration, management and maintenance of the larger urban water systems. The Water Development Agency constructs small town and rural systems. When small systems are completed they are turned over to the local government for management. The municipal government of Berbera is not equipped administratively or financially to run such a system. The purpose of the improvements could be diminished if it was operated

to generate revenue for favorite municipal projects. This system's purpose is to support an efficient quarantine station and a more efficient port. Hence, U.S. assistance should make provision for the system's operation and maintenance at least over some reasonable span in the future.

The West German government has been particularly active in the construction of city and town water systems in Somalia. There are five town water systems scheduled and described as "financed" in the 1982-86 Development Plan. One of these towns, Bosasso, is east of Berbera on the coast. This town will have a new water system during the present plan period. Berbera, a more important economic center, does not even appear in the current national economic program.

There might well be some way by which German expertise and interest in water systems could be applied to this particular problem in the port of Berbera. Most certainly, the benefits of West German or American capital assistance in a multi-purpose water project in Berbera would yield higher rates of return than those generated in the smaller towns.

PROJECT 2

LOADING AND PIER FACILITIES FOR THE LIVESTOCK INDUSTRY

We have made various references to the interrelated problems of the pier facilities, water system and quarantine services at the Port of Berbera. Our attention here is specifically directed toward loading and handling livestock quickly and efficiently.[1/]

The pier used by livestock and its loading facilities is so inefficiently laid out that it is hard to understand how it happened. One must conclude that the Soviet upgraders of the port in the 1970s simply failed to take livestock needs into consideration. The basic facility is a general cargo pier, handling up to five ships. On this pier are two large, enclosed warehouses and heavy-duty cranes. Off-loaded cargo is stacked in the open air. Whatever the nature of the cargo, docking, loading or unloading should be continuous and quick. Total berths available cannot meet all needs. There is an ongoing competition between livestock and other cargo, much of which arrives under specific priority mandate related to defense, refugee foodstuffs, etc. Livestock is taken for

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1/ A major cost element in exporting to the Saudi market is the cost of shipping; it is probably around 20% of total cost of the loaded animal in Jedda. The major element in lowering shipping costs is speed in loading, unloading and turnaround -- permitting to ship a maximum number of roundtrip services between Berbera and Jedda in a given period. Slow loading and turnaround is reflected in high shipping charges.

granted, has no defender and usually is displaced. Livestock carriers other than the two Saudi lines are given low priority. The Saudi lines have maintained the closest of ties with port mangement and are said to have the best access. One current carrier informed the team that this relationship was also used to tie up competing carriers, making their costs excessive. Getting the livestock off the general cargo pier will give general cargo more space. It will make livestock independent of competitors for berths. A pier built for livestock is more economical than a general cargo facility. It is much lighter and cannot be used by any other cargo. At night, once a berth is available, 20,000 sheep and goats, camels and cattle are driven out of a too small, waterless beach-side holding area onto a single narrow tressle over the water and discharged onto the general cargo pier where the animals move in and around whatever is there - cargo, equipment, etc. In the process, according to traders, animals jump or fall into the water through rusted holes in the trestle fencing, and sheep or goats are sometimes injured when cattle follow them on the narrow structure. The process is slow and damaging to stock, and hence costly.

This problem is compounded by the fact that during the peak shipping periods there are several ships seeking to pick up livestock cargo. It would require the wisdom of

Solomon to make economically rational decisions as to which ship should have priority at the dock.

As long as these facilities are intermingled, efficient handling of livestock will not be possible. We propose, therefore, that the design team consider alternative solutions. One is to explore the feasibility of relying on the new docking facilities coming from the U.S. Defense Department construction project in Berbera. This may increase the total berth space available, or the configuration of berth space in a way that would guarantee, at least in peace time, adequate berthing for even peak shipments of livestock.

Although this solution, which requires no incremental capital costs, is economically attractive and could remedy the problem, as a long-run solution it presents administrative inconveniences of a fundamental kind. The problem of shared facilities would be that any conflict between livestock industry needs and general cargo needs would have to be resolved by the Port Authority, with a strong likelihood that, for various reasons, the interests of the livestock industry would be made secondary.

From the point of view of best meeting the needs of livestock industry, there is a solution which was proposed in the mid-1970's in the Hunting Study: an independent livestock pier with holding yards that are adequate in terms of

space, water supply and shade. This would be the keystone which, with a number of related measures, would achieve faster loading as well as rapid access and departure for the serving of livestock carriers. The cost of a specialized pier is lower than virtually any other type of docking facility. Livestock ideally should be conveyed along a ramp in the direct order of their entry into their respective compartments aboard ship. (The current use of the general cargo pier results in a confusion of animals on the pier with a constant necessity of sorting and keeping thousands of sheep and goats in their appropriate grouping).

At any rate, a specialized livestock pier would be lightweight; it would not require deep footings. It is recommended that the design team give it most careful and serious consideration, taking into account the Hunting proposal, attached as Annex V. The Hunting design and cost estimates (in 1976 prices) attached are reproduced in this Annex. It is not clear which kind of pier (the Hunting variant or a more conventional livestock model) would be cost-effective. The design team should evaluate these options.

Whatever option is chosen, it is crucial that any new facility be designed in direct relationship to the waterside holding area, which would be the staging point for the driving of animals along the rampway aboard ship. The pier and this

holding area have to be thought of as an integral unit. The goal of this project is to provide holding and loading facilities that will allow safe, rapid handling of the four species of animals that are shipped out of Berbera.

It is also crucial that project definition in this matter should not be decided upon without the criticism and suggestions of the Livestock Traders Association.

PROJECT 3

IMPROVING PORT QUARANTINE FACILITIES AND LIVESTOCK HEALTH CERTIFICATION PROCEDURES

As noted, the Saudi market for Somali livestock is threatened by many factors, among them, high costs and related low productivity due to inadequacies and uncertainties in basic services and infrastructure deficiencies of all kinds. The most dangerous threat, however, comes from the health side. The May 1983 action by Saudi Arabia which embargoed cattle imports from Somalia is indicative. The Saudis claim that rinderpest is present in Somali cattle. The Saudi government expressed a desire to visit Somalia to investigate health conditions for animal exports from that country. This indicates the urgent priority that this issue demands. In fact, this is not a project like the others. It is a sine qua non, a kind of insurance policy for everything else being done in the livestock sector. For without it, the whole market in Saudi Arabia could be shut off overnight.[1/]

1/ There exists an International Zoo-Sanitary Code (refer to Annex VI, International Animal Health Standards for Trade Stock) which, among other things, outlines necessary health procedures in the export trade for livestock. The code requires that veterinary and frontier posts and quarantine stations be provided and staffed by exporting countries so that animals affected with or suspected of being affected with an epizootic disease can be detected and isolated, vehicles that transport livestock and livestock products can be disinfected, and the veterinary service can make clinical examinations and obtain specimens of material for diagnostic

(footnote con't. next page)

This problem is of recent origin. Until a few years ago, the Saudi livestock market was relatively undifferentiated and unsophisticated. But this has changed in the past decade. Saudi Arabia now has a great variety of livestock-related industries. Many of these are based entirely on imported stock, none of which are immune to the traditional diseases of transhumant animals, such as those raised in Somalia. The Saudis have also begun to develop veterinary capacities so their controls are now much more effective than they used to be. They have also begun to impose higher health standards generally. All of this means that there is emerging a much higher standard of health requirement in the Saudi market. This is true of well-established exporters as well as newcomers. In brief, there is now in Saudi Arabia a complex animal population

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(Footnote continued)

purposes from live animals or carcasses of animals affected or suspected of being affected with disease.

In accordance with the wish of importing countries, exporting countries must isolate, vaccinate and observe trade livestock before exportation. The period of isolation and observation varies according to the particular disease or set of diseases for which the animals are held in quarantine and the requirements laid down by the importing countries. Two weeks is usually the minimum quarantine period. Detection of disease among trade stock by importing countries is grounds for curtailment of imports from supplying countries until the latter are able to ensure that livestock destined for export are properly vaccinated and have been closely observed under quarantine. (Holtzman, op cit.)

and an important set of industries related to livestock trade which depends on animals not resistant to disease and which the Saudis are determined to protect. This new fact raises grave dangers for Somalia, as we have mentioned earlier.[1/] The new circumstances automatically tend to favor imports from countries with higher standards as a matter of course, such as Australia.

There exist three major tools for animal disease: prophylactic vaccinations in the field; emergency vaccination response capacity to contain local outbreaks of epidemics; and, final control at ports.

The first instrument (prophylactic vaccination) requires a periodic vaccination with vaccines of assured potency, and nearly complete coverage. Inasmuch as some livestock diseases are carried by wild animals, this activity - even if it could be perfectly executed - would leave many uncertainties. In fact, most poor countries have had very little success in this kind of activity.

1/ If the Saudi government were to discover the presence of unacceptable levels of rinderpest in Somali livestock, and act accordingly, the only alternative to complete loss of that market would be the inauguration of another rinderpest campaign like the OP-15 of the 1970s. This is a complex, expensive operation that couldn't be done in less than several years.

In general this problem is exacerbated in Somalia because the presumed beneficiaries (herders) are known to be reluctant to have their animals vaccinated. This resistance is fed by a constant flow of rumors. One incident, much talked about in late April 1983 in the Shebelli region, is said to have involved the death of 150 newly vaccinated animals. This kind of incident would certainly contribute to herder and trader reluctance to have their animals undergo vaccinations.[1/]

The second instrument is crash response to localized outbreaks of contagious disease. Capacity to mount such a response is a minimum requirement if the periodic prophylactic vaccination programs are not regularly carried out. The crash vaccination response requires a network of communications and ready availability of equipment which also makes heavy strains on most poor countries' administrative capacity. The process calls for the reporting of any suspicion of a contagious disease by

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1/ EBA, "Encouraging the Private Sector", 1982 - p.82 has the following description of a compulsory vaccination incident observed in 1982: "One traveler in the north came upon what seemed to be an ambush. A group of soldiers were holding an accumulated herd of about 750 animals, so that a vaccination team could do its job. Herders trying to slip away were forced back at gunpoint. The vaccination team had no crushes and wrestled with one animal at a time, taking over four minutes for each vaccination in some cases. After an hour of thrashing about, some 25-30 animals were innoculated. The team and the soldiers, tiring of the exercise, packed up and left."

the herder himself or by a MLRF agent. The lack of capacity of regional and local laboratory facilities now generally is covered either through diagnosis by observation or by a second crash response ability. Observation alone cannot always make a determination between some lesser ailments and a highly contagious one. To use the MLRF mobile diagnostic laboratory, the veterinarian returns to his office and communicates by telephone with the Mogadishu-based mobile diagnostic lab group.

Problems with this particular type of crash response should not detract from the importance of this vaccination capacity to Somalia.

