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**MID-TERM EVALUATION OF THE VETOPHAR PROJECT
IN NIGER: ESTABLISHMENT OF A CENTRAL NATIONAL
VETERINARY PHARMACY AND A SALES AND
EXTENSION NETWORK
ENTENTE FUND LIVESTOCK SUBPROJECT N-E-1**

Prepared for
The Mutual Aid and Loan Guarantee Fund
of the Entente Council, Abidjan, Ivory Coast

Development Alternatives, Inc.
1823 Jefferson Place, N.W.
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PREFACE

This report presents a mid-term evaluation of a Fund veterinary pharmacy project in Niger.^{1/} The project, known as Vetophar, is one of eight subprojects funded through the Entente Fund's Livestock Production Project. It has been sponsored by the United States Agency for International Development, REDSO/Abidjan.

The evaluation was carried out by a team composed of the following members:

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Data gathering at Entente Fund headquarters took place on November 4 and 5, 1980. Data gathering and site visits in Niger occurred from November 6-21. Field trips were made to Maradi, Zinder, Tahoua and Tchín-Tabaradin. Oral reports of the team's findings were presented to the Niger Livestock Service on November 22 and to the Entente Fund and USAID/REDSO in Abidjan on November 24.

This report was prepared by Roger Poulin and Albert Sollod of Development Alternatives, Inc., at the company's headquarters in Washington, D.C., in December 1980.

The team is indebted to the following individuals for their generous support and cooperation in conducting this evaluation:

- The Government of Niger and the Livestock Service, especially Dr. Ibrahim Ari who provided useful insights on the value of Vetophar to livestock production;
- The management and staff of Vetophar and its regional pharmacies; and
- The USAID/Niger staff that provided useful suggestions and vehicular support which were critical to the success of the evaluation;

^{1/} The full title of this subproject is "Projet de création d'une pharmacie centrale veterinaire et d'un reseau de distribution et de vulgarisation."

- Officers of the Entente Fund and USAID/REDSO/Abidjan;
- Personnel of the World Bank and the USAID range management projects; and
- Herders consulted by the team.

See Annex A for the names of persons consulted.

The opinions expressed in this report are the responsibility of the authors and do not necessarily reflect the views of the Entente Fund or the Government of Niger.

PART ONE: PROJECT DESCRIPTION

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The purpose of this project is to create a commercial distribution system for veterinary medicines in Niger. Prior to the start of this project, all veterinary medicines were imported by and distributed through the Livestock Service of the Ministry of Rural Development. The Livestock Service has the overall responsibility for improving the health and productivity of livestock in Niger. (See Annex B for an organigram of the Livestock Service.) Its largest and most important program consists of the annual campaigns against the major contagious diseases: rinderpest, pleuripneumonia, and to a much lesser extent, anthrax, blackleg and pasteurellosis. The control of the first two diseases can do more to increase livestock production than any other possible animal health intervention and, consequently, has been, and continues to be, the highest priority concern of the Livestock Service.

In addition to the major vaccination campaigns, the Livestock Service provides a wide range of veterinary services through its network of veterinary clinics. A major part of its mandate is to teach herders how to treat those illnesses that are the most serious causes of mortality and morbidity in their animals. This involves not only extension services, but also the provision of medicines at little or no cost for purposes of demonstration. During the last ten years, the Livestock Service has been introducing veterinary medicines to livestock producers, primarily

in the sedentary zones of Niger. By the late 1970s, the Government of Niger (GON) felt that the need and demand for veterinary medicines had been sufficiently established to permit their being distributed on a commercial basis. It was decided that the most effective way to do this was to set up a distribution system outside of the Livestock Service and provide it with the means to operate autonomously and to eventually become financially self-sufficient. Under this project, USAID and the Entente Fund are providing much of the initial funding to get this program underway. The acronym for the organization being created is Vetophar.

The two major components of the Entente project are: (1) the construction of a central veterinary pharmacy and three regional pharmacies, and (2) the financing of a revolving fund for the purchase of veterinary medicines. The role of the central pharmacy is to import veterinary medicines and to distribute them to the regional pharmacies. In principle, Vetophar is responsible for the importation and distribution of all veterinary medicines, except those that are provided free by the Livestock Service which are mostly vaccines against the major contagious diseases. Below the regional pharmacy level, medicines can be sold directly to livestock producers or can be sold to: (1) the Livestock Service field posts; (2) livestock production projects; and (3) private salesmen for resale to herders. An important task for Vetophar during the early years will be the establishment of a network of commercial distributors to sell

medicines in small towns and market places.

The revolving fund financed by this project is for the purpose of purchasing an initial stock of medicines and other products related to animal health care. A list of products purchased is shown in Annex C. These medicines were selected on the basis of what illnesses were considered to be most important in Niger, and which medicines would be most demanded by herders. The largest single item to be stocked is an anthelmintic (Exhelm). The amount purchased was enough to treat about 500,000 cattle and 1,000,000 sheep and goats. Eventually, the items purchased under this project are to be sold at a price that will cover: (1) the delivered cost of Vetophar; (2) the operating expenses including depreciation; (3) a sales commission for private salesmen; and (4) inflation. During the three-year implementation period, it is assumed that Vetophar will not be able to cover all of its operating expenses. The Entente project therefore includes funds to cover salaries of support staff, operation and maintenance of vehicles, travel expenses for Vetophar staff and utilities. In addition, the GON finances the salaries of the professional staff and is expected to continue to do so after the scheduled termination of the project in 1982.

The cost components and sources of funding are presented in detail in Annex D and are summarized below:

TABLE 1
SUMMARY BUDGET OF THE VETOPHAR PROJECT

	<u>US\$ (000)</u>	<u>F CFA (000,000)</u>
<u>Infrastructure</u>	<u>527.4</u>	<u>134.5</u>
Entente Fund	272.5	69.5
Government of Niger	113.7	29.0
USAID	141.2	36.0
<u>Capital Goods</u>	<u>127.7</u>	<u>32.6</u>
Entente Fund	106.2	27.1
Government of Niger	21.5	5.5
<u>Revolving Fund for Medicines</u>	<u>672.5</u>	<u>171.5</u>
Entente Fund	672.5	171.5
<u>Recurrent Costs</u>	<u>506.9</u>	<u>129.0</u>
Entente Fund	198.8	50.7
Government of Niger	202.3	51.6
Vetophar	105.8	26.7
<u>Total</u>	<u>1,834.5</u>	<u>467.6</u>
Entente Fund	1,250.0	318.8
Government of Niger	337.5	86.1
USAID	141.2	36.0
Vetophar	105.8	26.7

The total cost of this project will be about 470 million F CFA which, at the time the project was designed, was equivalent to about US\$1,850.000.

PART TWO: ANALYSIS

PART TWO: ANALYSIS

INTRODUCTION

This analysis is divided into three parts. The first deals with project implementation. The objective is to identify implementation problems, assess their impact on the ability of the project to achieve its objectives, and recommend actions that can improve performance. The second is an analysis of the impact of Vetophar on animal health and productivity. This part looks at Vetophar in the context of overall animal health and production problems in Niger and recommends measures that should be taken to maximize its long-term impact. The third part of this evaluation assesses Vetophar's prospects for becoming financially self-sufficient. This includes a financial and marketing analysis and recommends management and marketing actions to make Vetophar more economically viable.

PROJECT IMPLEMENTATION

The Vetophar project has been implemented without any major difficulties from the central pharmacy down to the level of the regional pharmacies. There were delays in construction and in the delivery of medicines, but by May 1980, the central pharmacy and the regional pharmacies in Zinder and Tahoua were constructed,

equipped, staffed and stocked with medicines. The project components that have not yet been completed are the regional pharmacy in Niamey and housing for the heads of the regional pharmacies. The funds for these buildings have been made available by the GON and USAID/Niger and construction on the houses has recently begun. The evaluation team found no apparent problems with the construction of the buildings that have been completed.

The only equipment problem concerns the refrigeration in the pharmacies. The inadequacy of the refrigeration has already caused some products to have a reduced shelf life, and one product, a rabies vaccine, probably to be inactivated. A minor problem exists with the walk-in refrigerator in the central pharmacy. The thermostat needs an adjustment of the timing, as it gets too warm (9°C) before the compressor activates the refrigeration system.

A more serious problem exists in the regional pharmacies which were equipped with small refrigerators. The size of the refrigerators were inadequate for pharmacy purposes, and were reallocated for personal use. Consequently, there are no refrigerators in the regional pharmacies now.

Funds should be made available for the purchase of two 15 to 17 cubic foot refrigerators for each regional pharmacy. This size should be purchased even if it requires operation with a reduction transformer. Following these recommendations will allow Vetophar to maintain proper storage conditions so

that medicines and vaccines are fresh and effective for the longest possible time after being sold.

In general, the staffing of the pharmacies has been satisfactory. The Director is an experienced veterinarian with a strong commitment to seeing his organization succeed. He and his staff have received training in all aspects of Vetophar's operations, including the proper use and distribution of medicines available through Vetophar, management of commercial pharmacies, bookkeeping, and methods for educating herders in the treatment of animal diseases. An ongoing training program should be established, especially for the regional pharmacy personnel, who have received their basic training in the technical aspects of animal health care. To be effective in the Vetophar system, they need to develop a more complete understanding of the economic value of different medicines to livestock producers and a thorough grasp of what is involved in making a veterinary pharmacy economically viable. This training should be job-oriented, rather than academic, and could be carried out by existing institutions in Niamey.

One problem that requires special attention is financial management. The record keeping system currently being used by Vetophar was designed primarily for stock control. Because there are no up-to-date records on expenditures or on revenues, it is difficult and time consuming to do an analysis of cash flow or profit and loss.. This means that management is lacking

the basic information it needs to make Vetophar commercially viable. The cause of the problem is that Vetophar cannot pay enough to attract qualified accountants. The accountant's salary should be increased, if at all possible, but, in any event, it is essential that a comprehensive but simple system of financial record keeping be established. Entries and calculations should be systematized so that a low-level bookkeeper could do the work in a routine manner. It is recommended that a short-term consultant be brought in to help establish such a system.