The third and last line of animal health defense is the port-oriented inspection/vaccination/quarantine process. Animals are transported under a certification of good health to the port, where they receive a final inspection quarantine and they are certified as free from disease. This certification is attached to the shipment's bill of lading as animals are loaded aboard ship and dispatched to Jeddah. This process begins with the entry of herds into a two week period of quarantine control in the area of Hargeisa/Burao, the first step toward movement into the port and to international shipment.

It is ironic that animals who have survived the rigors

of their first year on the natural range, and then from three to six years of transhumant migration, are given the protection of vaccination against the most prevalent contagious diseases only several weeks before they are delivered to consumers in the importing market.

Progress in strengthening the quarantine certification system can be made only if the deficiencies and difficulties of the present system are fully appreciated.

Here is the way the present system works. Take, as an example, a herd entering the environs of Burao for eventual export via Berbera. The herd is held in Burao, where the exporter awaits notification that a letter of credit has been approved. This notification comes from his agents in Jeddah. When that notice is passed to the trader in Burao, he immediately goes to the Ministry of Livestock, Range and Forestry Veterinary Services in Burao and asks that his herd be inspected and approved. The Burao establishment has approximately 42 employees but has no functioning diagnostic laboratory; facilities completed more than two years ago have never been fully equipped, nor has there been staff to operate such a laboratory. The veterinarian then makes arrangements with the trader to inspect the animals that are proposed to be shipped - in this example a consignment of 1500 sheep. The stock now enter into a two-week quarantine process; a period of isolation. Sometimes the export herd is in an area used by the Ministry, sometimes it is put on property controlled by the trader. At the end of the

quarantine period, the veterinarian should inspect the animals. (This may be difficult in practice; Ministry vehicles are limited and there is not always enough fuel to provide the mobility necessary to enforce established health procedures). Based on this examination, he prepares a chit which says that trader X, owner of 1500 sheep, has had this flock inspected and that they are in good health on the date the certificate is issued. This Certificate of Movement will allow entry of the herd into the Port of Berbera. But it has to be taken by the trader or his agents to Hargeisa (220 kms away) in order to be certified by the Regional Veterinary Director. With the Certificate of Movement in hand, the trader is now able to move his animals from the Burao region to the Port of Berbera - a distance of 177 kms. Because of uncertainties regarding shipping schedules and the necessity of feeding fodder (trucked either from Hargeisa or Burao) to export stock, animals are not shipped to Berbera unless a ship with appropriate space is arriving. They are held in the Burao area, in this example, until the trader's agent in Berbera announces that his shipment is scheduled for the ship that is to arrive on a given date. The trader sends his herd of sheep to Berbera in trucks.[1/]

1/ In recent years there has been an increasing trend to use trucks for the transport of sheep and goats, and even cattle, to Berbera. The more hardy camels who can cover up to 100 kms a day without regular water stops are still trekked to port. It should be noted that with the dispatch of the trader's animals aboard trucks, he has had to anticipate his needs for fodder for an uncertain duration of time (including the shipping time aboard livestock carriers to Jeddah).

As the 1500 head of sheep arrive in Berbera, they are led to the quarantine station. If that is overburdened or crowded, the herd may be taken to the exporter's holding area outside of the quarantine zone. This is, in effect, open desert. Conditions in the quarantine station can range from orderly to chaotic, depending mainly on the volume of livestock traffic.

The basic facilities of the station were constructed by the colonial British administration in the 1960s. Among major deficiencies, the water supply is inadequate for the volume of stock now being processed. There is also inadequate shade. As noted elsewhere, Berbera is dangerously hot and extremely dry. In a three month period, the mean maximum temperature is over 40° C. Such heat endangers the survival of cattle and sheep.

Export stock is held in quarantine for 48 hours. But the broken fencing and open gates mean that there is no real quarantine; the facilities do not prevent the mixing of animals. If there is a delay in the arrival or docking of the ship, as often occurs, the animals must be discharged into the holding area adjacent to the single trestle which is used to convey livestock to the general cargo pier for loading at night. Inasmuch as there is virtually no water available in this holding area and little effective shade, animals are sometimes turned back to their owners who put them in their own corral area. Therefore, these areas are devoid of any effective segregation scheme for the

"certified" healthy animals. To a disconcerting degree, animals in various stages of this process become intermixed, leaving room for doubt as to the health status of an exported animal. It should be noted that the quarantine station has no operating laboratory and its staff, on recent inspection, consists of one port veterinarian, one aide, and seven laborers. The station sometimes has to process over twenty thousand animals a day during peak shipment periods. Given these general circumstances, there is little possibility of a credible health guarantee.

There are thus a number of weak links in the existing system of certifying that exported animals are free of disease.[1/]

- The animals may not all be vaccinated with required vaccines because of intermittent supply.[2/]
- Effective inspection by the Burao veterinarian may be rendered difficult by lack of transport. Also, he has no laboratory.
- The Certificate of Movement lacks specific identification; it simply says that a certain number of animals are authorized to move.
- Once at the port, the quarantine facilities do

1/ This is based on the Burao example.

2/ Sheep, goats and camels are no longer vaccinated at all in Burao, for reasons which are not known. Ruminants and cattle are vaccinated with "the vaccines on hand".

not prevent mixing of "certified" animals and others. Nor is there isolation capacity for animals suspected of disease.

Improvement in the certification process is the first and critical requirement for achieving better animal health. Such improvement will have two results. It will first of all signal to the Saudis and other potential importers that Somalia is giving serious attention to its animal health population. And it provides a point of entry into the vaccination system, which can lead to improvement down the line. At present, the certification process is Somalia's only opportunity to keep dubious livestock out of the export market. This is an objective which is in the interest of the whole industry in both the short and the long run. The sooner the producer and trader know that it will be unacceptable to move un-vaccinated or diseased animals through the ports, the more attention they will give to preventive medication and the more receptive they will become to vaccination.

If animals are in a port zone with an inaccurate certification, or illness unreported in their Certificate of Movement, MLRF will have signals that improvements are needed in district and regional certifcation processes and/or personnel. The rejection of animals and their destruction because of communicable disease, will

create pressure on traders and through them back to pastoralists. The willingness to participate in prophylactic vaccination programs of MLRF will increase.

While it will take a number of years to effect better control of livestock diseases in the field through prophylactic vaccinations, this is probably the best way to accelerate that process.

For reasons cited, improvements in certification procedures are the necessary first step in the animal health area. Because of its urgency and the enormous potential for damage if action is not taken, a special project should be undertaken in this area. USAID should immediately designate a design team, separate from the team to be appointed for the overall livestock program, to define a project for improvement of certification/ quarantine procedures, including the construction of necessary facilities. A first step is designing the physical facility improvement and getting that underway.

A transitional improvement program should be worked out with the MLRF. This would include repairs to fencing, emergency water points, perhaps processed by a tanker. This type of short-term upgrading is necessary due to the long time it will take to design and construct new facilities. It would be valuable for USAID to reach agreement with the MLRF on an approach to improve

procedures for the certification process.

For the permanent facility, the design should include provision of a reasonable laboratory, low-cost and effective shade, appropriately distributed water, appropriately sized and organized holding and quarantine areas, a physical plant meeting international standards.

The design team should consist of the following personnel. One engineer, experienced in the design of livestock sanitation control systems and facilities for large scale livestock shipment (someone who has dealt with multi-species shipments), would be especially valuable. A second member should be someone with management or consulting experience in livestock vaccination organization and procedures. Specific experience with certification procedures for export animals would be highly desirable. This person might be a professional veterinarian or someone with relevant administrative experience. The team should also have some input from a livestock eocnomist to assess the cost-effectiveness of alternative facilities and systems. All three members should have LDC experience. This is an especially critical requirement, to avoid overbuilding, and to take into account the particular constraints and demands of the Somali environment. Direct experience in dry tropical area livestock shipping problems would be extremely helpful.

PROJECT 4

STUDY OF INSTITUTIONAL FACTORS

Improving the physical facilities at Berbera and other ports would resolve some, but not all of the problems of high cost shipping. Important institutional issues must be addressed.

A very large number of players are involved in the making and executing of shipping policy in Berbera, as at other ports: the MLRF, the National Range Agency, the National Port Authority, the Somali Shipping Agency, the Somali Shipping Line, the Ministry of Marine Transportation, the Somali-Helenic Shipping Line, the Association of Livestock Loaders, the Association of Livestock Tenders, the Municipality of Berbera[1/], the Ministry of Mineral and Water Resources, the Ministry of Posts and Telecommunications, the Ministry of Finance, the Central Bank, Refugee Affairs (Berbera), and the Ministry of Defense.

The interplay of these various agents creates not only a situation of great complexity, but also leads to uncoordinated policies and to inefficient and high-cost shipping operations.

1/ Mogadishu and Kismayo.

The Hunting Report in 1976 described shipping problems in all their dimensions. Regarding physical conditions, the report notes:

> "...(Livestock)... Loading berths create a serious bottleneck to loading operations... Only one vessel at a time is allowed to load and this leads to poor turn-around times for livestock ships waiting in the harbor. Occasionally a second berth is made available during the peak export season. Dry cargo wharf facilities are totally unnecessary for livestock loading operations..."

Dry cargo and livestock,as noted earlier, are intermixed.

> "Most statistics suggest that there is sufficient tonnage of shipping for the Somali livestock trade available in the Red Sea, but Berbera port cannot attract a required proportion of the tonnage or the required type of vessel... the more efficient livestock carriers require very quick turn-around rates... this is not possible under the present system in Berbera."

It does not seem that the situation noted by Hunting has changed substantially in the past eight years. There are a few changes. Somali Shipping Line now has several carriers in operation. A concession was granted to a new firm, the Somali-Helenic Shipping Line, which grants it monopoly rights in the Port of Berbera. But this is a theoretical monopoly only and has not been effectively

exercised. While there is considerable uncertainty about how things work in this area, the observations of the earlier report appear to retain their pertinence. Then, as now, effective shipping competition does not exist, and an adequate defense by traders and herders of the livestock industry's interest does not seem possible. Even if traders were allowed to compete with the other claimants for the shipping traffic, institutional arrangements would make it difficult for them to do so. The Hunting Report noted that Somalia:

> "...is losing out badly in export sales by not using... cheaper, more efficient vessels... livestock shipping is separated from livestock marketing... resulting in an inevitable lack of interest and attention in the livestock industry's special problems in shipping."
>
> While the Somalian National Line (SNL) has responsibility for shipping operations, the Government Shipbrokering Agency, the Somali Shipping Agency (SSA), is responsible for the chartering of vessels. This agency has actively discouraged the use of modern livestock transports through price fixing arrangements with two Saudi Arabian Shipping Lines, Bakahashab and Babub Lines... the two lines are given priority in loading and berth space in return for which they charge a set price... well above market rates.
>
> ... These monopoly shipping arrangements are reinforced by the Somali Ports Authority Policy of giving berthing priority to SSA ships over ships not under SSA Charter... Rather than attempting to enhance Somalia's

> export position the SSA has effectively reduced Somalia's competitiveness by colluding with Saudi Arabian importing interests.1/
>
> .... Under the (SSA) agreement they (the two Saudi lines) charge fixed freight rates and are given priority in loading in berth space; given the normal conditions at Berbera, this represents an important competitive advantage. Other lines operating include Kuwait and Greek ships, but these are on a time charter basis between the ship's captain and the exporter. Many traders are reluctant to run the risk of individual time charters, partly because of the port delays that can occur at Berbera, and prefer to wait for space on the SSA Charters.... (As a result)... the Saudi Lines have a virtual deface to monopoly of the trade. They are protected from serious competition by the Somali Port Authority Policy of giving berthing priority to ships covered by the SSA agreement and by exclusive rights to SSA booking facilities which account for nearly ninety percent of all traffic. Loading arrangements are also at the discretion of the SSA. Under the conditions often experienced in Berbera Port, this makes it difficult for other shippers to compete."

Finally, the following observations by the Hunting Report continue to be distressingly relevant at the present time.

> "Both shippers and exporters complain in turn, of the poor coordination between availability of loads and

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1/ Hunting et. al., Op. Cit., pages 110-114.

> shipping space, respectively. The situation of recurrent shipping shortages, followed by shortages of livestock available to load, is due largely to the SSA's inability to undertake efficient scheduling of ships and livestock supplies. Sailing time to and from Jeddah does not vary substantially, and the supply of livstock from Hargeisa to Berbera is also fairly stable, especially since the opening of the new road. SSA's poor performance is a serious problem, especially considering that indirectly it handles eighty percent of the country's exports. Because SSA cannot produce any sort of shipping schedule for exporters, it charters only on a per trip basis rather than taking out extended time charters which would reduce unit costs substantially. The reason given by SSA for failing to take up the cheaper time charters was the unreliability in supply of livestock. This does not correlate with the known facts regarding export supply from Hargeisa and Burao."

It should be recalled that shipping costs have a heavy weight in the total costs of production and marketing - around twenty percent for small ruminants. Thus, the cautionary note that follows, also taken from the Hunting discussion, is still valid.

> "Somalia's export competitiveness may well be affected by not using the cheaper and more suitable livestock ships available. A critical factor in the Australian takeover of the Iranian and Kuwait import markets was the cheap and reliable shipping that it has chartered."

Just how this matter of shipping policy can be addressed is not immediately apparent; knowledge is

limited and many interests are involved. One place to start would be a study of policy and administrative measures to reduce the costs of shipping.

The study should determine policy changes that would increase the operating efficiency of the ports, with the specific objective of reducing unit costs of livestock exports. The investigators should consult with all relevant parties, including livestock traders and past and present shipping line operators. Major questions include the following:

- the level and recent evolution of shipping costs and comparisons with shipping costs from comparable ports;
- the existence of "unfair competition", via formal or informal agreements between shipping lines, between the ports authority and specific shipping lines, between Saudi lines operating with large fuel subsidies and other potential entrants to the Saudi market;
- alternatives for shipping policy, e.g., allowing open competition in ship charter, encouraging traders to charter their own vessels, signing an agreement with one carrier for a given volume of year-round animal traffic at fixed rates while encouraging competition among all lines for peak period charters;

how can a reasonable priority be assured for berthing of livestock carriers if a seperate livestock loading dock is not constructed?

PROGRAM 3

ASSISTANCE TO PRIVATE LIVESTOCK TRUCKERS, FODDER PRODUCERS, AND OTHER ENTREPRENEURS

PROGRAM 3

ASSISTANCE TO PRIVATE LIVESTOCK TRUCKERS, FODDER PRODUCERS, AND OTHER ENTREPRENEURS

SUMMARY

Major services to the livestock industry are provided by ancillary producers - private truckers, fodder producers and other entrepreneurs. These entrepreneurs are constrained by three main factors: lack of credit, lack of access to foreign exchange, and lack of access to technical assistance.

This program consists of the following projects:

- an assessment of the hypothesis that large gains in productivity and, hence, significant marketing cost cuts are possible by introduction of more efficient transport equipment for live animals and fodder;
- an evaluation of the proposition that transport costs would be more economical if trucks were hauling mechanically-baled grass;
- a set of activities to encourage smaller-scale entrepreneurs, particularly in the dairy industry: a credit facility at the Somalia Development Bank, access to U.S./Somalia Commodities Import Program, and access to technical assistance.

Introduction

Fodder and trucking are inputs whose importance seem to have been largely ignored. Both are extensive activities whose efficiency has a significant impact on the cost of livestock marketing.

By reason of Berbera's "lion's" share of total livestock exports, the long distance from the marshalling towns of Hargeisa and Burao, and the paucity of natural vegetation around the port leads us again to apply our analysis to Berbera, the "biggest" problem. This analysis will also serve to guide the design team when it considers similar assistance in Mogadishu and Kismayo as well.

The use of large trucks for carrying livestock long distances was once common. This more specialized equipment, larger than is currently in use, at one time would travel into Ogaden to pick up stock for delivery to Berbera. Military action in this area is said to have absorbed most of this equipment. Border conflicts today make such trucking services impossible.

There has been much improvement in the Berbera-Burao and Berbera-Hargeisa road links. These paved roads probably are the best in the nation. They

now would permit use of lighter, larger, more fuel-efficient livestock trucks. A large part of total livestock shipments is trucked to Berbera from Burao and Hargeisa. The two newer roads already represent substantial cost-cutting progress. The trucks in use, however, are small and inefficient. More efficient use of these roads is possible if appropriate trucking equipment was available.

PROJECT 1

LIVESTOCK TRUCKING

Trucking activity is very extensive. We estimate the total cost of current livestock trucking service to Berbera to be about 120 million Som. Sh. or U.S. $8 million annually (see Table 6). This estimate is based on the Burao-Berbera trajectory; a distance of 148 kms. The probable number of round trips is over 60,000 a year. This shows how big the trucking business is. The share of trucking cost in total marketing cost was about five percent in the mid-1970s. Fuel and transport equipment price increases probably more than doubled it by the early 1980s.

Both the austerity imposed by war and foreign exchange scarcity have restrained the normal replacement of trucking equipment, which would otherwise have been of increasing efficiency. Virtually all livestock trucking is private [1/] and receptive to upgrading innovation. In defining an assistance strategy, a number of considerations are relevant.

1/ The Livestock Development Agency has several specialized livestock carriers that accomodate up to 500 goats or sheep at a time. This is a legacy from the time when the LDA was a main participant in livestock marketing.

Table 6

ESTIMATED LIVESTOCK TRUCKING TO THE PORT OF BERBERA, 1982[1/]

SPECIES	NUMBER EXPORTED (1982)	PROPORTION TRUCKED	NUMBER OF TRIPS	COST OF TRUCKING (Som Sh)
Sheep	652,851	100%	29,700	56,430,000
Goats	659,308	100%	30,000	57,000,000
Cattle	60,193	70%	3,000	5,700,000
Camels	3,948	Trekked	nil	nil
TRUCK LOADS OF LIVESTOCK			62,700	119,000,000 Som. Sh.

1/ One truckload carries 22 goats and sheep or 13-14 cattle: trucking cost Burao-Berbera 1800-2000 Som Sh per load

Source: National Range Agency, traders, exporters, and dilal (agents) in the Burao livestock market.

First, there exists a trekking alternative to the use of trucks for the delivery of animals to the port of Berbera. Trekking has an advantage for the economy in that it is equipment, and hence, fuel free. The Berbera port, however, discourages trekking since its livestock facilities are so poor. Even shipping schedules are not available. Discussion with traders and exporters indicate the need for a water point between Berbera and both Burao and Hargeisa. They argue that the best location would be at the foot of the escarpment that marks the start of the desert (about halfway to Berbera). It would be relatively inexpensive to build such wells. We suggest that this proposal be discussed with the National Range Agency and traders in both towns. It might be feasible to turn operating management of the facility over to the Traders' Association. This would be a good test for the Traders' Association's capabilities.

With respect to more efficient truck transport, modern livestock carriers of various sizes would be used on the good paved roads. These would be lighter, generally larger, faster to load and unload, and substantially cheaper to operate.

PROJECT 2

BALING AND TRUCKING OF LIVESTOCK FODDER

Exporters must provide fodder for their stock from its entry into a port until it is landed in Saudi Arabia, some 7-9 days later. As we will demonstrate, this requires some 23,000 tons a year for the stock passing through Berbera (see Table 7). This 1982 fodder supply (over 23,000 tons) would thus make a very large hay stack. It is impressive that most of this hay is collected by private operators working largely independently.

This livestock fodder is produced as follows. Groups of harvesters or cutters operate in a variety of grass sources, from range to river valleys. They sometimes organize themselves as "cooperatives". More often they are contract employees of traders. There is also the practice of an entrepreneur having his own labor force, usually on a piecework basis, to produce fodder for sale to traders. The grass is cut by hand and tied in bundles of approximately 110 pounds. It is said to require thirty five bundles to make a truckload. These can be sold in the field for 2000-3000 Som. Sh. (see Table 8). One man is able to cut one bunch or bundle in one hour. The labor cost of this cutting operation for one truckload is thus about 700 Som. Sh. One "cooperative" was reported to consist of 280 hectares, producing between 60 and 80 truckloads

Table 7

ESTIMATED FODDER CONSUMED BY BERBERA LIVESTOCK SHIPMENTS, 1982

Species Shipped	Number Shipped	Daily Ration (lbs.)	Estimated Days Fed	Estimated Fodder Consumed (lbs.)
Goats	652,851	3.3	9	19,400,000
Sheep	659,308	3.3	9	19,600,000
Cattle	60,193	22.0	9	11,900,000
Camels	3,948	22.0	9	800,000
			TOTAL	51,700,000 lbs. or 23,000 tons

Table 8

ESTIMATED COSTS 1/ OF FODDER BY TRUCKLOAD (3850 Lbs.)

	Per Truckload (Som. Sh.)	TOTAL 13,420 Truckloads (Som. Sh.)
Truckload, bundled fodder at field 2/	2500	33,550,000
Trucking Burao-Berbera	1900	25,498,000
Price per truckload, delivered Berbera	5500	73,810,000

1/ These are current costs, secured from fodder "crops" and traders in Burao.

2/ Includes labor costs of 700 Som. Sh. per truckload.

of fodder a year, yielding a gross revenue of 175,000 Som. Sh.