The most serious implementation problems occur below the level of the regional pharmacies. According to the original project design, sales during the first year were to have totalled 180 million F CFA and were to have increased to 425 million F CFA by the third year. The key to achieving these targets was to have been a distribution network that extended down to the level of small towns and markets. This was to have been accompanied by an extension program to generate a demand for Vetophar's medicines. Thus far, neither the distribution system nor the extension program have gotten underway. Consequently, monthly sales at the three pharmacies are now running around 2 million F CFA per month. Since Vetophar did not begin distributing medicines until June 1980, it is not possible to project sales volume on the basis of experience to date. However, it appears that: (1) there is not sufficient demand to generate 180 million F CFA in sales during the first year; (2) Vetophar does not

have the extension capacity to increase the demand; and (3) not enough thought was given to who could become salesmen for Vetophar, what medicines they could sell, and the extent of their dependence on the Livestock Service for diagnostic support.

Plans for the development of a network of commercial distributors are very vague at this time. Attempts to recruit agents to sell Vetophar products for a five percent commission have been largely unsuccessful. As an alternative, Vetophar has reverted to a distribution system that consists primarily of sales to the Livestock Service for resale through the veterinary posts and direct sales to livestock producers. Thus far, the largest purchaser has been the Livestock Service. Each arrondissement has a 400,000 F CFA revolving fund to purchase anthelmintics for resale to herders. Another major source of demand was expected to be donor-funded livestock production projects, but thus far these projects have purchased most of their veterinary medicines directly from abroad.

It is clear that the highest priority concern of Vetophar for the immediate future should be how to increase its sales volume. The task will not be easy. There will have to be much closer coordination with the Livestock Service for the provision of extension services. Similarly, coordination with the Livestock production projects needs to be improved. For Vetophar to be commercially viable, it should be made the sole supplier of medicines for these projects. Also, it is very likely that these projects will be the main vehicle for instructing livestock

producers in animal health care and the use of Vetophar products. Finally, and most important, Vetophar must have a marketing plan that spells out how medications can be distributed from the regional pharmacies to the livestock producers at reasonable cost. The details of such a plan and its importance to the long-term viability of Vetophar are discussed in depth in the section on project sustainability.

PROJECT IMPACT

Economic Importance of Diseases in Livestock Production

The animal production losses sustained by the Nigerien livestock sector as a result of diseases cannot be quantified, since data on disease incidence and prevalence have not been widely or systematically collected. A limited amount of epidemiological research is now being undertaken by the veterinary research laboratory in Niamey, and the USAID livestock and range management project plans to carry out its own disease survey in the near future. Data generated by these sources should allow estimations of the importance of disease processes in some regions, and in several types of livestock production systems.

Visits by the evaluation team to field project sites and herd concentration points were helpful in judging the importance of livestock diseases. Personal observations of herds and

interviews with herders and project personnel indicated that losses occurred throughout the year, including the rainy season, and became evident in a variety of ways. Parameters of growth, general productivity and reproduction were all affected by mortality and morbidity in different classes of livestock. The evaluation team observed or was told about most of the production losses listed in Annex E.

Although rinderpest and bovine pleuropneumonia have been controlled by vaccination programs, a complex of infectious and nutritional diseases of cattle remains. This is an important constraint to production, and systematically applied interventions can assist in the transition from traditional to market-oriented production. The often-quoted figures of 40 percent calf mortality and 55-65 percent reproductive rate in Sahelian cattle are striking indicators of poor production, but do not account for the total losses in milk, live sale cattle, meat and by-products incurred by producers.

The health status of sheep and goat flocks is no better than it is in cattle herds and may, in fact, be worse. Government veterinary programs emphasize control of cattle diseases, rather than those of small ruminants, and systematic vaccination of sheep and goats is not carried out. The knowledge of sheep and goat diseases which is needed for a profitable herd health program is lacking. Without more data, the best approach is a conservative effort to control a few major diseases.

Diseases are also prominent in camels and, probably because of the high value of individuals animals, herders frequently brought these losses to the attention of the evaluation team. The problem of diseases in camels is similar to that of small ruminants: specific information is only available for a few diseases and only limited health interventions are possible without further epidemiological research.

The USAID Niamey Department Productivity Project illustrates the impact of diseases on livestock development. Animal traction and farmyard poultry components of the project have been unable to maintain the required components of the project have been unable to maintain the required levels of animal health.^{1/} Vetophar can be useful in livestock development programs if it distributes commodities which effectively reduce the production losses. The overall relationship of health interventions to livestock development strategy is considered in a subsequent section of this report.

The Principal Diseases of Ruminants

The three lists of diseases which appear below are based on previously published reports, observations by the evaluation team, discussions with livestock personnel in Niger, the "diagnostic vocabulary" of Nigerien field veterinarians, and a

^{1/} Personal communication, Frances Stier, REDSO/Abidjan.

general knowledge of livestock disease patterns in tropical Africa. The conditions are listed in decreasing order of importance based on their incidence or prevalence, the seriousness of the losses, and the present cost of control or treatment. Many of the categories have multiple etiologies. This is done as a practical matter where field diagnosis is difficult or the agents are closely related and require similar methods for containment.

High Priority Diseases

- Malnutrition - Cyclical caloric deprivation, chronic protein deficiency, vitamin A, phosphorous and copper deficiencies. Discrete problems exist beyond the need to adjust the general plane of nutrition. Cattle probably suffer most, followed by sheep, then goats and camels. The effects are well documented and mimic the results of many infectious and parasitic diseases, but malnutrition is often overstressed as an underlying factor in susceptibility to other diseases.^{1/}
- Rinderpest - Only sporadic outbreaks have occurred in Niger since the JP-15 international vaccination campaign in the early 1970s. Economically, rinderpest is very important because of the continued need for annual vaccination. It provides most of the economic justification for the operation of Niger's Livestock Sanitary Service and the network of field veterinary stations.
- Bovine pleuropneumonia - As in other Sahelian countries, Mycoplasma mycoides infections are partially contained by vaccination but outbreaks still occur. Vaccination is carried out during the annual campaign against rinderpest but is not rigorously enforced.

^{1/} A discussion of the effects of malnutrition is beyond the scope of this report and the reader is referred to D.C. Blood, J.A. Henderson, and O.M. Radostits, Veterinary Medicine, "Diseases Caused by Nutritional Deficiencies," Lea and Febiger: Philadelphia, 1979, pp. 866-926 for more information.

- Septicemic pasteurellosis - Cattle and camels are acutely affected by several strains of Pasteurella multocida. Outbreaks usually occur during stress periods and both morbidity and mortality are high. Differentiation from other systemic bacterial infections requires bacteriologic examination which is not readily available in Niger.
- Parasitic gastroenteritis - Mixed infections with trichostrongyles, hookworms and strongyles are universal in the young of all species of ruminants, but there is not enough information on the dynamics of host infections and environmental contamination on which to base strategic control programs of economic merit.
- Tick-borne diseases - Both rickettsial and protozoal diseases are common: cowdriosis, anaplasmosis, piroplasmosis, and possibly theileriosis. Cattle, sheep and goats are infected but are usually protected from serious disease by innate and acquired immunity. Bont ticks, carriers of Cowdria, are common on cattle; however, tick surveys correlated with confirmed cases of tick-borne disease have not been done. Surveys are required to economically justify tick control programs in traditional livestock enterprises.
- Clostridial infections - Blackleg in cattle is widely recognized but is not usually confirmed by laboratory analysis. Other clostridial diseases such as malignant edema and enterotoxemia probably occur in cattle, sheep and goats without being diagnosed.
- Anthrax - This zoonotic disease is most important in cattle and sheep, and outbreaks are most common on the poorest quality rangeland during the dry season and around heavily contaminated watering points.
- Poxvirus infections - Sheeppox is the most serious illness of this group and is probably followed in importance by contagious pustular dermatitis of sheep. Goatpox, ulcerative dermatosis of sheep and bovine lumpy skin disease may also occur but would be unrecognized in the field.
- Trypanosomiasis - Tsetse-borne infections only occur in the higher rainfall areas of southwest

Niger, or when Nigerien livestock are driven into Nigeria. These are usually Trypanosoma vivax infections of cattle, and they may later be spread mechanically from animals taken out of tsetse-infected areas. Mechanically transmitted T. evansi causes surra, an important disease of camels and horses. Cattle are, apparently not carriers of the infection.

Diseases of Lesser Importance

- Mycoplasmal infections of sheep and goats - pleuropneumonia and contagious agalactia;
- Foot-and-mouth disease;
- Small ruminant pest and Kata (stomatitis pneumoenteritis of goats);
- External wounds and myiasis;
- Fascioliasis;
- Brucellosis;
- Rabies; and
- Streptothricosis.

Diseases of Uncertain Importance

- Leptospirosis;
- Infectious bovine rhinotracheitis;
- Vibriosis;
- Tuberculosis;
- Botulism;
- Lungworms;
- Neonatal enteric and septicemic infections - viral, bacterial and protozoal agents including the coccidia;
- Malignant catarrhal fever;

- Bluetongue; and
- Paramphistomiasis.

Vetophar and Livestock Development Strategy

The traditional Nigerien livestock sector is seriously affected by a complex of infectious and nutritional diseases. Reducing the incidence and severity of disease processes is an important activity of livestock programs which aim to increase production.

At the present time, there is disagreement in Niger among the personnel of the various livestock projects and institutions on the practical impact of animal health interventions. Proponents of health interventions report the occurrence of miraculous cures resulting from simple treatments in the field, whereas detractors believe that little can be gained without widespread improvements in general nutrition. Neither of these two positions reflects the historical role of health care in livestock development in other tropical regions.

Global livestock development has involved two categories of activities:

- Rationalization of the use of the primary sector. This involves management for increasing and sustaining the productivity of pastures, rangeland, fallow and cultivated forages and by-products.
- Increasing the production of food, by-products, and work by animals. This involves improvements in herd health status, general nutrition and genetics.

The second category encompasses activities directed towards livestock production per se and this is where Vetophar and other veterinary programs can make their contribution. In order to increase livestock production, improvements in the health status of the herd and adjustments in the nutritional plane must be made simultaneously. This will allow maximum production from the original genetic population. In order to further increase livestock production, it is necessary to improve the genetic stock of the population through breeding, and at the same time make further adjustments in the health and nutrition status of the herd.

The Nigerien livestock sector is in the initial stages of evolving toward market-oriented production systems. Rational development from this point forward requires an integrated package of interventions in order to create a substantial increase in production. The increase cannot be achieved immediately, and each intervention, applied separately, cannot be expected to yield a cost-effective benefit. It is the application of the entire package which must be relied upon to produce an economic increase in production. It is essential that improvements in herd health and adjustments in the plane of nutrition take place together if worthwhile increases in production are going to occur.

The evaluation team is concerned that Vetophar will fail, both in its contributions to livestock health and as a viable project, if its place in livestock development is not quickly

identified. The management of Vetophar can assist in this mission if it refrains from selling products which are of doubtful value or whose misuse potential exceeds the anticipated benefits. On the other hand, Vetophar should not become paternalistic with herders. It should help them obtain effective medications, including antibiotics and some vaccines.

Vetophar needs to revise its list of commodities; items of marginal value should be removed and others of greater merit should be added. Otherwise, Vetophar will quickly lose its credibility. It will be rejected by herders and by other projects and will not be integrated into the livestock development strategy of Niger. Specific recommendations are presented in the next section of this report.

Diseases Which Vetophar Could Effectively Address

The diseases discussed below can now be economically treated or prevented through Vetophar. Most of the recommended treatments can be administered by the herder to his own animals. They do not require professional veterinary services, although these might increase their overall effectiveness.

The recommended vaccines are killed and are relatively safe and stable. Curative medications are mostly broad spectrum and can be used for combinations of clinically similar illnesses for which specific diagnoses cannot be made in the field. The major criteria for selecting the medications and vaccines are

safety, efficacy, overall effectiveness in field usage, and the economic importance of the conditions which they treat.

The differences between the existing situation and what is recommended in this report can be seen by comparing Annexes F and C with Annexes G and H. There are several important contagious diseases that should continue to be addressed through Livestock Service campaigns; these are shown in Annex I. The reasons why Vetophar should stock the products listed in Annex H are explained below.

Malnutrition

Vetophar sells combination salt mineral blocks which are not favored by either herders or livestock personnel. Herders complain that their animals do not use them; there is probably a palatability problem due to the low sodium chloride content (30 percent). Another problem is that while the blocks provide adequate trace mineral supplementation, the animals are unlikely to consume enough to satisfy their requirements in calcium and phosphorous.

It is recommended that Vetophar purchase plain local salt blocks for distribution. If this is not possible, then trace mineral (TM) salt blocks (without calcium and phosphorous) should be imported in place of the multipurpose blocks now being sold.

A granular, free-choice, vitamin mineral mixture should also be sold by Vetophar so that the salt and mineral supplements

can be offered independently to the animals. Many products are available commercially. The preferred calcium to phosphorous ratio is between 1:1 and 1:1.5 and the product should contain vitamin A, among others. If no product containing copper can be purchased, then 0.5 percent copper sulfate should be added at the central pharmacy.

The mineral supplement can be sold either in bulk or for greater convenience to the herders by the kilogram. Regional pharmacies should be provided with scoops marked at the one kilogram level. The availability of the supplement in the granular form will also allow the commercial distributors (revendeurs) to sell convenient quantities to herders.

Vetophar should contract with a local mill to supply a multipurpose high energy feed with a protein concentration of 12 and 14 percent, supplemented with calcium, phosphorus and vitamin A. As with the mineral supplement, the feed concentrate should be sold in bulk or by the kilogram. Experience elsewhere in the Sahel indicates that herders quickly learn to use minimal amounts of concentrates during the last part of the dry season. Concentrates are also useful for farm livestock enterprises.

Every effort should be made to obtain the feed concentrate at the lowest possible cost, but inorganic sources of nitrogen, such as urea, should not be added to reduce the cost since toxicity may become a problem under local conditions.

Septicemic pasteurellosis

The vaccine available from the Livestock Service is an aqueous bacterin which is only moderately efficacious. It is only available during outbreaks, when its use is questionable, and it is not made available to the herders for prophylactic use. This could be rectified by making available one of the killed vaccines in oil adjuvant base. These are manufactured in other African countries and should not be confused with those made for secondary pasteurellosis in temperate countries.

For treatment, Vetophar should sell the newly available slow-release injectable oxytetracycline in oil. This would provide the herder with a convenient one-treatment therapeutic regime. It also has the advantages of low toxicity and very broad spectrum of activity.

Internal Parasites

Vetophar is now selling morantel tartrate for mixed gastrointestinal nematode infections in ruminants. This is a good choice since it is efficacious and its toxicity is low, but thiabendazole is preferred by some herders and projects, so it should also be offered.

Several suggestions were made to the evaluation team that an effective strategic anthelmintic program could be carried out in Niger. This is unlikely since the necessary epidemiological research has not been performed. A review of the literature was made in Niger and no publications were found on

parasite transmission or control under field conditions. Without further research a control program would require four annual treatments, as described elsewhere, and the economic return would be in doubt.^{1/} It is therefore recommended that project funds not be used to promote a strategic control program.

Until further research is performed, tactical treatments should be given on an ad hoc basis. Poor general performance of cattle from six months to two years of age and small ruminants up to one year of age would warrant treatment of the entire herd. Animals would probably have to be moved to an uncontaminated pasture in order to obtain a sustained improvement.

Herders are able to judge poor body condition and should also be taught to associate diarrhea and pale mucous membranes with parasitic diseases.

Fascioliasis occurs in some wetter areas of Niger where it is difficult to distinguish from certain nematode infections (e.g., Haemonchus, Bunostomum). Rafoxamide and Disto-5 are sold by Vetophar for specific treatment of Fasciola infections. It is recommended that these be administered under veterinary supervision, since herders would not be able to make the necessary diagnosis. As soon as the broad spectrum anthelmintic albendazole can be purchased, it should be distributed for herder

^{1/} R. Poulin and A. Sollod. "Mid-term Evaluation of the Helminthoses and Audiovisual Extension Films Projects in Upper Volta," Development Alternatives, Inc., Washington, D.C.: October 1979.

administration in Fasciola-endemic areas, since it is effective against both nematode and Fasciola infections.

Tick-borne Diseases

Vetophar is promoting the spraying of livestock with acaricides as a means of controlling tick-borne diseases; however, no epidemiological surveys have been done to make this approach economical in the traditional livestock sector. It is therefore recommended that insecticide use be limited to commercial enterprises with confined animals where it will prevent large populations of ticks from building up on the premises.

The insecticide being sold by Vetophar contains a mixture of malathion and diazinon. Since diazinon is moderately toxic to livestock and man, an insecticide containing pyrethroids with a synergist, or malathion alone, is recommended as being less dangerous. This issue is discussed more fully in a subsequent section of this report.

The previously recommended injectable form of oxytetracycline in oil can be used by herders to treat most of the important tick-borne diseases. Diminazine aceturate should also be sold to herders as an effective non-sterilizing treatment for piroplasmiasis. A combined treatment using both drugs will often be the most practical course for herders to follow. It would be effective against a variety of systemic infections which herders could not differentiate.

Clostridial Diseases

The provision of a multivalent clostridial bacterin could make a substantial contribution to livestock health. The vaccine should contain seven strains from among the following organisms: Clostridium perfringens, C. sordelli, C. novyi, C. septicum and C. chauvoei.

The Livestock Service provides a blackleg vaccine for use during outbreaks. The recommended commercial vaccine would give the herder additional advantages, since it could be used annually for prophylaxis, and would provide a broad spectrum of protection for cattle, sheep and goats.

Trypanosomiasis

There are serious limitations in the use of drugs to treat or prevent trypanosomiasis. Any practical strategy which is applied on a large scale will eventually lead to the development of drug-resistant trypanosome strains. Allowing herders to treat their own animals increases the risks, but withholding the drugs will often leave them with no practical recourse and may encourage clandestine drug trade. The best approach where widespread veterinary service is not available is a program in which: (1) a specific drug is sold to herders; (2) a conscientious effort is made to educate herders about the proper use of the drug; (3) a chemically unrelated drug is held in reserve in case drug resistance becomes widespread; and (4) periodic monitoring for drug resistance is carried out by veterinary

personnel in the field.

Based on the above program, the evaluation team recommends that Vetophar should sell diminazine aceturate to herders for treating cattle and support this with a reserve supply of isometamidium. For treatment of Trypanosoma evansi infections in camels and horses, suramin should be sold and backed by a reserve of quinapyramine sulfate.

Mycoplasmal Infections of Sheep and Goats

Vaccination of small ruminants against pleuropneumonia and contagious agalactia would not be practical yet, but herders could treat with oxytetracycline in oil without resorting to specific diagnosis.

External Wounds

Vetophar is selling a lindane ointment which should help prevent secondary myiasis. A sulfonamide powder for bacterial wound infections was supposed to be sold but was never ordered. Some medication should be sold for this purpose, and nitrofurazone powder is recommended since it may also be used for superficial eye wounds and infections.

Streptothricosis

The form of this disease which occurs in Nigerien cattle is difficult to treat. Herders should be encouraged to cull the most severely affected animals; the less affected could then be treated with tetracycline in oil.

Leptospirosis

No vaccine is currently available in Niger. Vetophar should purchase a commercially available bacterin which herders could use to immunize cattle annually. The vaccine should contain antigens of both Leptospira pommona and L. hardjo.

Treatment of infections is probably not practical but might be done occasionally under veterinary supervision. The antibiotics recommended in Annex H would serve this purpose.

Neonatal Enteric and Septicemic Infections

A practical approach to control and treatment is complicated by many factors which affect the prevalence and severity of these diseases. Management, nutrition and sanitation are more important than antimicrobial therapy.

Three commodities are recommended which might aid the herders in coping with these diseases. First, plastic umbilical clips are inexpensive and would provide some protection against pathogens in the environment. Second, Vetophar should sell a broad spectrum oral antimicrobial agent. Sulfaquinoxaline boluses are recommended, but other drugs may be equally effective. Additives which increase toxicity, such as anticholinergics and arsenicals, should be avoided. Third, an electrolyte powder which is dissolved in water would encourage herders to maintain hydration of their sick animals. Vetophar could prepare small inexpensive packets of sodium chloride and

sodium bicarbonate, or a more complex commercial preparation could be offered.

Amprolium is now being sold for the treatment of livestock illnesses characterized by dysentery, but this drug is only effective if coccidiosis is the cause. Since other causes of dysentery cannot be distinguished in the field, Vetophar should discontinue the sale of this drug to herders. The sulfaquinoxaline, which is recommended above, is only slightly less effective than amprolium against ruminant coccidiosis and has the advantage of wide spectrum of activity.