There is a variety of innovations available for improving the efficiency of fodder production and its transport. We will consider some of these briefly.

1. By baling in the field, transportation costs could be cut by 75%. One trader,who has been baling his fodder for close to two years, has found that four truckloads of fodder in bundles can be accomodated in one truckload of baled fodder. In addition to the savings of transporting baled fodder, there are labor savings in the loading and distribution of fodder aboard ship.

2. By baling with appropriate equipment, a higher nutrient content is retained. The traditional practice is to leave hay unsheltered in the open. The traders' hay corrals in Berbera are also uncovered. If hay is baled and kept under the most simple cover, its nutritive value is not lost.

3. The only baler that we observed keeps a farm tractor at a fixed location and has hand-cut grass brought to it. An appropriate diesel engine on a small trailer would be a more economical power source.

4. With baled and properly-stored hay, the trader could reduce the volume of his higher nutrient fodder, or maintain the "traditional" ration to help the animals better resist loss of weight and skin tone.
5. In areas where grass is cultivated, it should be possible to introduce more nutritive varieties. This would seem especially relevant for dairy producers. Some of the dairymen operate controlled grazing for milk cows and sell fodder off their dairy lots when prices are at their peak. If this fodder were made from richer grass, it could probably command a premium price.
6. In the case of baled fodder, it should be mentioned that little protection is required to have these positive nutritive effects. It is virtually impossible to protect unbaled grass from exposure to sun and even occasional rain. Only a zinc-roofed, open-sided pole structure is needed. This could be done in Somalia if baling was more widely introduced.

Some mechanical baling of fodder is going on in Somalia. A few balers are said to be in the hands of public agencies. The military does use tractor-trailers appropriate for moving baled hay. In the private sector

fodder is cut by hand rather than by machine because field surfaces are extremely irregular. There is no widespread mowing, raking or baling. Most traders would probably operate balers as a fixed processing unit to which the hand-cut grass could be delivered. This is a good adaptation to Somalia's conditions.

In summary, there are a number of innovative, potentially cost-reducing technologies that would lower the cost of fodder. These include more appropriate trucking equipment, baling with its associated power source, an increased nutrient content in fodder as well as the possible limited introduction of richer species of grass. 1/

A feasibility study should establish the cost of operation of current equipment and the savings possible by using more appropriate trucks. The study should help decision-making by analyzing the two types of entrepreneurs involved: a) traders who use their own trucks and supplement them with fee-based commercial trucking, and b) smaller traders and commercial traders. Many of the former have access to cash or credit and foreign exchange. They should be responsive if significant cost-savings can be demonstrated from more appropriate equipment. The smaller traders and commercial traders may need access to credit, as in the credit window recommended in Project 3, below.

1/ The potential saving by baling is 75% of estimated current trucking costs of 19 million Som. Sh. Modern fodder carriers can probably carry 20-30 times as much as currently-used vehicles.

PROJECT 3

ASSISTANCE TO OTHER PRIVATE ENTREPRENEURS

Here we deal with a smaller project relating to private individuals and groups who, using their own resources, identify a viable domestic market and organize themselves to compete with traditional producers and products now in use and experiment in new areas of activity.

This is a group which is innovative and risk-taking. It consists of individuals who are committed to improving on-going agricultural operations. They are often already organized into associations, sometimes called "cooperatives", as a means of pooling private investment capital.

The most prevalent example is in dairying. The availability of milk from traditional sources (villagers with several head of native milk cows) is inadequate. The result of growing demand and relatively inelastic supply from traditional sources is that fresh milk prices have been rising and become especially high during the dry season. This is when traditional milk sources are at their lowest output. This is one key

market at which these entrepreneurs should aim.

However, they are also active on their farms in private water containment and control, in fodder cultivation with controlled grazing, and even some irrigation for the production of premium sheep and goats for the domestic market.

Limited access to foreign exchange, to credit, and to technical information and assistance prevents these entrepreneurial propensities from fuller development. There would appear to be three main obstacles.

1. Under the circumstances just described, they have pretty much reached the limits of their own available capital and have used such limited credit as has been available from the Somali Development Bank.
2. This group as a whole is not heavily engaged in livestock trade for export. They therefore don't have access to informal sources of foreign exchange nor, for various reasons, are they able to benefit for CIP-provided foreign exchange.
3. They have limited access to technical assistance or professional literature which is addressed to their needs.

This project has to address itself to each of the main constraints facing the entrepreneurs of this type.

Credit has to be made more easily available. A design team should assess the feasibility of special provisions designed to meet the credit needs of the group of entrepreneurs considered here, such as:

- an arrangement that some of the planned $18 million agricultural credit for the Somali Development Bank be allocated on a bloc grant basis for experimental small technology projects in private water control, controlled grazing, fee-supported artificial insemination services, windmills, solar-powered pumps, and well-drilling equipment;
- strengthening the regional offices of the SDB aecess to technical assistance, for project evaluation and loan administration to small entrepreneurs;
- decentralization of SDB lending, to the extent of giving lending authority to the regional offices.

Foreign exchange is generally not accessible to members of this group. The design team should determine channels and modalities for allocation of CIP resources to these individuals, singly or in association.

To lessen the constraints deriving from lack of knowledge and contacts, two possibilities should be explored.

(A) Visits to Somalia of technically specialized people from the U.S. or other countries, people in activities pertinent to the Somalian livestock-related entrepreneurs. For example, a series of meetings in regional centers might draw substantial numbers of people with actual or nascent interest in such matters as:

- fodder cultivation, improvements in fodder varieties, mechanical baling and storage of fodder;
- recent developments in the technology of transport for animals;
- techniques of water control and storage in dry regions - e.g., special catchment design.

(B) A second proposal to be assessed is the attachment of technical assistance, mainly involving

short-term consultants, to a special credit window and/or CIP facility created to target loans/foreign exchange to private entrepreneurs of the type discussed here. Either the CIP administrative unit itself, or the SDB, or both might provide technical assistance to borrowers in the areas considered above.

PROGRAM 4

LONGER-TERM PROJECTS

PROGRAM 4

LONGER-TERM PROJECTS

SUMMARY

This program involves two small projects. One proposes to continue USAID support for the Afgoi Experimental Breeding and AI project. The project has taken a long time to get going, and performs some needed functions at low cost. It can play a role in helping private entrepreneurs. Continuing assistance should provide an occasion for dialogue on MLRF spending priorities.

The second project is for infusion of ideas on market economics into Somalia's universities. It proposes to bring to Somalia a visiting lecturer in agricultural (or livestock) economics.

PROJECT 1

CONTINUATION OF SUPPORT FOR THE BREEDING IMPROVEMENT AND ARTIFICIAL INSEMINATION (AI) LABORATORY AT AFGOI

This project should continue USAID support for the artificial insemination laboratory at Afgoi. The laboratory should be distinguished from the MLRF Animal Production Department (APD) livestock breeding centers. These five units are outreach stations that were established a decade ago to carry the results of the Afgoi laboratory out to herders and dairymen. Since the laboratory has not yet really produced many tested, extendable results, these centers have no clear function today. The Afgoi program, however, does have real functions.

Despite USAID support, the Afgoi laboratory has a history of a slow start and fitful progress. Technical problems have plagued the project and it has suffered from lack of technical assistance continuity. However, as a result of ongoing USAID support today and for close to two years, the operation has been reorganized, staffed with a highly motivated U. S. technician who has

successfully placed the liquid nitrogen generator[1/] on line and kept it operational, and has now put some order and activity into the program.

The station's mechanical shop keeps vehicles, generators and instruments in operation. The Somali staff has enthusiasm and this reflects the increasing activity going on around them. Motivation of staff has been further strengthened as a result of brief staff trips arranged by the AI management to Kenya to observe AI operations there.

Another tangible achievement of the Afgoi laboratory is the existence of an expanding population of young cross-breed bulls who are in strong demand from even the most remote parts of the country. These animals are not miracle stock. They simply carry genetic characteristics promising quicker maturity and an increase in milk yields. Sensibly, the laboratory has put most of its attention on dairymen's problems. This subsector of the livestock industry is currently the most dynamic, most open to innovation and most profitable for private rancher-dairymen who are responding to the growing consumer demands for fresh milk.

1/ The liquid nitrogen resource conceivably has potential uses yet to be fully explored. It can be used, for example, for skin control by doctors and hospitals (particularly certain skin cancer); it could be a solution to the problem of portable cold chain which is needed for such things as mass measles vaccinations or for livestock vaccine portability. There may well be other applications of liquid nitrogen in Somalia.

Many visiting technicians have given rather reserved judgments about the efficacy and priority of the Afgoi facility. Nonetheless, it would be a shame if this hard-earned reserch capacity, just now beginning to function effectively, was not sustained and even selectively expanded. This modest, low-key operation is needed to support any future breed improvement work. It justifies itself on this ground alone and on the related high start-up costs of a future replacement operation. For this reason we recommend continuing USAID support.

The center now has the capacity to supply new breed bulls to rancher-dairymen around the country. And it is also able to deliver AI semen from these local animals using a subzero portable cooler that has a nine-month life without recharging with liquid nitrogen.

Field interviews suggest that interest exists in the following areas:

- new breed lines to counter in-breeding tendencies which are occurring as a result of continued use of improved bulls and their offspring from as far back as 1972;
- bulls or AI capacity to accelerate the upgrading of dairy stock for which there is a good cash market now;
- AI equipment and training as an adjunct to already diversified private rancher activities including milk production, sheep and goat production, fodder growth and the production of milk cows for sale;
- there is also some interest in private sales of the AI service in local areas.

In the Afgoi area the laboratory has made contact with farmer-herders who have provided several cows for AI service. These are smaller and more traditional operators, understandably conservative. But if the results are favorable, they will go ahead with more AI activity. This field testing is highly valuable for the future.

The Afgoi Center can provide some impetus to the development of private sector activity in the dairy industry. It can do this by experimentally putting out better breed bulls with private ranchers in various regions as pilot programs, for example. It can also supply AI cylinders to several private ranchers for use in their regions on their own stock and for a fee by other farmers. They can also continue their cross-breeding experiments in order to develop minor improvements in the existing cow population.

The project should consist of support for a resident American technician; financing for some travel for staff to other African countries as a means of stimulating awareness of developments in these places; the operations of an advisory panel who would make two visits a year in conjunction with the Ministry to review progress in Afgoi, make suggestions for innovations and improvements, review the results of field level applications of artificial insemination, and hear and review reports on the results of the distribution of improved bulls.

The continuation of USAID support for the Afgoi program should be conditional on the successful establishment of a systematic dialogue with the MLRF about certain needed changes in Ministry policies.

1. The breeding stations have nothing to distribute. The MLRF should therefore carefully consider closing them down and allocating their budget to higher priority tasks.