The Practical Herder

It is unrealistic to expect traditional herders to understand most of the disease concepts which are described in the foregoing sections of this report. These analyses are nevertheless important in determining which conditions are worth treating. The original project paper did not thoroughly analyze the animal health situation in Niger, and consequently recommended uneconomic treatments.

Vetophar is overstocked with products of limited usefulness and low demand, and needs to build up a selection of more effective products. Otherwise, it will end up depending mostly on sales of its best selling drug, morantel tartrate. The distribution of this single anthelmintic does not justify the creation of Vetophar.

Can real animal health needs be met by equipping the herder with a package of medical commodities? The evaluation team believes that they can, and suggests the following as a formative herd health kit/plan for the practical herder.

Each year three vaccines should be purchased and administered in September or October when the animals are still in good body condition. All cattle between three months and two years of age and all breeding ewes should be given a multivalent clostridial vaccine. All cattle over three months of age should be vaccinated against pasteurellosis and leptospirosis.

Salt blocks and mineral supplement should be purchased for use during the dry season around encampments and villages.

A health care package should be assembled and commodities replaced as they are used. Sufficient quantities should be maintained by the herder to treat minor disease outbreaks or to begin treatment of major ones. Recommended components of this health care package are:

- Oxytetracycline in oil, 100 cc;
- Sulfaquinoxaline, 10-12 boluses;
- Nitrofurazone powder, one squeeze bottle;
- Morantel tartrate, 10-12 boluses;
- Lindane crea, one tube;
- Electrolyte powder, one kg;
- Disposable syringes and needles, six; and

- Suramin and/or diminazine aceturate, as needed.

The progress which herders make in adopting this program is the concern of the extension agents, who will be provided by regional livestock projects and the Livestock Service. Their function will be to teach the herders about the products: when to give them, how, how much and to which animals. If the commodities are really effective and economic, they will be quickly adopted by the herders; and the herders, through experience, will learn to modify this package of commodities to suit their individual needs.

Relationships with the Livestock Service and other Development Projects

One of the objectives of Vetophar is to relieve the Livestock Service of the administrative burden of ordering and distributing veterinary commodities. This allows the Livestock Service to redirect its resources in order to place greater emphasis on vaccination campaigns and field services. Although Vetophar has largely assumed the administrative function, the Livestock Service requires additional inputs in finance, management and technology before it can expand its services.

Since the Livestock Service has a limited capability, Vetophar must promote herder-implemented treatments in order to make its maximum impact. This requires selling some products which are similar, but superior, to those distributed free of charge by the veterinary field agents. The evaluation team hopes that

the Livestock Service will not place undue restrictions on this type of commodity duplication. Above all, Vetophar should be allowed to sell the antibiotics and vaccines which are recommended in this report.

The Livestock Service should continue to place special emphasis on disease control programs which require coordinated campaigns or special diagnostic services. A short list of suitable target diseases is given in Annex I. Some of these diseases are now the subjects of control programs, whereas others can be acted upon as resources allow. The Livestock Service should strengthen its epidemiological research capability, not only to meet its own needs, but also to provide guidance to Vetophar.

Rabies and the poxvirus diseases, including contagious pustular dermatitis, are both on this list. Although Vetophar sells vaccines for these diseases, control will not be achieved until coordinated campaigns are undertaken. The activities needed to make these campaigns successful are clearly beyond Vetophar's terms of reference. If the GON judges that these diseases are priority issues, the Livestock Service should take over the distribution of the vaccines and administer them within the context of coordinated campaigns.

Livestock and range management projects in Niger have the capacity to distribute large quantities of Vetophar's commodities. The World Bank project in Zinder has trained 50 "secour-

istes" to sell drugs to the herders and to educate them about drug usage. If this effort is successful, it will contribute significantly to the economic justification of the Zinder regional pharmacy. Vetophar management should contact other projects with a view to having them also distribute its drugs.

In addition to providing an important distribution service, the livestock projects could become the principal vehicles for extension work on disease control and prevention. All projects which are concerned with traditional production systems are, or will be, implementing some extension program through the regional Livestock Service offices. It will be up to the Livestock Service to spread the extension models outside of the project zones. Vetophar should therefore develop the best possible working relationships with both the projects and the Livestock Service.

Regulatory and Safety Considerations

Drug Classification

Vetophar has a classification system whereby each commodity is placed in one of the following groups:

- Products for general distribution;
- For horses, dogs or cats;
- For poultry;
- Products requiring consumer education;
- Hardware; and
- Products requiring repackaging.

This system may be useful for channeling different groups of drugs through the distribution network, but an additional classification is needed to control the sales of commodities with high risk potential.

Project personnel are aware of the need to limit the distribution of dangerous drugs, but a rigorous policy has not been formulated. Informal guidelines set by Vetophar depend on broadly classifying groups of commodities; for example, antibiotics and injectable drugs are considered to be too abuse-prone for general distribution. No attempt has yet been made to judge each product on its own merits.

Herders need access to effective, high-quality vaccines, antimicrobial and antiparasitic agents, and the most constructive policy would be to select the safest from among each category and sell them for unsupervised use. Parenteral administration, per se, should not disqualify a drug for general distribution. If injectable medications and vaccines are sold with adequate disposable needles and syringes, the risk would be less than if the commodities are acquired from clandestine sources.

It is recommended that all drugs be placed in one of the following categories:

- Class A: unrestricted distribution; or
- Class B: available only to professional livestock or veterinary personnel.

Each product should be judged on its own merits with consideration given to potential benefits as well as hazards.

Vetophar should concentrate its efforts on the distribution of Class A drugs. In doing so it would make its maximal impact on animal health. The drugs recommended in this report have been selected with this in mind, and appear in Annex H with their recommended classification.

The need to classify drugs on an individual basis is clearly shown by the example of a dichlorvos-containing anthelmintic which Vetophar sells. The labeling for this product is reproduced in Annex J. The directions, precautions, and warnings indicate that this product could seldom be recommended under Nigerien conditions. Nevertheless, it is being sold without restrictions. It should be placed in Class B in order to limit its distribution.

Insecticide Usage

There are several critical problems related to insecticide usage which require immediate attention. These concern the choice of insecticide and the conditions under which it is sold.

Vetophar began by distributing a powdered form of benzene hexachloride. The preparation is an industrial one which is used for the preservation of seed grains. It is packaged in unmarked containers and probably contains isomers other than the gamma form which is normally used on animals. Although Vetophar has discontinued the distribution of this product, a quantity

of it remains at the Niamey regional pharmacy. This should either be destroyed or turned over to another agency which could insure its proper agricultural use.

Benzene hexachloride has been replaced by a concentrated organophosphorus solution containing 20 percent malathion and 10 percent diazinon. Although the preparation is intended for use on livestock, it is not manufactured in the United States, and the diazinon which it contains is not approved by U.S. federal regulatory agencies for use on animals. The evaluation team was thus unable to obtain data on the safety of this product.

Of particular concern is the known susceptibility of zébu cattle to some organophosphorus insecticides. Although the evaluation team was told that the product had been tested on animals at the "cure salé," no data were presented on the conditions of testing or the results. The use of this product is hard to justify considering the availability of less toxic safety-approved insecticides.

The insecticidal concentrate is dispensed in 30 cc. bottles for sale to herders. This quantity is sufficient to make 10 liters of spray when added to water. The problem is that no labels are placed on the bottles. Once a bottle leaves the pharmacy, there are no product identifications, no directions for use, no use precautions, and no hazard warnings. The 30 cc. quantity is sufficient to be dangerous to humans and livestock.

Vetophar should adopt the following three measures in order to reduce the hazards and to justify the continued sale of insecticide:

- Replace the malathion and diazinon mixture with a less toxic product such as plain malathion or a pyrethroid;
- Give the insecticide a Class B designation; and
- Sell the insecticide in original, properly labeled bottles of up to one liter, with labels written in French.

Labeling and Instructions for Use

In addition to the specific labeling problem cited above, a more general one exists. A few of the products (for example, the morantel tartrate boluses) have graphic instructions for illiterate users, but most products have only written ones. Some of these are in English only, while some are multilingual or in French.

Several steps can be taken to reduce the misuse potential due to the inconsistent labeling. Vetophar should request the Livestock Service to produce a French translation of the labels of all Class B drugs. A "handout" of the appropriate translation could then be included as each sale is made to a qualified buyer.

All Class A drugs and vaccines should be accompanied by graphic labels for product identification and usage. The World Bank range management project is developing this type of label

for products which it intends to distribute to herders. Vetophar should contact this organization with a view to using the same labels and possibly arranging a cooperative effort to produce additional labels as necessary.

Benefit Distribution

Vetophar's policy with respect to benefit distribution is that, as a parastatal organization, it has a social responsibility to provide medicines to all segments of the livestock industry. This is the main reason for having a regional pharmacy in Tahoua. Because of the long distances, lack of infrastructure, and the need for considerable extension activity, this pharmacy can be expected to operate at a loss for at least three or four years.

On the surface it would appear that Vetophar's product mix is not in line with the needs of small traditional herders. During the five months that Vetophar has been in operation a significant portion of its sales consists of medications for horses in urban areas and commercial poultry operations. Vetophar also carries medicines to treat cats and dogs, mostly in urban areas. However, these products account for only a small percentage of total Vetophar outlays, and their sale, which is usually made directly from the regional pharmacy, requires very little staff time. In fact, if the evaluation team's recommendations to put a high markup on these products is accepted, their sale would provide revenues to subsidize activities in

remote but needy areas of Niger.

An important benefit distribution issue concerns Vetophar's marketing strategy. As noted elsewhere in this report, in the medium-term Vetophar cannot become financially self-sufficient unless it concentrates its efforts in the sedentary agricultural zone. This is where the greatest demand for veterinary medicines exists and where marketing costs are lowest. Because Vetophar can have very little long-term development impact until it becomes commercially viable, it is recommended that expansion of its activities into remote areas should be undertaken gradually since sales volumes will be low and operating costs high. Expansion should also be undertaken in such a way as to deprive potentially lucrative Vetophar activities of scarce resources and manpower.

PROJECT SUSTAINABILITY

The Demand for Vetophar Products

Whether Vetophar can be sustained over the long-term depends first on the size of the market for Vetophar products, as determined by their economic value to the herder, and second on the ability of Vetophar to distribute its products at reasonable cost. At the present time, Vetophar consists of a central pharmacy and three regional pharmacies. Actual figures on operating

expenses were not available to the evaluation team, but data in the project paper and information obtained from Vetophar is shown in Table 2. These figures reflect the staffing and volume of activity anticipated in the project paper. For purposes of this evaluation, it can be assumed that operating costs in 1981 will be in the 50-60 million F CFA range. The trypanosomiasis treatment program is not included in these estimates because it is being financed and implemented directly by the Livestock Service.

When this project was designed, it was intended that Vetophar would sell most of its products at a 16 percent mark-up, including a 5 percent commission for commercial distributors below the regional pharmacy level. This implies that Vetophar would have to sell about 500 million F CFA of medicines and other products to generate 50 million F CFA in revenues. The key issue for Vetophar is whether this target is realistic and, if not, whether the mark-up can be increased so that operating costs can be covered with a lower volume of sales. The projections in the original project paper were very optimistic. They assumed not only a large need for anthelmintics, but also a large existing demand (annual treatments for 50,000 camels, 400,000 cattle and 1.1 million sheep and goats). The projections also assumed a strong demand for medicines against other internal parasites as well as external parasites. As discussed in the section on project impact, it is not at all certain that the need for anthelmintics is as great as projected. Also, a number of other

TABLE 2
EXPENSES
(Excluding Trypanosomiasis Division)
(millions F CFA)

<u>Central Pharmacy</u>		<u>13.90</u>
Salaries		5.00
Professional Staff		(2.00)
Accountant		(0.80)
Support Staff		(2.20)
Allowances (10 percent)		0.50
Operations		3.35
Building Maintenance		(0.20)
Utilities and Miscellaneous Operating Expenses		(2.00)
Fuel		(0.45)
Vehicle Maintenance		(0.70)
Depreciation		5.05
Buildings: Pharmacy and House		(3.75)
Equipment		(0.80)
Vehicles		(0.50)
Inflation Factor for Replacement of Stocks		<u>25.00</u>
<u>Regional Pharmacy</u>	<u>6.55</u>	<u>19.65</u>
Salaries	2.75	
Professional Staff	(1.70)	
Support Staff	(1.05)	
Allowances (15 percent)	0.40	
Operations	2.25	
Building Maintenance	(0.15)	
Utilities and Miscellaneous Operating Expenses	(1.00)	
Cost of Transport from Niamey		
Fuel	(0.40)	
Vehicle Maintenance	(0.70)	
Depreciation	1.15	
Buildings	(0.35)	
Equipment	(0.10)	
Vehicles	(0.70)	
TOTAL EXPENSES		58.55
Less Professional Salaries		<u>7.10</u>
		<u><u>51.45</u></u>

medicines that were expected to be in high demand cannot be utilized effectively without proper diagnosis. The necessary diagnostic capacity does not exist in most regions of Niger.

The project impact section recommends a revised list of medicines that is more in line with the needs of livestock producers and the diagnostic capacity of the Livestock Service. Although detailed microeconomic studies have not been carried out, there seems little doubt that there is a considerable potential demand for the recommended package of medicines. For instance, if a livestock producer with cattle, sheep and goats valued at 2.5 million F CFA (the equivalent of about 50 cattle) purchased 20,000 F CFA of medicines per year, the value of his animals would have to increase by less than 1 percent for him to obtain a positive return on his investment. This value increase could result from a few newborn animals not dying, or simply from more rapid growth of several animals in his herd. If 25,000 livestock producers spent 20,000 F CFA on veterinary medicines, Vetophar would be viable.

Two factors are critical in transforming this potential demand into an effective demand for Vetophar products. The first is an improvement in the livestock marketing system. This involves the increased integration of traditional livestock producers into the money economy. The economic return on veterinary medicines is much greater and more immediate when animals are being raised for sale instead of being kept in the herd.

Given the many uses of livestock in Niger (primarily as sources of milk for herder families and as stores of wealth), changing the orientation of herders from subsistence to commercial production is likely to be a long-term process. Improving the marketing system also involves making prices responsive to differences in animal size and meat quality. A fatter animal or higher quality meat is of no value to the herder unless the difference is reflected in the marketplace. This problem is widely recognized in Niger and studies are underway to find ways of improving the system.

The second constraint to increasing the effective demand for Vetophar products is simply lack of knowledge on the part of herders concerning the value of veterinary medicines and their proper use. Herders will always be willing to pay for medicines that have a consistently significant impact on animal productivity. However, when distributed without proper instructions, potentially profitable medicines can actually have negative effects on health and production. For this reason, it is essential that purchasers fully understand how to use medicines distributed through Vetophar.

Assuming that there is a sizeable potential demand for selected veterinary medicines in Niger, the key to Vetophar's success is a sound marketing plan. Vetophar is not a veterinary service or a livestock production extension service. It is an organization whose survival depends on its ability to supply

veterinary medicines at a reasonable cost. Its organization, administration, staffing and incentive systems should be oriented specifically towards the sale of medicines. Activities that do not contribute to increased sales in a cost effective manner should not be undertaken unless there are social benefits involved. In such cases subsidies should be provided by the GON. The specific steps that Vetophar should take to increase its chances of becoming commercially viable are described below.

Marketing Plan for Vetophar

Increasing Vetophar's sales from the present level of two million F CFA per month to 20 million F CFA per month will require a major marketing effort. The first step is a market analysis. Although a cursory comparison of medicine prices to the economic cost of animal illnesses in Niger indicates that there should be a strong demand for veterinary medicines, a more detailed analysis is required before Vetophar can put together a marketing strategy. The previous section described the diseases most likely to be important in Niger. Using this as a point of departure, there should be a study to verify the incidence of these diseases, obtain information on herder attitudes regarding their importance, and determine whether an effective demand for medicines to treat the illnesses exists or can be created.

Using the data obtained in an initial survey of this kind, Vetophar should set sales targets by type of medicine and by

geographic area. If, for instance, Vetophar determines that an annual sales volume of 250 million F CFA is needed to cover its operating costs, there should be some initial projections of where these sales are to take place. Sales of 20 million F CFA per month could consist of eight million F CFA in Niamey, six million F CFA in Zinder, three million F CFA in Tahoua, and two million F CFA to livestock production projects. Stating Vetophar's sales objectives in this way provides a much better indication of the type and magnitude of marketing effort required than simply using the present overall objective of balancing revenues and costs within three years.

The other main purpose of a market analysis should be to set a price policy using data on the economic value of the medicines, the nature of the Nigerien market for veterinary medicines and the costs of operating Vetophar. The existing margin of 15 percent for most of Vetophar's products was established during the design stage based on little or no information and needs to be revised. The margin accruing to Vetophar should be at least doubled from 10 to 20 percent, if it is to become financially self-sufficient in the medium-term. There would appear to be some scope for price increases. The economic cost of the major illnesses is clearly high enough to justify higher expenditures on medicines than is occurring at present. Vetophar's low sales volume is due to the poor selection of medicines, the absence of extension activity and poor organization rather than to excessive prices. In fact, the Vetophar Director maintains

that Niger's official prices for veterinary medicines are lower than in any of the neighboring countries.

Another price change that could easily help increase revenues is to vary the mark-up on different medicines. Demand for some veterinary medicines is more price elastic than for others, and there could be large changes in sales associated with changes in price. Also, since some medicines (i.e., those for horses, dogs, cats, and commercial poultry listed in Annexes K and L) are aimed primarily at a wealthy clientele, it would seem socially desirable, as well as commercially advisable, to have a higher mark-up on these products.

Once the market analysis has been completed, Vetophar will need to formulate a marketing plan. When the project was designed, it was assumed that medicines would be sold either directly to end users from the regional pharmacies or through a network of commercial distributors earning a 5 percent commission. It has now become clear that only limited sales can be made directly from the pharmacy, and distributors are much more difficult to recruit and train than originally expected. In fact, Vetophar now finds itself depending largely on the Livestock Service for the sale and distribution of its products.

In general, Vetophar should consider that it has three major distribution channels: the Livestock Service, donor-

funded livestock projects and commercial distributors in towns and markets. With a staff of only 11 professionals and technicians, it is obvious that Vetophar must use each of these channels to the fullest. One action that is long overdue is the establishment of a specific system for its two potentially largest clients: the Livestock Service and the donor-funded livestock projects. Since these organizations purchase medicines in bulk and will assume the task of distributing them to the end users, Vetophar's price should be based on the delivered cost of the medicines plus a charge for administrative and overhead expenses associated with the importation of the products. This part of Vetophar's operations should be streamlined and low cost. Orders should be made by the Livestock Service and the projects and filled by Vetophar in a routine and expeditious manner.

Vetophar's most difficult task will be the organization of the strictly commercial side of its operations. This has two aspects. First the duties and responsibilities of the Vetophar staff must be better defined than at present and, second, the distribution system below the regional pharmacy level must be put in place. For Vetophar to become financially self-sufficient, it is essential that it consider itself first and foremost a marketing organization. This means that the duties of its staff should be based on how they can be used most efficiently to maximize sales, and activities should be undertaken by Vetophar only if they can be justified in terms of increased revenues.

Vetophar's limited staff should not be involved in selling directly to end users. Their role should be to identify potentially lucrative markets, make demonstrations, find commercial outlets, train salesmen and, on a continuing basis, service a sales force that extends to the level of small towns and markets. Staff field trips should be justified primarily by leaving behind a functioning or improvised sales outlet; otherwise, in purely commercial terms the expense is not justified.

The same criteria should be applied to other parts of Vetophar's operations, especially infrastructure. A regional pharmacy is extremely expensive to construct and operate. Vetophar should have a policy of not constructing additional ones until they are clearly justified. One possibility is Maradi. At present, the Maradi region is covered by the Tahoua pharmacy which is tremendously costly and inefficient because of the great distances involved. The Tahoua pharmacy has a huge extension and marketing task in its own region aimed at increasing the sale of veterinary medicines where the few medicines that have been used have been traditionally provided free. With the exception of Tahoua, which can be expected to operate at a loss for the indefinite future, the regional pharmacies should aim at financial self-sufficiency. A strategy of setting up branch offices with limited staff (e.g., in Dosso and Diffa) would eliminate the need for high cost pharmacies in those areas, and perhaps also improve the financial performance of the Zinder and Niamey pharmacies. Another obvious need, at this time, is

for Vetophar to focus its marketing efforts in the sedentary zone of Niger. Since this area has received more exposure to veterinary medicines than the pastoral zone, less extension activity will be required. Also, because of the denser population and better infrastructure, the markets are easier and less costly to reach. Such a strategy would have a negative impact on benefit distribution, but unless it is pursued at least in the medium-term, it is unlikely that Vetophar will ever become commercially viable.