2. The planned acquisition of motorcycles for the AI field team should be reconsidered. It would seem prudent to postpone those purchases until experience confirms the need for the implied expansion of extension activity. These issues might appropriately be discussed in the framework of the Livestock Sector Coordinating Group whose establishment was recommended earlier.

PROJECT 2

EDUCATION IN MARKET ECONOMICS

In the university system of Somalia there is presently little instruction on how markets function - or at least how trained economists from industrial countries understand them to work. Nor is there available in relevant ministries, banks, or private firms much analytic capacity on economics, even in the most straightforward economics of project appraisal. In various institutions central to any livestock strategy, such as the Somali Development Bank, economic analysts able to apply simple project appraisal ideas and techniques are in extremely short supply.

This project would provide financing for one visiting professor of agricultural or livestock economics. The purpose would be to provide a "leavening effect" in the university community, a source of information and analyses on how the functioning of agricultural/livestock markets is perceived by trained economists. The academic in question might be based at the University of Somalia, or SIDAM, or at some appropriate government agency like the Planning Ministry or the Central Bank. In any case he should undertake the following activities:

- a series of lectures on livestock economics at the National University School of Veterinary Medicine and Agriculture. (They are the future administrators of livestock programs, the shapers of policy in the sector.);
- an appropriately aired series of lectures for students of the Institute of Animal Sciences, which is the training school for animal health assistants;
- collaboration with the project appraisal staff at SDB to improve approaches to the appraisal of requests by private sector entrepreneurs for SDB financing assistance.

Given the conditions in Somalia, nine month appointments are probably optimal. The project design team should assess whether the recruitment of an appropriate long-term person is feasible. It may be necessary and desirable to organize this effort by using short-term people who are easier to recruit. There is a long tradition in the university of using "vacataires" - short-term visiting professors. It would presumably be easier to find higher level people on a short-term basis. However this is approached, the economist in question should have

access to a special visiting lecture budget, which he would, with USAID approval, use for visiting lecturers for one-two week stays.

That this kind of intellectual outreach can be effective is suggested by experience with the special English language program given by USIS for high-level Somalis. This program attracts a sizeable audience, and the attendees have been exposed to guest lecturers who have generated enthusiastic and useful discussion.

The program should be for three years. It should bring to Somalia 27 person months of teaching by the principal lecturer and nine person months of short-term (two week) lectures. The estimated cost is $400,000.

The design team should investigate the feasibility and serviceability of adding to the project a training component, bringing Somali students to the United States for degrees in agricultural (livestock) economics.

ANNEX I

SCOPE OF WORK

A. Objective

The objective of this contract is to appraise the Somali livestock marketing system, including the GSDR policy fram work within which it operates, and define possible assistance activities to: (1) improve the livestock system as a whole and (2) support the broad participation of the private sector in livestock-related activities.

B. General

In context of this contract, marketing activities will encompass activities throughout the livestock sector that influence or impinge upon the successful sale of livestock in the export and domestic markets. USAID/Somalia has identified the need for a livestock economist and investment analyst from the Contractor to work as a team. These experts will be supported by a consultative group consisting of members of the mission staff, Somali officials, and representative herders, traders and merchants active in the livestock sector.

The contractor team will collect, appraise and use as appropriate information secured from contracts with Somali officials and technicians; contact with officials and technicians of bi-lateral and multi-lateral donor programs in Somalia; and contact with Somalis in the private sector. Special attention will be given to information provided by herdsmen, traders and merchants involved in livestock production and sale.

C. Scope of Work

1. Review available literature related to livestock marketing in Somalia and talk to officials in the Ministry of Livestock, Forestry, and Range (MLFR), the Ministry of Commerce, the Ministry of Planning and the Somali Shipping Agency to gain an understanding of the livestock trade in Somalia, through discussions of Government policies affecting livestock marketing. Identify problem areas influencing the livestock marketing chain.

2. Talk with officials and members of the Livestock Traders Association, herders, and other individuals concerned with

ANNEX II

MLRF
ANIMAL HEALTH DEPARTMENT
DRUG PRICES
(as of January 1983)

Drug	Disease	Prices
Novidium	Trypanosomiasis	4 sh/dose
Ethidium	ditto	4 sh/dose
Berenil	ditto	5 sh/dose
Samorin	ditto	8 sh/dose
Naganol	ditto	30 sh/dose (Camels only)
Rintal	Endoparasites	1.5 sh/tablet
Penicillin	Bact. Infections	30 sh/100 cc
Oxytetracycline	ditto	35 sh/100 cc
Suphadimidine	ditto	1 sh/gram
Coopertox	Ectoparasites	400 sh/gallon
Neguvon	Endo & Ectoparasites	no charge
Bloat Remedy	Bloat	no charge
Terramycin as spray, ointment or pressaries	Bacterial infections	no charge
Healing oil	Wounds	no charge
Atropine	Poisoning	no charge

MLRF, Animal Health Department

Source: Cowiconsult - Interim Report, July 1983, p. 70.

These prices are said to be "very low and only cover the actual cost plus a nominal profit..."

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livestock production to evaluate the traders organizations with respect to their activities, and influence on livestock production and marketing.

3. Review the current literature on the present Somali market intelligence system from the importing countries down to the livestock producers, including what information is disseminated to traders and to what extent it is used.

4. Recommend possible uses of CIP in support of public and private livestock activities.

5. Design short and mid-term strategies and identify appropriate public and private sector specific activities for possible assistance in livestock marketing - including production activities that impact on sale of livestock in domestic and foreign markets. Policy changes necessary for implementation of such activities should be clearly stated.

6. Collaborate with other team members in developing PID-level documents, defining specific activities in livestock marketing designed to increase the participation of the private sector, and alleviate problems in the system.

7. Evaluate the present system of financing livestock marketing including letters of credit for the export of livestock; and note (1) changes which would improve the system, (2) policy changes which are necessary, and (3) determine short and mid-term strategies for system improvement.

ANNEX III

ESTIMATING LIVESTOCK MEDICATION REQUIREMENTS

There are at least two reasons for an accurate estimate of livestock medication requirements over the life of this program:

a) USAID and other donors need a basis for the size of the livestock medication grant.

b) In the first year of the program, for the purpose of smooth transition and an uninterrupted medication supply, the Ministry and private business will both be importing drugs. Importers and distributors should have an idea of the value of drugs needed and planned for by public agencies during the transition.

There are difficulties inherent in forecasting these requirements. The data base has the following problems:

a) There is an unknown volume of contraband medication entering Somalia regularly. It is necessary to be sure all donated drugs are counted. These tend to be large amounts of very few types, capable of saturating the market for a good while.

b) Foreign trade data are probably not dependable even as a corroborative source of information. Import declarations traditionally reflect misclassifications because of error or design. Classification of drugs by type or applicable species puts a strain on processing clerks that they cannot meet.

c) Records on drugs sold or given away by the MLRF is one good general guide. But these records are often derived indirectly. For example, the MLRF records - e.g., a recorded 9,659,000 dip treatments in 1981. This figure most certainly was derived from drums or gallons of dip imported, and not animals treated. Another factor indicating uncertainty is the revision in published time series. The following figures come from two successive reports of the MLRF.

RINDERPEST TREATMENT

	MLRF Series (1982) 1/	MLRF Series (1983) 2/
1980	127,000	712,638
1981	106,000	706,097
1982	-- --	492,388

Source: 1. MLRF as published by the Ministry of Planning, 1982.
2. MLRF as quoted by Cowiconsult, July, 1983.

Some estimate is nevertheless needed to determine the overall size of the Medication Fund and to guide imports by private and public participants in the early stages of the program, before the market has given indication of actual demand.

The best way to proceed would be for the members of the Livestock Sector Coordinating Group to aggregate by type, known imports including those of the MLRF. This would produce a measure of annual drug imports better than any information available now. For its own use as well as for private importers and distributors, the LSCG should set out regional district drug supply targets by species and medication type. This list would be limited to the transition and widely distributed.

There is a lot of material on various aspects of livestock medication availability. We attach Tables from various sources.

ANNEX III Table 1

ESTIMATED ANNUAL COST OF TREATMENTS RENDERED BY MLRF, USING U.S. PRICES 1/ 2/

Treatments	Numbers Rendered (000)	Estimated Cost Per Treatment ($U.S.)	Total Cost ($000)
Trypanosomiasis (Novidum)	1,477	2.00	2,956
External Parasites (Coopertox)	9,006	0.15	1,351
Internal Parasites	1,314	1.00	1,314
Non-Specific Diseases	1,954	0.50	875
		TOTAL	6,496

1/ Average 1979-81.

2/ Based on CIF cost, U.S. Drugs, delivered Mogadishu. These estimates are based on invoices for the Bay Project.

ANNEX III Table 2

ANNUAL VACCINATIONS AND TREATMENTS 1970-1981

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Vaccinations ('000)													
Rinderpest	1,716	1,817	1,143	1,205	863	1,132	1,202	863	403	794	127	106	
CBPP	607	228	525	595	391	817	721	168	559	759	7	311	
Anthrax	128	48	83	273	595	470	368	148	439	782	282	108	
Blackquarter	94	84	64	127	183	296	94	67	378	475	282	425	
CCPP	-	-	-	597	386	321	619	73	6	475	427	687	
Foot and Mouth Disease	-	-	-	36	35	30	57	3	-	-	-	-	
Haemorragic Septacaemia	-	-	-	86	83	80	118	251	251	330	693	547	
Sheep Pox	-	-	-	-	-	-	-	199	31	156	50	79	
Erterotoxemia of Sheep	-	-	-	-	-	-	-	-	190	-	-	-	
Bovine Paratyphoid	-	-	-	-	-	-	-	190	190	-	-	-	
Total	2,545	2,177	1,815	2,919	2,536	3,146	3,179	1,952	2,537	3,771	1,873	2,263	
Treatments ('000)													
Trypanosomiasis	164	184	178	434	1,430	1,699	1,822	933	685	1,542	1,737	1,154	1,100
External Parasites	555	293	2,291	6,905	12,163	13,794	9,277	6,954	8,542	6,736	10,622	9,659	11,600
Internal Parasites	166	114	138	847	750	712	449	437	453	405	711	2,826	1,500
Non-Specific Diseases	-	-	-	284	680	1,024	1,228	564	659	1,445	2,620	1,185	540
Total	885	591	2,607	8,471	15,023	17,228	12,776	8,888	10,339	10,128	15,690	14,824	14,740
Diagnostic samples handled by Central Veterinary Laboratory	200	-	2,200	800	2,000	3,400	2,400	8,400	7,400	14,000	N.A.	N.A.	

Source: Veterinary Service, Table adapted from "Livestock and Range Sector Study," Ministry of National Planning.
Holtzman, (Somalia), op. cit., p. 55.

ANNEX III Table 3

VACCINATIONS 1980-82

Vaccine	1980	1981	1982
Rinderpest	712,638	706,097	492,388
C.B.P.P.	213,001	301,670	19,660
B.Q.	441,682	425,115	338,518
Anthrax	409,397	108,486	186,996
H.S.	486,196	546,927	305,687
C.C.P.P.	1.085,540	686,927	728,562
Sheep Pox	-	79,420	147,935

ANNEX III Table 4

PROJECTED VACCINE REQUIREMENTS 1984-1993

(million doses p.a.)

Vaccine	1984	1985	1986	1987-1993
Rinderpest	5.0	5.0	5.0	1.0
C.B.P.P.	5.0	5.0	5.0	5.0
C.C.P.P.	3.0	3.0	3.0	3.0
Anthrax	0.15	0.15	0.0	0.15
Black Quarter	0.5	0.5	0.5	0.5
H. Septicaemia	0.5	0.5	0.5	0.5
Sheep Pox	0.2	0.2	0.2	0.2
Newcastle	0.2	0.22	0.24	0.3
Fowl Thyphoid	0.2	0.22	0.24	0.3
All Types approx.	14.8	14.8	14.8	11.0

Source: MLRF, Cowiconsult, op. cit., Tables 3/3 and 4/1.

ANNEX III Table 5

NON-CONCESSIONAL MEDICATION IMPORTS IN 1982

(Letters of Credit issued to MLRF)

Letter of Credit	Amount of Currency	Item	Country of Origin	Somali Shillings
1	DM 269,304	Syringes	West Germany	1,885,128
2	DM 313,110	Berenil	ditto	2,191,770
3	DM 432,575	Naganol	ditto	3,028,025
4	£ 9,540	Strep-pen	UK	286,200
5	£ 5,835	Penicillin	ditto	175,050
6	£ 63,033	Novidium	ditto	1,890,990
7	£ 54,273	Anthelmint.	0	1,628,190
8	$ 90,160	Tetracycline	USA	1,352,400
9	DM 441,000	Naganol	West Germany	3,087,000
10	DM 313,110	Berenil	ditto	2,191,770

Source: MLRF, Animal Health Department

ANNEX III Table 6

DRUGS RECEIVED BY MLRF ANIMAL HEALTH DEPARTMENT FROM FOREIGN DONORS IN 1982

Donor	Drug	Amount in Shillings
FAO	"Rinthal" Anthelmintic	900,000
ODA	"Nilverm" Anthelmintic	643,750
ODA	"Samorin" Tryps Drug	2.934,000
ODA	Ethidium Tryps Drug	1,830,000
ODA	Coopertox Acaricide	4,500,000
Total	Shs.	10,808,500

Source: Cowiconsult, Interim Report, op. cit., p. A69.

ANNEX III Table 7

MLRF VETERINARY DRUG SALES BY REGIONS, 1981

REGION	REVENUE (So. Shs.)
Middle Juba	780,092
Lower Juba	395,084
Bakol	176,829
Bay	450,640
Gedo	309,553
Middle Shebelli	988,501
Lower Shebelli	676,981
Hiran	578,545
Galgadud	268,589
Mudug	185,036
Nugal	287,668
Sanug	272,255
Togdher	597,318
West Galbed	816,069
Bari	271,127
Mogadishu	622,105
Total So. Shs.	7,676,392

Source: MLRF, Cowiconsult, Interim Report, op. cit., Table A.3/7.

ANNEX IV

Prepared for the Field Team
by P. Procella, DVM
USAID/Somalia 4/28/83

BRIEF SUMMARY AND ANALYSIS OF ANIMAL HEALTH PROJECTS IN SOMALIA: DIRECTLY RELATED TO IMPROVEMENT OF ANIMAL PRODUCTION

1. PROJECT DESCRIPTIONS

A. Projects which have had at least limited success -

1. Animal Serum and Vaccine Institute (SVI): This project began in 1969 and has continued to the present with UNDP/FAO technical assistance. There is an expatriate veterinarian project director and several expatriate veterinarians on the staff. The facility is equipped to make a variety of vaccines in sufficient quantity to fill the needs of Somalia, and also to do diagnostic work. Aside from shortages of chemicals and spare parts for equipment which occur occasionally, the main problem faced by the SVI has been the lack of cooperation on the part of the Veterinary Field Service in administering the vaccine to the animals in the country and in submitting samples to the laboratory for analysis. The laboratory does not directly supervise veterinary teams doing diagnostic work and depends only on the Somali Animal Health Service for field support.

2. Veterinary Laboratory at Hargeisa: The British Veterinary Team worked from 1969 until they were asked to leave Somalia in 1972 in establishing a laboratory and field service in Hargeisa. Both the laboratory and field service were directly supervised by British veterinarians, and after the team left, field work and operation of the laboratory declined markedly, although the Regional Veterinary Service still does some clinical work and vaccinates animals on request, and the laboratory is still staffed.

3. JP-15 Rinderpest Vaccination Campaign: In the five year period 1970 - 75, approximately 80% of the cattle population in Somalia was vaccinated against rinderpest and CCBP. Large amounts of equipment were imported for the project, and the vaccination teams were supervised by German veterinary advisors. When the project ended, the number of vaccinations given decreased due to lack of funds to maintain vehicles and equipment and lack of interest on the part of the Somali Veterinary Service.

ANNEX CONTINUED

4. Veterinary Laboratory at Kismayo: The Federal Republic of Germany started this project in 1977 to establish a laboratory in Kismayo and rehabilitate the Veterinary Service in the Lower Juba Region. The project has done well in setting up the laboratory and has been fairly successful in organizing the Regional Veterinary Service. The expatriate advisors have just completed their contract, and it remains to be seen how well the service will function without their support.

B. Failures

1. Trans-Juba Project: This project was funded by the IDA and ran from 1974 - 81. The veterinary component relied heavily on construction of veterinary centers and dispensaries which were to be run by the Somali Veterinary Service. The project lacked adequate on-site supervision and had numerous problems with the construction phase.

2. Northern Rangelands Development Project (NRDP): The Kuwait Fund for Arab Economic Development began this project in 1976. It ended in 1981. Once again, problems in construction, lack of adequate management and lack of supervision were important factors in making the project unsuccessful. Only one expatriate veterinarian was assigned as field officer for more than 3 of the northern regions, and the post of technical manager in Mogadishu was only filled for a year and a half of the project.

3. Inter-Riverine Development Project: This was a marketing project financed by the European Development Fund which contained a veterinary component consisting primarily of construction of veterinary centers to be operated by the Somali Veterinary Service without expatriate assistance. Poor planning of the centers and lack of adequate funds for their maintenance and lack of interest on the part of the Veterinary Service have led to most of the centers not being used now.

C. Still to be rated

1. The Bay Region Agricultural Development Project has had a veterinarian technical advisor working for 2 years. He has reorganized the Veterinary Service in the region, started operation of 2 mobile vaccinating teams, and has initiated a plan to train nomad para-veterinarians. The project will continue to 1985 and includes plans for establishing clinics, check points for monitoring stock movement, and a mobile laboratory. It will take well organized programs and continued interest on the part of the Ministry of Livestock to continue operation of the project after the project ends.

ANNEX CONTINUED

2. Central Rangelands Development Project: The veterinary component of this project is just beginning, with technical assistance provided by the GTZ. It contains the same basic proposals for improvement of the veterinary service as the Bay Region and previous projects, and it will be interesting to see how it comes along.

II. CONCLUSIONS

In analyzing the success (or lack thereof) of these veterinary projects, the first observation to be made is that those which were least successful were those with the least direct management and supervision of the field service. The second point is that even the more successful projects declined in efficiency of operation after the project ended and the technical assistance was over. The third point is that in the projects which relied heavily on construction of new centers, housing, etc., the whole project was often seriously delayed by problems in getting the construction done on schedule.

These observations lead to the conclusion that Somalia is not at a point now to carry on large projects which involve a large operating and maintenance expense. Funding for the Ministry of Livestock is very limited, and priority is given to meeting GSDR obligations in current externally-assisted projects rather than in maintaining projects which are no longer financed by outside donors. Project design should therefore be as simple as possible, requiring a minimum of maintenance and operating costs, with emphasis on using what is available in the most efficient manner. This means more emphasis on management and technical assistance in organization, with the end goal of creating a project staff devoted to carrying on the project goals after the end of the project.

While the simplest method of insuring the people involved in a project will be interested in carrying it on after the project ends is to involve people with a vested interest in the end results, i.e., private enterprise/profit motive, some projects should still be under government sponsorship. These include areas of public concern such as issuing health certificates and handling potentially dangerous drugs, and areas in which there is little private interest to be found, such as drug research trials, livestock census, or disease surveys, which require laboratory facilities operating without direct benefit to the animal producer. These projects must be considered carefully to assure continued government support after the project period.

ANNEX V

5 Port Development

This is a plan for a low cost livestock dock prepared by Hunting Technical Services, Ltd. as presented in their Livestock Review, Vol. 2: Project Identification (1976.) This is an option which would free the general cargo area from animals, an advantage to general cargo and military uses.

5.1 GENERAL

As described in the Sector Review, the present facilities and operation of Berbera port are inadequate to cope with the volume of livestock traffic, and considerable delays occur. It was recommended that at Berbera one additional berth should be added, suitable for livestock shipping, and that efforts should be made to develop several small ports in Northern and Central Somalia. This would stimulate the export of stock from their hinterlands and help avoid the present excessive concentration of live export on Berbera.

The proposed project therefore comprises:-

(a) Provision of an additional livestock loading berth at Berbera.

(b) Limited development of the small ports of Bosaso and Meit, on the northern coast, and Obbia, on the Central Somalia coast some 500 km north of Mogadishu.

At present little information is available on conditions at the three small ports and on the engineering work which would be involved in their development. Thus only outline cost estimates have been presented. Detailed investigations and design would be undertaken as part of the overall project. For Berbera an outline design and cost estimates have been prepared on behalf of the consultants, by a firm of consulting engineers, Sir M. MacDonald and Partners Ltd., the main objective of their brief study being to indicate the likely capital costs involved.

5.2 PROVISION OF AN ADDITIONAL LIVESTOCK BERTH AT BERBERA

5.2.1 General

The proposed development has been planned to be relatively simple and inexpensive. For this reason a system based on floating pontoons has been chosen in preference to the construction of a new wharf, which would be both more costly and less flexible.

As shown in Figure II.5.1 it is assumed that the new berth would be installed in line with existing facilities and that ships would berth under their own power. They would moor parallel to the line of the shore and would load from a floating pontoon connected to the shore by a movable causeway, secured at the landward end on to a concrete abutment. Four timber mooring dolphins would be provided adjacent to the loading platform, for secure mooring. In the design, the average length of ship is taken to be 115 m.