In the long run, a major feasibility issue for Vetophar is whether or not it can organize a commercial distribution network. Competent salesmen need to be found and a proper system of compensation established. This means going beyond simply establishing a 5 percent commission and assuming that distributors will eventually be found. At present, there are not definite plans for identifying commercial outlets. As noted in the section on project implementation, previous attempts have been unsuccessful. Also, there has been no attempt to assess the adequacy of the 5 percent commission. Clearly, if a commercial distributor must travel to a regional pharmacy, purchase the medicines on a cash basis, and travel from market to market to quate. Considerable work will be required to determine the preconditions needed to make the distribution of veterinary medicines profitable at the level of small towns and markets.

The task of becoming commercially viable as described in the three previous paragraphs will admittedly be difficult to achieve, especially in underpopulated rural Niger where supporting services are expensive and limited. It is too early to know whether or not Vetophar can succeed commercially, but a basic prerequisite is a good understanding by the management and staff of what constitutes an efficient and commercially viable organization.

In assessing the commercial viability of Vetophar, it should be noted that it is a parastatal organization, and as such could be expected to undertake activities that have social benefits but are not financially self-supporting. This is especially true during the early years when extension activities and institution building (including the training of staff) will be necessary. These needs and possibilities should be recognized and adequate funding should be made available through government subsidies.

To address the marketing problems discussed above, Vetophar will require the assistance of a marketing consultant. The consultant's major tasks would be to:

- Carry out a market analysis to define the market for Vetophar products, and establish a price policy based on the economic value of the products to the livestock producers and Vetophar's operating costs;
- Recommend organizational changes to maximize the cost-effectiveness of the staff and eliminate activities that do not contribute to increased sales and revenues;

- Recommends ways of putting together a network of commercial outlets for the sale of Vetophar products in towns and markets; and
- Conduct a short-term marketing training program for the Vetophar staff, and recommend a longer-term training program aimed at steadily increasing their marketing abilities.

Achieving these tasks would require a four-to-six-month consultancy. A complete scope of work is shown in Annex M.

THE UNIVERSITY OF CHICAGO

PART THREE: SUMMARY OF FINDINGS AND RECOMMENDATIONS

PROJECT IMPLEMENTATION

Project implementation has proceeded somewhat behind schedule, but by May of 1980, the basic infrastructure was constructed and equipped and the technical staff had been recruited and trained. It has become clear, however, that Vetophar will not achieve its sales volume targets by the end of the three-year implementation period. Recommendations for achieving sustained increase in sales volume are presented below under project sustainability. Actions that Vetophar should take to improve project performance during the implementation period are as follows:

1. An ongoing training program is needed for the Vetophar field staff. The program should include instruction on the proper use of medicines by herders and training in marketing and operations of commercial pharmacies.
2. Vetophar has a totally inadequate system of financial management. A short-term consultant is needed to set up a system that will assure the control of funds and serve the needs of management, yet be simple enough to be maintained by low-level bookkeepers. Also, Vetophar should be authorized to increase the salary of its accountant, thereby making it easier to attract adequately qualified individuals.
3. The Vetophar director is overly involved in day-to-day administration and is consequently unable to deal with the complex and difficult issues affecting the long-term viability of Vetophar. A deputy director with strong administrative abilities and a good understanding of what is involved in operating a commercial pharmacy should be recruited as soon as possible.

4. Given the fact that Vetophar has not been able to develop a capability in the extension and distribution of veterinary medicines, considerable short-term benefits could result from better coordination with and support from the Livestock Service and donor-funded livestock projects. Since Vetophar has only 11 technical staff, most of the extension work required by Vetophar will have to be performed by these two organizations.

There are several problems in the refrigeration which is used for the cold storage of drugs. The refrigeration unit in the central pharmacy reaches too high a temperature during the off phase of the cooling cycle. Also, the refrigerators in the regional pharmacies were judged too small for practical pharmacy use and were removed from the pharmacies, leaving them with no cold storage facilities for drugs and vaccines.

5. The walk-in refrigerator in the central pharmacy should be adjusted to operate between 2°C and 7°C. Two 15 to 17 cubic foot refrigerators should be purchased for each regional pharmacy. They should be operated from reduction transformers if necessary.

PROJECT IMPACT

Vetophar is attempting to address most of the economically significant diseases in Niger. The major diseases that are not being addressed are the infectious diseases that are the targets of vaccination campaigns by the Livestock Service; however, the campaigns against several of these diseases are very sporadic. If effective vaccines are made available by Vetophar, the herders

will purchase them.

6. Vetophar should stock vaccines against pasteur-
ellosis, clostridial infections including black-
leg, and leptospirosis.

Feed concentrates which are useful during the last part of the dry season will be sold through a number of different outlets. Vetophar regional pharmacies should contribute to this distribution network because many of the nutritional deficiencies are of such severity that they produce pathological consequences.

7. Vetophar should sell a high energy milled feed with 12 to 14 percent protein. The feed can be sold to herders by bulk or by the kilogram.

Because the mineral block currently being sold by Vetophar is not palatable, it is not serving its function of providing trace minerals and addressing calcium and phosphorus deficiencies.

8. It is recommended that, instead of the existing blocks, Vetophar stock salt/trace mineral blocks and a granular, free choice, vitamin mineral mixture containing calcium, phosphorus, vitamin A and copper sulphate.

At the present time, anthelmintics account for over 70 percent of Vetophar's sales. It is widely assumed that helminthoses are economically important illnesses in Niger and, for this reason, the Livestock Service recommends a strategic anthelmintic program whenever possible; however, there is inadequate epidemiological and economic data on the helminthoses to justify a full-fledged control program.

9. Vetophar should not promote such a control program until the necessary epidemiological research has been carried out. Instead, Vetophar should recommend ad hoc treatments of herds when young cattle and small ruminants are observed to be in poor body condition.

Although the morantel tartrate currently being sold by Vetophar for the treatment of internal parasites is low-cost and effective, a considerable number of livestock producers have previously been exposed to and prefer thiabendazole.

10. Vetophar should stock both morantel tartrate and thiabendazole.

Fascioliasis is an important internal parasitic disease that occurs in wetter areas, but it cannot be diagnosed by herders.

11. Drugs to treat this disease, specifically rafoxamide and Disto-5, should be distributed only by the veterinary service and should be replaced as soon as possible by the broad spectrum drug, albendazole.

It has not yet been demonstrated that spraying for ticks is economic for traditional herders, and the side effects can be serious.

12. The use of insecticides should be limited to commercial enterprises with confined animals. Also, Vetophar should switch from the malathion and diazinon to pyrethroids with a synergist which is less toxic.

Instead of using an insecticide to control ticks, the small herder should treat tick-borne infections when clinical signs appear.

13. Vetophar should stock oxytetracycline in oil and diminazine acetate which can be administered by the herder.

In addition to switching insecticides, special measures are needed to regulate its use for external parasite control.

14. Vetophar should give the insecticide a Class B designation (see recommendation 20) and sell it in bottles of up to one liter properly labelled in French.

Thus far, Vetophar has had a policy of not providing injectable drugs directly to the herders, primarily because they would not know how to use them and would, on balance, probably cause more harm than good. This has been one of the main reasons why anthelmintics in bolus form have become Vetophar's main product. The evaluation team feels that this policy is resulting in many important diseases not being treated and that herders can, in fact, be taught how to and when to inject their animals.

15. Vetophar should sell a number of injectable drugs including antibiotics and vaccines directly to herders (see Annex H) and should sell disposable needles and syringes for administering them.

Vetophar can have a maximum impact by promoting herder-administered drugs and vaccines. It needs to revise its list of commodities in order to be able to provide the herder with a good selection of effective products.

16. Vetophar should revise its range of products and stress Class A commodities (see recommendation 20).

A concerted extension effort should be undertaken so that Vetophar can distribute a wide range of drugs that can be administered by herders, including vaccines and other injections.

17. A coordinated extension effort by Vetophar, the Livestock Service and the livestock production projects should be given the highest priority during the next two years.

There are diseases which can only be addressed through coordinated activities and strong diagnostic capability. The only role which Vetophar can play in controlling these diseases is to supply drugs and vaccines to the Livestock Service.

18. The Livestock Service should concentrate its efforts on the diseases in Annex I. It should take over the administration of rabies and contagious pustular dermatitis vaccines.
19. The GON should seek funds to expand the epidemiological research capacity of the Livestock Service in order to better identify and establish priorities among the diseases which the Livestock Service should address, and those which can be addressed through herder-administered treatments.

The above recommendations are all aimed at increasing the impact of Vetophar on animal health and productivity. Several steps are also needed to minimize the negative side effects that could result from the misuse of drugs. In addition to being categorized by type of illness treated, Vetophar products should be classified by those that can be distributed without restrictions, and those that are available only to professional animal health personnel.

20. Drugs sold by Vetophar should be designated Class A (unrestricted distribution) and Class B (restricted distribution).

The evaluation team noted many drugs with inadequate labelling. If the recommendation to distribute a wider range of drugs directly to the herder is accepted, it becomes particularly important to have proper labelling. To the maximum extent possible, the instructions should be intelligible to illiterate herders.

21. Vetophar should use graphic labels on Class A drugs and make French translations of labels for Class B drugs.

PROJECT SUSTAINABILITY

The basic precondition for long-term sustainability is that Vetophar's products provide a positive return to the livestock producer. Comparison of medicine prices with the economic costs of various illnesses indicates that the products listed in Annex G are economic. However, beyond this very little is known about the market for veterinary medicines and related products in Niger.

22. Vetophar needs to carry out a market survey to define more precisely the nature of the market for veterinary medicines, indicate an appropriate marketing strategy for transforming potential demand into effective demand and provide a basis for setting price policy. An output of the market analysis should be revenue projections based on expected sales volumes and possible markups.

Even if the market exists for veterinary medicines, Vetophar has not yet demonstrated that it can generate an effective demand for its products and distribute them in a cost-effective manner. The following three recommendations deal with measures needed to make Vetophar more effective as a marketing organization.

23. It is essential that Vetophar become first and foremost a marketing organization. There needs to be a thorough analysis of all aspects of Vetophar's operations to determine whether increased sales are being pursued in the most cost-effective way possible. In particular, the tasks of Vetophar's limited staff must be specifically outlined to assure that their day-to-day activities are truly market oriented.
24. One way of increasing cost-effectiveness is to streamline dealings with the two largest purchasers: the Livestock Service and the donor-funded livestock project. Since they order in bulk and handle all distribution to end users, special prices should apply to these two organizations. Also, Vetophar should be organized to serve their large orders, routinely, efficiently and expeditiously.
25. A major shortcoming of the project to date has been the inability to set up a commercial distribution network below the regional pharmacy level. Urgent attention needs to be given to who should be recruited to sell Vetophar products in towns and villages, what their commissions should be and what specific arrangements should exist between them and Vetophar.
26. To implement the previous three recommendations, Vetophar will require a marketing consultant for six months. Annex M presents a recommended scope of work.
27. No additional pharmacies should be constructed until the long-term commercial viability of Vetophar has been more clearly established. Since sales volume is growing more slowly than anticipated, however, additional funds should be sought to supplement the revolving fund and/or subsidize operating expenses for at least an additional two years.

ANNEXES

ANNEX A

LIST OF INDIVIDUALS CONSULTED

Vetophar

Dr. Sani Haladou, Director of Vetophar
Mr. Abdou Mounkaila, Accountant
Mr. Abdou Adamou, Chief of the Regional Pharmacy, Niamey
Mr. Amadou Louley, Chief of the Regional Pharmacy, Zinder
Mr. Hadi Moussa, Chief of the Regional Pharmacy, Tahoua

Government of Niger Livestock Service

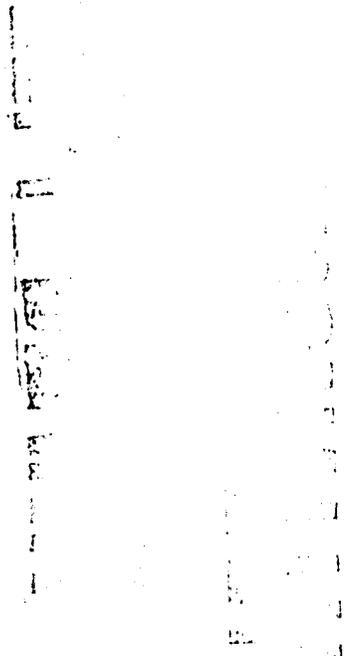
Dr. Ibrahim Ari, Director of the Livestock Service
Dr. Ali Dankintafo, Director of the Project Gestion des
Paturages, Maradi
Dr. Seydou Gamarou, Director of the Livestock Service for
Zinder Department
Dr. Salissou Mayana, Chief of the Zootechnical Division,
World Bank Project Niger Centre-Est, Zinder
Mr. Mahamadou Issaka, Chief of the Livestock Service for
Tchin-Tabaradin Arrondissement
Mr. Chambellant, Director of Embouche Paysanne et Gestion
Pastorale, Niamey

Entente Fund

Mr. Leroy Rassmussen
Mr. Steven Lehman
Mr. Jean Ruche

USAID

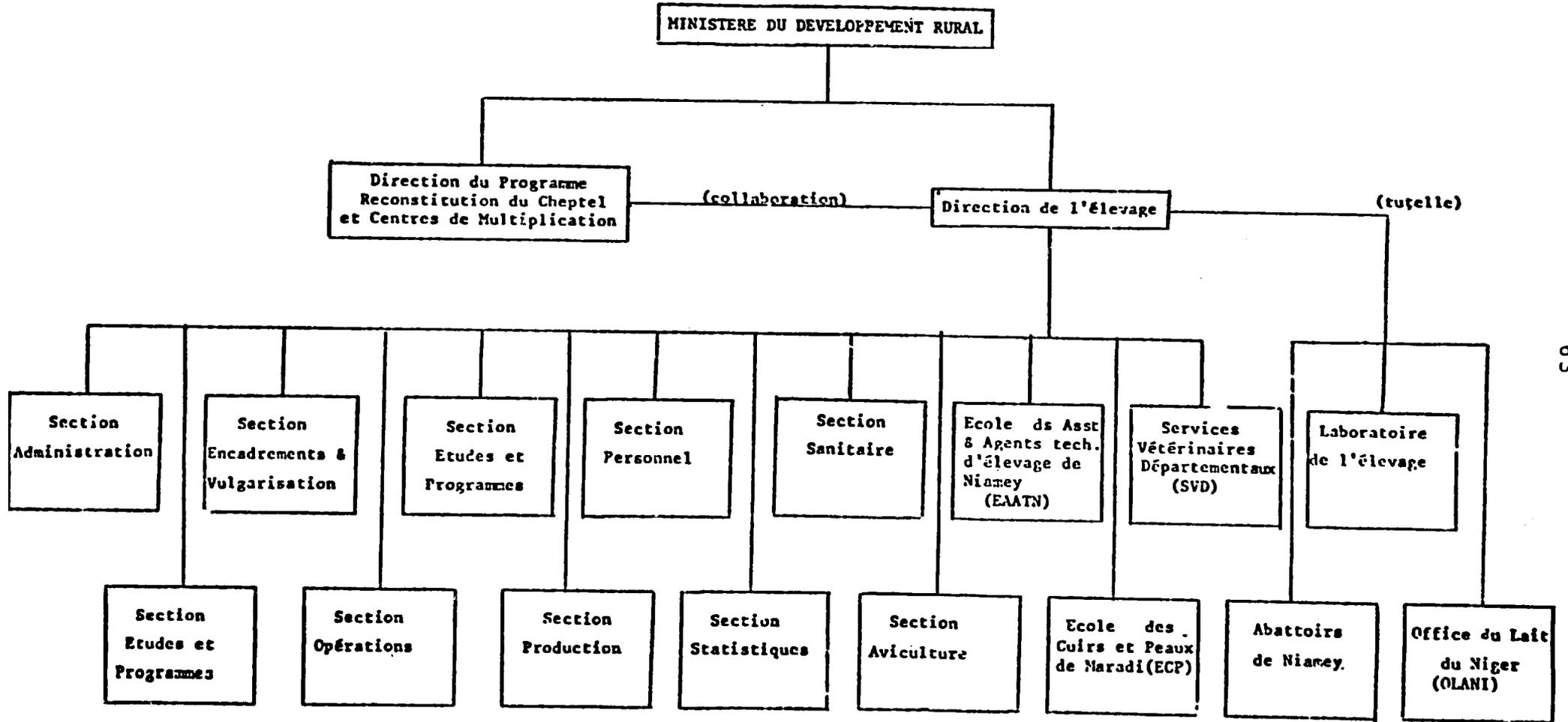
Murl Baker, USAID/Niger
Wilbur Thomas, USAID/Niger
Paul Daly, USAID/Niger
Robert Beaman, Range Manager
Jeremy Swift, Anthropologist



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ANNEX B

ORGANIGRAMME DU SERVICE DE L'ELEVAGE



ATTORNEY
GENERAL

ANNEX C

COMMODITIES STOCKED BY VETOPHAR AS OF OCTOBER 30, 1980

Vaccines

Brucellosis
Rabies

Antimicrobials

Oxytetracycline (four oral formulations, some with vitamins)
Penicillin with streptomycin, injectable (three products)
Hemodiarrh
Sulfaguanidine plus

Antiparasitic Agents

Amprolium
Piperazine
Diminazine Aceturate
Isometamidium
Morantel Tartrate
Disto-5
Niclosamide
Rafoxamide
RHC
Malathione with Diazinon
Lindane Cream

Miscellaneous

Cinch Horse Supplement
Spray Tanks
Embryotomy (cutting) wire
Emasculatomes
Therapogen
Mineral salt blocks
Rope (ordered but not yet received)

THE UNIVERSITY OF CHICAGO

PHYSICS DEPARTMENT

ANNEX D

BUDGET

	US\$ (000s)	F CFA (000,000s)
<u>Infrastructure</u>	<u>\$527.4</u>	<u>134.5 F CFA</u>
Entente Fund:		
Central pharmacy	195.3	49.8
Two regional pharmacies	64.7	16.5
Contingencies	12.5	3.2
Government of Niger:		
Director's residence	78.4	20.0
One regional pharmacy	35.3	9.0
USAID:		
Three houses attached to pharmacies	141.2	36.0
<u>Capital Goods</u>	<u>127.7</u>	<u>32.6</u>
Entente Fund:		
Equipment for pharmacies	18.8	4.8
Vehicles: one station wagon, one light vehicle, three all terrain pickups	53.3	13.6
Audiovisual training mater- ials	34.1	8.7
Government of Niger:		
Office furniture	21.5	5.5
<u>Revolving Fund for Medicines</u>		
Entente Fund	<u>672.5</u>	<u>171.5</u>
<u>Recurrent Costs</u>	<u>506.9</u>	<u>129.0</u>
Entente Fund:		
Supporting staff salaries	74.9	19.1
Operation and maintenance of vehicles	48.2	12.3
Operation and maintenance of pharmacies	56.9	14.5
Travel expenses for Veto- phar staff	18.8	4.8
Government of Niger:		
Professional salaries	143.1	36.5
Operation and maintenance of vehicles	59.2	15.1

	<u>US\$</u> <u>(000s)</u>	<u>F CFA</u> <u>(000,000s)</u>
Vetophar:		
Depreciation of vehicles and buildings	22.4	5.7
Provision for inflation in replenishing stock	83.4	21.0
TOTAL	<u>1,834.5</u>	<u>467.6</u>
Entente Fund	1,250.0	318.8
Government of Niger	337.5	86.1
USAID	141.2	36.0
Vetophar	105.8	26.7

NOTE: This budget is based on estimates made during the design of the project adjusted to reflect activities that were added after the project was approved. The additional expenditures are:

- One house for the Vetophar Director funded by the GON;
- One regional pharmacy in Niamey funded by the GON; and
- Three houses for the heads of the regional pharmacies funded by USAID/Niger with counterpart funds.

Actual expenditures differed slightly from what was originally budgeted because of the depreciation of the dollar and delays in implementation which resulted in purchases at inflated prices. The impact of these developments on the project are discussed in the section on project performance to date.