In the outline design, the causeway would consist of a double single span Bailey Bridge 40 m

long with a timber deck 3 m wide. At one end it would be secured onto the abutment, which would be 5 m wide with a 1 m cross section. At the seaward end it would unload onto a floating raft consisting of nine interlinked steel pontoons, each being 5.28 m x 2.44 m x 1.22 m deep. The total size of the loading platform would thus be 15.84 m x 7.32 m, more than sufficient to handle the loading of the livestock ships. Four guide piles, one at each corner, would be put in to keep the floating platform in position. Each of the four mooring dolphins would have seven piles.

5.2.2 Cost estimates

Costs of the pontoons, Bailey Bridge and other imported items have been based on prices f.o.b. UK, with a 20 per cent addition for transport and other expenses involved in bringing them to the site in Berbera. On the advice of the consulting engineers, a 20 per cent contingency has also been added to all costs, to allow for the very preliminary nature of the design and estimates.

Table 5.1 shows the estimated costs of the development of an additional livestock berth at Berbera. Costs are estimated to total So.Sh. 1.3 million. Construction could be completed in less than one year.

Table 5.1 Capital Costs of an Additional Livestock Berth at Berbera (So.Sh. thousand)

Item	Total	Foreign Exchange[1]
Causeway (Bailey Bridge)	300	285
Platform (9 pontoons)	249	237
Concrete abutment for causeway	8	4
4 guide piles for platform[2]	52	39
4 mooring dolphins[2]	432	324
Installation of platform and causeway	43	26
Contingencies (20%)	217	183
Total	**1,301**	**1,098**

Note: [1] Calculations have been based on £1 sterling =So.Sh. 12.5.

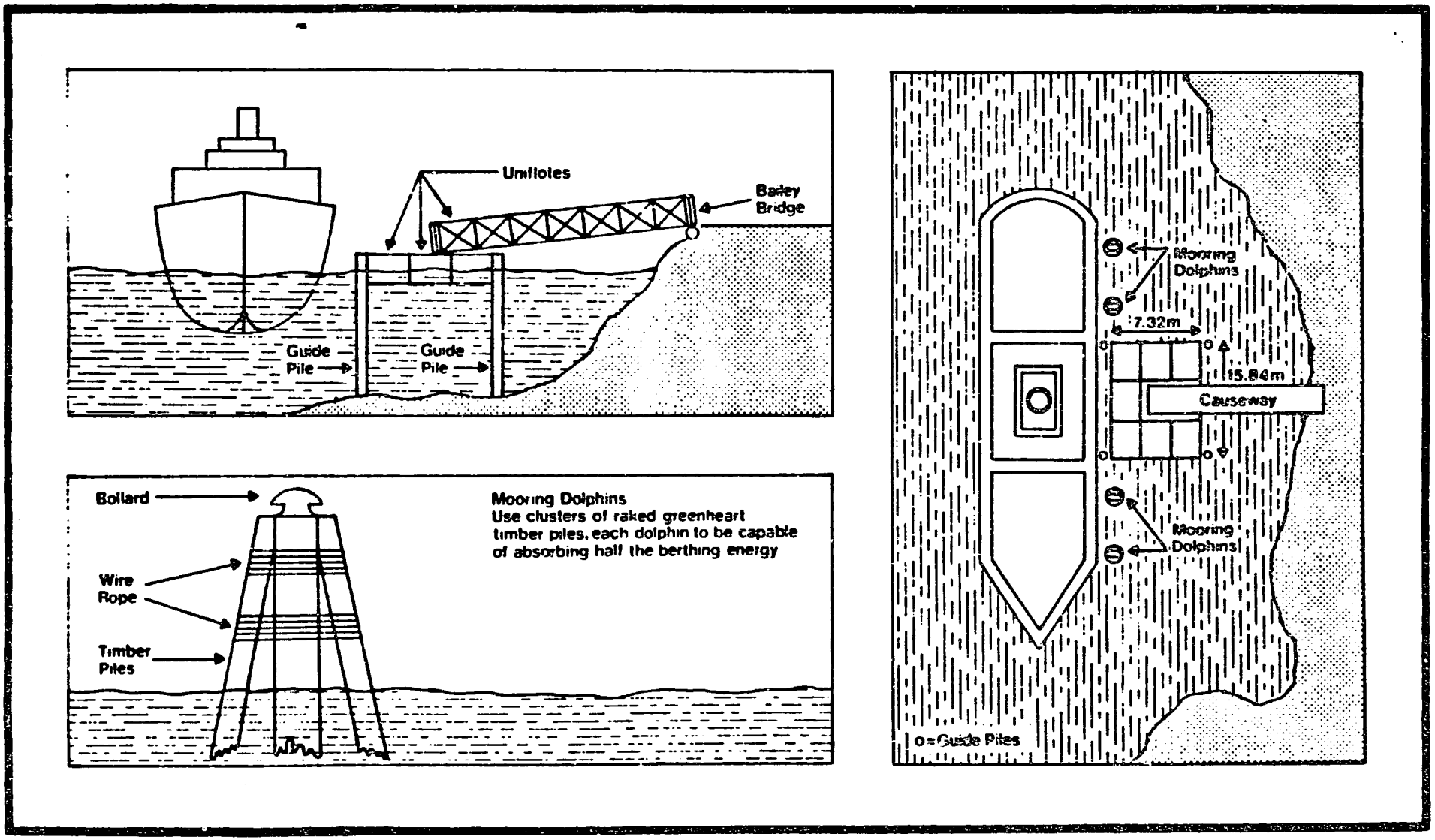
[2] The costs of labour and supervision for the installation of guidepiles and mooring dolphins are included in the price.

Recurrent costs would be low, the main expenditure being for periodic replacement of parts of the platform and for platform maintenance. The latter would involve mainly the pontoons being taken out of the water every three years for cleaning, repainting and renewal of rust protection, painting of the Bailey Bridge and certain minor tasks. Together these have been assumed to total So.Sh. 20,000 per annum. With an allowance for additional administrative staff required to operate the additional berth, the total annual cost has been taken as So.Sh. 50,000.

5.2.3 Justification

The proposed addition of one livestock berth at Berbera would be relatively inexpensive. Costs would be low in relation to those involved in keeping ships idle waiting for berths (a common situation at present) or in feeding and caring for stock kept in the Berbera marshalling yards for extra days waiting for loading.

Figure II.5.1 Livestock loading jetty



A brief economic analysis has been made of the proposed sub-project, to indicate the possible level of returns. The main benefits are considered to be:-

(a) A reduction in shipping costs for live exports, due to faster turnaround times.

(b) A reduction in expenditure per head on fodder for stock in the Berbera marshalling yards, due to a shorter average stay for animals destined for export.

(c) Some general improvement in shipping from Berbera, since the more rapid turnaround times may attract more shipping to the port. At present some ships avoid Berbera because of the risk of port delays.

Of these three main benefits, (a) and (b) have been quantified and their assumed values used in the economic analysis. The third does not lend itself to quantitative analysis, but has been treated as a general benefit to the sub-project.

(a) Capital and recurrent costs

On the basis of the estimates given in Section 5.2.2, the estimated costs of the sub-project over the 40 year analysis period taken would be as shown in Table 5.2. Installation of the new berth is assumed to be completed within one year and the platform and Bailey Bridge would be replaced every 15 and 30 years respectively.

Table 5.2 Costs Used in the Economic Analysis of Berbera Port Sub-Project (So.Sh. thousand)

Year	Capital	Replacement	Annual	Total
1	1,301	-	-	1,301
2-15	-	-	50	50
16	-	324	50	374
17-30	-	-	50	50
31	-	710	50	760
32-40	-	-	50	50

(b) Benefits

Delays due to port congestion occur mainly in the peak live export shipping season, which is during the five months from September to January. On the basis of data for 1974 and 1975, in terms of sheep equivalents 56 per cent of Somalia's annual exports of live animals are shipped through Berbera during this period. Taking average annual exports from Somalia of 1.5 million sheep equivalents, it could be assumed that 840,000 (56 per cent) sheep equivalents are exported from Berbera between September and January. Of these perhaps half are delayed due to shortage of berths and port congestion. For calculation purposes an average delay of one day for 420,000 sheep equivalents has been taken.

Allowing for loading, port delays and other factors, the present ships on the Berbera-Jeddah run take eight days for the round trip. Data for the peak shipping period of 1974, September to December, show that the average load is 12,312 sheep equivalents per ship. At the standard charge of So.Sh. 17 per head of small stock, gross revenue per trip (assuming no significant return loads from Jeddah) would be So.Sh. 209,300. Revenue per day would thus be So.Sh. 26,160.

Apart from fuel, most of the operating costs of a ship are fixed (e.g. crew wages, insurance, depreciation, interest payments) and would be incurred whether the ship is standing idle waiting for a berth or is steaming. On the basis of calculations made on the costs of ship chartering, fixed costs have been assumed to be equivalent to half the gross revenue, or So.Sh. 13,080 per day.

If, due to providing an additional livestock berth, an average reduction of one day could be made for half the Berbera-Jeddah round trips (i.e. following the assumption given above, that half the stock shipments between September and January suffer one day's delay), in theory the cost per trip could then be reduced by So.Sh. 6,540 (So.Sh. 13,080 for half the trips). In practice this saving could not be achieved in full, because of the monopoly power of the Bakhashab Line and the fact that it does not constitute a true saving unless the time saved can be productively used on other shipping work. Nevertheless, assuming some reduction in Bakhashab's fixed costs per trip and the downward pressure on shipping rates due to increased competition from other shippers, a reduction in shipping charges of one half of So.Sh. 6,540, that is So.Sh. 3,270 per trip, could be assumed. This is equivalent to approximately So.Sh. 0.25 per head of small stock exported from Berbera between September and January (840,000 sheep and goat equivalents). Total annual savings on shipping charges could thus be So.Sh. 210,000.

The other major saving due to the sub-project would be on fodder used to feed animals awaiting shipment. These stock are fed at the rate of 1.5 kg per day. At the normal price of So.Sh. 0.80 per kg, the daily cost is So.Sh. 1.20 per head. As described above, an average delay of one day for 420,000 sheep equivalents has been assumed. Elimination of this delay would therefore save So.Sh. 504,000 per annum in fodder costs.

Table 5.3 shows benefits and costs of the sub-project under these assumptions. It has been assumed that during the first year of operation of the new berth only half the anticipated savings would be achieved.

Table 5.3 Estimated Benefits and Costs of the Berbera Port Sub-Project (So.Sh. thousand)

Year	Benefits	Costs	Net Cash Flow
1	-	1,301	(1,301)
2	357	50	307
3-15	714	50	664
16	714	374	340
17-30	714	50	664
31	714	760	(46)
32-40	714	50	664

Note: ( ) signifies a negative value.