ANNEX E

LOSSES CAUSED BY NUTRITIONAL AND INFECTIOUS DISEASES

Growth

1. Slow growth
2. Poor feed utilization
3. Fever-sustained caloric consumption
4. Excessive weight loss
5. Permanent stunting of growth
6. Lameness
7. Lack of muscle development

Production

1. Abortions and early embryonic death
2. Neonatal and juvenile mortality
3. Maternal death
4. Reduced milk supply
5. Rejection of meat, milk, and hides by consumers

Reproduction

1. Infertility and sterility
2. Low reproduction rates
3. Repeat breeding
4. Prolonged anestrus
5. Retained placenta
6. Delayed maturation
7. Long generation interval

ATTORNEY AT LAW

ATTORNEY AT LAW

ANNEX F

LIVESTOCK DISEASE CONDITIONS ADDRESSED BY VETOPHAR

Malnutrition

Vitamin deficiencies
Mineral deficiencies

Internal Parasites

Fascioliasis
Parasitic gastroenteritis
Cestode infections

External ParasitesTrypanosomiasis, bovineExternal Wounds

Myiasis
Eye abrasions

Neonatal Enteric and Septicemic Diseases

Coccidiosis
Bacterial infections

BrucellosisFrothy BloatContagious Pustular DermatitisNon-Specific Conditions

Pneumonia
Systemic bacterial infections
Diarrhea
Dysentery

Rabies

LEWIS & CLARK

EXPLORATION

ANNEX G

RECOMMENDED TARGET DISEASES

Malnutrition

Caloric and protein deprivation
Vitamin deficiencies
Mineral deficiencies

PasteurellosisInternal Parasites

Fascioliasis
Parasitic gastroenteritis

Tick-Borne Diseases

Protozoal
Rickettsial

Clostridial Diseases

Blackleg
Malignant edema
Enterotoxemias

Trypanosomiasis

Bovine
Cameline

Mycoplasmal Infections of Sheep and GoatsExternal Wounds

Bacterial infections
Myiasis
Eye abrasions/infections

StreptothricosisLeptospirosisNeonatal Enteric and Septicemic Infections

Coccidiosis
Bacterial infections

LETTERS

TO THE

ANNEX H

RECOMMENDED COMMODITIES FOR VETOPHAR

ClassVaccines

- A Pasteurella multocida oil adjuvant vaccine
- A Multivalent clostridial bacterin
- A Multivalent leptospiral bacterin

Antimicrobials

- A Tetracycline in oil, injectable
- B Procaine penicillin with dihydrostreptomycin, injectable*
- A Sulfaquinoxaline boluses
- A Nitrofurazone eye and wound powder

Antiparasitic Agents

- A Morantel tartrate*
- A Thiabendazole
- A Albendazole
- B Rafoxanide*
- A Diminazine aceturate*
- B Isometamidium*
- A Suramin
- B Quinapyramine sulfate
- B Malathione or pyrethroids with synergist
- A Lindane cream*

Miscellaneous

- High energy concentrate
- Local or trace mineral salt blocks
- Granular vitamin mineral mixture with 0.5 percent copper sulfate
- Oral electrolyte powder
- Disposable syringes with needles, 10 cc.
- Emasculatomes*
- Spray tanks*
- Rope*
- Embryotomy (cutting) wire*
- Plastic umbilical clips
- Ear tags and applicators
- Large animal fever thermometers
- Disinfectant for premises

* Items currently stocked by Vetophar.

ANNEX I

RECOMMENDED TARGETS FOR LIVESTOCK SERVICE CAMPAIGNS

Rinderpest

Bovine pleuropneumonia

Anthrax

Poxvirus infections of ruminants

Rabies

Brucellosis

Bovine tuberculosis

Foot-and-mouth disease

Small ruminant pest

THE UNIVERSITY

OF CALIFORNIA

ANNEX J

INFORMATION PRINTED ON THE PACKAGE OF DICHLORVOS HORSE WORMER*

STORE AT LESS THAN 80°F.

USE DIRECTIONS: Dichlorvos Horse Wormer is designed to be given to individual horses in $\frac{1}{4}$ the grain portion of the ration at a single feeding. The wormer should be mixed into the grain just prior to administration. The remainder of the grain may be fed after the consumption of the medication. Do not change grain, but add the wormer to the grain that the horse is accustomed to eating. Due to known variability of grain consumption in sucklings and young weanlings, Dichlorvos Horse Wormer is not recommended for them. Fasting prior to dosing is not necessary or recommended. To insure maximum bot removal, withhold all water for 4-6 hours before and for 3 hours after consumption of the medicine. Consult your veterinarian for assistance in the diagnosis, treatment and control of parasitism.

The weight of each animal should be carefully determined and the correct dosage administered.

DOSAGE SCHEDULE
ADMINISTER ONE (1) PACKET TO
HORSES WEIGHING BETWEEN 901 AND 1,200 LBS.

USE PRECAUTIONS: Do not administer Dichlorvos Horse Wormer to horses affected with heaves or suffering from colic, diarrhea, constipation or an infectious disease until such conditions have been corrected. Horses who have recently had or are about to have surgery, or are to be anesthetized for any reason, should not be treated without first consulting a veterinarian. Dichlorvos Horse Wormer should not be given in conjunction with or within one week of the administration of tranquilizing drugs or other worm medicines. Horses should not be subjected to any insecticide treatment for five days prior to or after dichlorvos treatment. Consult your veterinarian before using in severely debilitated animals.

WARNING: Do not allow fowl access to feed containing this preparation or to manure from treated animals. Use contents immediately after opening package. Do not store unused drug or feed containing the drug. Avoid contact with the skin. Do not use in animals other than horses, ponies, and mules. Do not use in horses, ponies or mules intended for food purposes. Dichlorvos Horse Wormer is a cholinesterase inhibitor.

Do not use this product in animals simultaneously or within a few days before or after treatment with, or exposure to, cholinesterase-

* Shell Chemical Company.

inhibiting drugs, pesticides or chemicals. NOTE TO PHYSICIAN OR VETERINARIAN: Atropine is the animal antidote. Atropine and 2-PAM are the human antidotes.

ATTENTION: User should acquaint himself thoroughly with the contents of the package insert prior to use.

ANNEX K

MEDICATIONS FOR HORSES, DOGS AND CATS

Horses

Cinch vitamin mineral supplement
Phenylbutazone
Carb. vl
Combiotic
Antraquinone
Cardiostyl
Equigard

Dogs and Cats

Vaccine antirabique
Chloram-Frecortyl, 50 cc
Chloram-Frecortyl, 250 cc
Dog-calcium
Gastro-dog
Globufer A.D.N.
Hepatodog
Hydrocortidern fort
Intestidog C
Keratobiotic
Phytorenal C
Stromitten
Thionicapil S

DEFI BANK

LENDING

ANNEX L

MEDICATIONS FOR POULTRY

Fongistop
Stovarsol Sodique
Vitamins, 20 cc.
Vitamins, 50 cc.
Biogene
Dekavi A
Dekavi B
Infectious bronchitis vaccine
Amprol
Coccistop
Vivagerms
Propyl
Terramycin 25 percent
Ck3
Gumboro vaccine
Terramycin - vitamine
Tylan
Dowgene
PBH spray
Rabond
Newcastle disease vaccine
Stromitten
Niclosamide
Pox vaccine

THE
MAY
1954

ANNEX M

SCOPE OF WORK FOR THE MARKETING CONSULTANT

Background

Vetophar is a parastatal organization in Niger which is responsible for the importation and commercial distribution of veterinary medicines except those that are provided free by the GON Livestock Service. At the moment, there is a central pharmacy in Niamey and three regional pharmacies in Niamey, Zinder and Taboua. The organization began operations in May 1980. The target sales volume is about 180 million F CFA for the first year, increasing to about 325 million F CFA by the third year. After five months in operation, Vetophar's sales are running at about 2 million F CFA per month, and unless major changes are instituted very soon, will not achieve 200 million F CFA during the next couple of years.

The main reason that sales are so low is that Vetophar is not yet properly organized to function as a cost effective marketing organization. The 11 persons that make up Vetophar's existing professional and technical staff have all received their basic education in animal health care and are all ex-employees of the Livestock Service. They received some training in marketing before they began working for Vetophar but, in general, there is very little understanding within the organization of how to put together a sound marketing strategy. Most

important, there is presently no commercial distribution network below the level of the three regional pharmacies. Consequently, Vetophar's sales, to date, have been made either directly by the Vetophar staff or through the Livestock Service which has veterinary stations located throughout the country.

Required Tasks

To help Vetophar become an effective marketing organization, the marketing consultant will perform the following tasks:

- Carry out a market analysis to define the market for Vetophar products and establish a price policy based on: (a) the economic value of the products to livestock producers; and (b) Vetophar's operating costs. The market analysis will use as a point of departure the list of diseases that are known to be of greatest importance in Niger and the generally accepted treatments for those illnesses. This information can be found in the recent evaluation of Vetophar conducted by Development Alternatives, Inc. The market analysis will seek to determine whether herders are aware of the economic importance of the major diseases and what is involved in educating them on the proper treatment of the diseases and on the proper use of Vetophar products.
- Recommend organizational changes to maximize the cost effectiveness of Vetophar's staff and eliminate activities that do not contribute to increased sales and revenues. This will include looking at all facets of Vetophar's operations to determine how and to what extent they contribute to the organization's main objective -- marketing. Of particular importance will be careful descriptions of duties and responsibilities of all Vetophar staff from the Director down to the field staff attached to the regional pharmacies.

- Recommend ways of creating a network of commercial outlets for the sale of Vetophar products in towns and markets. This includes selecting appropriate sales agents (i.e., existing stores and shops, individuals willing to sell medicines on a part-time basis, and members of herder families with sufficient education to market medicines) and providing them with proper incentives. The present five percent commission provided to commercial distributors needs to be carefully studied and revised to reflect costs incurred by distributors and the remuneration needed to make the sale of veterinary medicines financially attractive.
- Conduct a short-term marketing training program for the Vetophar staff and set up an ongoing training program aimed at achieving a steady improvement in their marketing abilities.

Schedule of Work

The consultancy will be for a period of six months.

Regional Qualifications

The consultant should be trained in the principles of marketing and have had experience in marketing to developing countries. He should speak French fluently.

Source Documents

Projet de Création d'une Pharmacie Centrale Veterinaire et d'un Reseau de Distribution et de Vulgarisation, Louis Berger International, Inc., E. Orange, N.J. and Abidjan, I.C., November 1977.

Mid-Term Evaluation of the Niger Vetophar Project, Development Alternatives, Inc., Washington, D.C., December 1980.