In terms of returns to the national economy, the internal rate of return (IRR) would be 43 per cent. This extremely high return is due to a combination of the potentially large benefits from removing the present bottleneck on livestock shipping from Berbera and the low costs of doing so. Even if the benefits were only half the level projected, the IRR would be 22 per cent. If capital and recurrent costs were 50 per cent higher than expected, the IRR would still be attractive, at 27 per cent.

The benefits from the sub-project would be received mainly by the livestock producers and traders, rather than by the Somali Ports Authority (SPA), which would implement the port improvements. Port dues are already fairly high and there is probably little scope for raising them further, to recover the costs of the sub-project. Some additional shipping traffic might be generated, which would increase the revenue from port dues, but only limited growth seems likely to occur as a result of the provision of the additional berth. Thus in financial terms there appears to be little prospect of the SPA recovering the direct costs involved. This is typical of many infrastructure schemes of this nature and in no way detracts from their intrinsic value to the economy.

Foreign exchange benefits from the sub-project would comprise the reduced transport charges paid out to foreign ships. Berbera port data for 1974 indicate that over 90 per cent of live exports are carried by foreign ships. It could therefore be assumed that of the total annual savings on shipping charges, So.Sh. 210,000, So.Sh. 189,000 (90 per cent) represents a saving in foreign exchange expenditure.

Foreign exchange costs would be the import component of the recurrent and replacement expenditure and the amortisation of the capital costs of the improvement works. As for the other sub-projects, it is envisaged that the capital investment would be financed by a foreign loan, to be repaid over 20 years at 10 per cent interest. Amortisation would then cost So.Sh. 153,000 per annum. Of the recurrent costs perhaps one third, or approximately So.Sh. 17,000 would be foreign exchange. Thus total foreign exchange outgoings would be So.Sh. 170,000 per annum as against benefits of So.Sh. 189,000. When allowance is made for the import costs involved in the periodic replacement of the platform and Bailey Bridge, foreign exchange costs would be approximately the same as foreign exchange benefits. Despite its potentially high economic returns the sub-project is thus not likely to make a major contribution to Somalia's balance of payments.

Effects on employment and social conditions would be negligible. A few additional staff may be recruited to operate the new berth, but the number would be small.

5.3 DEVELOPMENT OF MEIT, BOSSASO AND OBBIA SMALL PORTS

On the basis of present information these three ports have been selected as suitable for development, but it is recognised that further, more detailed investigations, may show that other small ports should be chosen in preference.

Meit and Bossaso are about 275 km and 600 km respectively eastwards along the northern coast from Berbera. In both cases much of their hinterlands have poor communications with Hargeisa and Berbera and there would be definite advantages in encouraging the export of stock through these ports instead of Berbera. Both are well situated to serve the Northern Rangelands Development Project. At present animals are shipped from these ports by dhows or small coasters. There are no proper marshalling or loading facilities.

There are no ports of any significance on the eastern coast north of Mogadishu. Development of Obbia port would improve this situation and, in combination with the proposed upgrading of the Galkayo-Obbia road, would stimulate live exports from this part of Somalia. At the moment most export stock from this region are shipped through Berbera, which is far to the north, and transport costs are correspondingly high.

There is also the possibility of developing the small port of Eyl, some 325 km up the eastern coast from Obbia. Present evidence suggests, however, that its hinterland has too small a livestock population to justify this, the likely throughput at the port being relatively low.

ANNEX VI

INTERNATIONAL ANIMAL HEALTH STANDARDS FOR TRADE STOCK

The Office International des Epizooties has prepared an International Zoo-Sanitary Code, which identifies animal diseases by priority grouping and arrangements for preventing their transmission, as well as outlining zoo-sanitary measures and formalities governing international trade in livestock and livestock products.[1] The International Zoo-Sanitary Code specifies in detail internationally accepted standard operating procedures for ensuring the health of trade stock before and at departure, in transit between exporting and importing countries, and on arrival at the importing country. The code requires that veterinary and frontier posts and quarantine stations be provided and staffed by exporting countries so that animals affected with or suspected of being affected with an epizootic disease can be detected and isolated, vehicles that transport livestock and livestock products can be disinfected, and the veterinary service can make clinical examinations and obtain specimens of material for diagnostic purposes from live animals or carcasses of animals affected or suspected of being affected with disease.

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[1] Office International des Epizooties, International Zoo-Sanitary Code, Amended Edition, 1976. "List A" diseases relevant to Somalia include foot-and-mouth disease, rinderpest, contagious bovine pleuropneumonia, anthrax, sheep pox and goat pox, bluetongue, fowl plague and newcastle disease. The most common "List B" disease in Somalia is contagious pleuropneumonia of small ruminants.

In accordance with the wish of importing countries, exporting countries must isolate, vaccinate and observe trade livestock before exportation. The period of isolation and observation varies according to the particular disease or set of diseases for which the animals are held in quarantine and the requirements laid down by the importing countries. Two weeks is usually the minimum quarantine period. Detection of disease among trade stock by importing countries is grounds for curtailment of imports from supplying countries until the latter are able to ensure that livestock destined for export are properly vaccinated and have been closely observed under quarantine.

In order to facilitate the observation of the International Zoo-Sanitary Code, FAO has proposed the establishment and operation of specific disease-free zones.[1] These are strictly delimited, carefully demarcated areas within livestock raising countries where the following physical facilities are established: structures for separating and isolating livestock, control posts, quarantine stations, shelters, feeding and watering places, staff quarters, offices, tick

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[1] FAO, "Establishment and Operation of Specific Disease-Free Zones," from the Manual on Standards of Veterinary Services, Meat Hygiene and Meat Inspection, Post-Mortem Judgement of Slaughter Animals and Establishment of Specific Disease-Free Zones, 1974.

baths, laboratories, repair shops and other necessary infrastructure. Disease-free zones are intended to be free of particular diseases, usually foot-and-mouth disease, rinderpest, and contagious bovine pleuropneumonia. The occurence of one of the specific contagious diseases in the disease-free zone results in the immediate implementation of precautions and control measures, including slaughter of affected and in-contact stock, isolation and intensive observation in the area surrounding the outbreak, suspension of exports, the investigation into the origin and possible spread of the outbreak, and the informing of the veterinary authorities of importing countries of the outbreak and measures undertaken to control it.

ANNEX VII

PERSONS MET

We have not been able to recognize dozens of others to whom we also owe a debt. In the case of contact with groups, individuals appear on this list only if we also had substantial personal contact. Therefore, we also met with some 75 individuals in groups who are not listed here.

NAME	PLACE MET	TITLE OR ACTIVITY
A.H. Bulbul	Mogadishu	Importer
A.M. Noor	Hargeisa	President, Kacaan Coop (diary)
Abdi Hussein Mohamed	Mogadishu	World Food Program
Dr. Abdi Mirreh	Hargeisa	Social anthropologist, rancher
Dr. Abdi Mohamed Elmi	Mogadishu	Import/export, former Govt. veterinarian
Abdi Thermos	Mogadishu	Director General, Min. of Commerce
Dr. Abdul-aziz	Baidoa	Deputy Regional Coordinator Bay Region Veterinary Service
Abdul Isaq	Afgoi	Livestock trader
Abdul-kadir	Mogadishu	Returned foreign worker - Iraq
Dr. Abdul Mohamed Ghouse	Mogadishu	NRA Livestock Marketing vet.
Abdullahi Haji Yusuf	Hargeisa	General Manager, Central Bank
Dr. Abdullahi Mohamed Barre	Baidoa	Technical Coordinator Veterinary Service
Abdullahi Mohamed Guled	Hargeisa	General Manager, Commercial and Savings Bank
Abdullahi Mohamud Mohamed	Mogadishu	NRA, Director Livestock Marketing
Ahmed Bodhle Yusuf	Burao	Livestock exporter
Ali Samatar Mohamed	Mogadishu	Private Sector
Dr. Ali Yusuf	Mogadishu	Driector Animal Health Serv. MLFR
Michael Brown	Mogadishu	Central Rangeland Project team
Jerry Costel & Bernie Kolp	Baidoa	Bay Region contract team

PERSONS MET CONTINUED

NAME	PLACE MET	TITLE OR ACTIVITY
Peter Conze	Mogadishu	GTZ Coordinator
John Doughtery	Mogadishu	Ministry of Planning
Farah Salah	Burao	District Commissioner
Dr. K.K. George	Baidoa	Veterinary Consultant, Bay Region Project
John Halpin	Baidoa	Tech. Coord., Bay Region Project
Alexander Hayman	Mogadishu	IBRD Resident Representative
Stephen Helming	Mogadishu	GTZ - Ministry of Planning
Issa Haji Muse	Mogadishu	Dir. Operations, Somali Development Bank
Jamal Mohamed Fariye	Burao	Businessman
Ghulan Jawery	Mogadishu	IMF Advisor to Central Bank
Girard La Bombard	Mogadishu	USAID CIP Director
M.N. Gutale	Mogadishu	Industrial consultant (Somali)
Dr. Walter Marx	Mogadishu	GTZ veterinarian, Central Range Project
Mohamed Abdulle Jamal	Mogadishu	Deputy General Mgr., Commercial and Savings Bank
Mohamed Adan	Baidoa	Businessman
Mohamed Ali Abdillahi	Hargeisa	General Manager, Somali Development Bank
Mohamed Haji Hussein	Mogadishu	Vice Chairman, Livestock Traders Association
Dr. Mohamed Haji Ibrahim	Mogadishu	Planning Div., Ministry of Livestock
Mohamed Hussein	Burao	Muruq Maal Coop (dairy)
Mohamed J. Mirreh	Burao	Import/export
Mohamud Mohamed Nur	Mogadishu	President, Somali Development Ba
Mohamed Yusuf Iman	Hargeisa	Import/export
Mohamed Hassan (Chicago)	Baidoa	Agriculture Extension Project
Osman Samatar	Mogadishu	Team LTD Soap
Osman Yusuf Farah	Mogadishu	General Manager, Somali Development Bank
Dr. Romani	Mogadishu	Asst. Project Officer, Italian Embassy
Dr. Paula Rourk	Mogadishu	Consultant, Groundwater Project

PERSONS MET CONTINUED

NAME	PLACE MET	TITLE OR ACTIVITY
Dr. Karl Schoepf	Mogadishu	GTZ Veterinary Director, Central Range
Dr. Umar Ashur	Burao	Assistant Veterinary Officer
Victor van Deegut	Mogadishu	EEC Economic Advisor
Kay Wilkes	Mogadishu	Contract team leader, Central Range Project
Dr. Yusuf Dahl	Afgoi	Manager, government dairy farm
Yusuf Mohamed Farah	Baidoa	Deputy General Manager, Bay Region Project

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