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Ecuador

*NIS 87*

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Figure 1: Veterinary Services in Ecuador, 1962.

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Ecuador

A. General

Ecuador's capability for providing adequate animal health services or veterinary public health requirements is seriously impaired by a lack of well-qualified technical personnel and failure on the part of the government to provide sufficient operating funds for disease and parasite control programs. Only a relatively few livestock owners are in a position to finance animal health care, and a vast majority of the domestic animals receive neither preventive nor curative treatment. A number of diseases and parasitic conditions in animals in Ecuador are serious public health problems and supervision over processing and handling of livestock products is, in most instances, below reasonably acceptable standards.

Although a considerable effort has been made to develop and expand the dairy industry through importation of high quality American or European stock, disease, infertility and unfavorable environmental factors have limited its growth to relatively small areas of the Sierra around Quito (O-13S - 78-30W).

A major share of the small growth in veterinary services and animal health program planning is attributable to the technical assistance of international organizations, such as the Food and Agriculture Organization (FAO), the Pan-American Health Organization (PAHO), and the United States Agency for International Development (AID). 7/ 9/ 10/ 11/ 12/ 20/

B. Environmental factors

1. Topography and climate -- Ecuador's geographic location and unusual topography create diverse problems in animal production and health. The country is divided into

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three separate zonal categories so far as livestock raising is concerned. These are, the Sierra or rugged mountain area, over 4,000 feet in elevation, extending through the center of the country from north to south; the Litoral, or coastal, tropical lowland; and the Oriente, much of which is jungle or rain forest. While none of these regions are generally favorable for efficient livestock production, localized areas in each offer some circumstances conducive to raising adaptable animal types. The mountain areas produce a cardiac syndrome known as "brisket disease" in a great number of animals other than aucheniae (llamas, alpacas and vicunas), and the tropical Litoral and Oriente areas limit production to heat tolerant and insect resistant species, such as zebu or criollo (native) cattle.

Communication in all three areas, aside from the immediate vicinities of major cities is difficult or lacking. 7/ 10/ 11/ 12/ 17/

2. Socio-economic problems -- The Sierra, heavily populated by Indians, has little available land resources for expansion of grazing and the people necessary to develop a pastoral agriculture in the Litoral or Oriente refuse to leave their traditional mountain homes. Animal owners in the Sierra, aside from a few wealthy families, are illiterate, superstitious natives who are little impressed by efforts of the government to protect animals from diseases and parasites. Extension services or animal health demonstration projects have not significantly drawn aside the mantle of illiteracy, superstition, and lethargy that encompasses the great majority of livestock raisers. As a result, this population segment is not only afflicted by a number of diseases of animals transmissible to man, but animal productivity is seriously curtailed.

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Ecuador is currently lagging behind her neighbors, Colombia and Peru, in attempting to provide a sound system of veterinary training and development. Resources are squandered in supporting a number of substandard veterinary educational institutions and failing to adequately supervise and control production and distribution of veterinary medicaments. 7/ 10/ 11/ 12/

### 3. Animal and plant life (veterinary significance)

#### (2) Flies

Dermatobia spp. - causing warble infestation.

Cochliomyia spp. - screwworm infestation.

Gestrus ovis - sheep nasal fly.

#### (3) Ticks and mites

Boophilus microplus - transmits piroplasmosis and anaplasmosis.

Sarcoptes scabiei - causes mange in bovines and possibly sheep.

#### (7) Mollusks

Limnaea truncatula is the principal intermediate host of fasciolae.

#### (8) Worms

Fasciola hepatica - the liver fluke of domestic animals.

Echinococcus granulosus - the tape-worm of carnivora causes extensive hydatidosis in humans.

Taenia solium - leads to cysticercosis (pork measles) in swine.

Taenia saginata - leads to cysticercosis in beef.

9/ 10/ 12/ 13/ 35/ 36/

### 4. Nutrition

b. Food supply and distribution -- The lack of transport facilities, both road and rail, is an underlying factor in the low consumption of animal protein in

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Ecuador. Fresh meat, milk or fish are available only around the major towns, since transport of other than dried or heat processed products is virtually impossible.

While a low level of economic development and traditional food habits influence the rate of protein consumption, a considerable overall increase could be expected if proposed transport and distribution facilities were developed. 7/ 8/ 9/ 10/ 12/ 14/

c. Food sanitation, storage, and technology -- Adequate inspection and sanitary handling of meat and other animal products is neglected at virtually all levels of processing and distribution. Regular meat inspection is carried out at only the two major slaughterhouses in Quito and Guayaquil (2-10S - 79-50W), and further sanitary supervision until it reaches the consumer is neglected. The bacteriological quality of milk received for pasteurization is very poor and that of raw milk for distribution is even worse. Lack of refrigerated transportation makes distribution outside the immediate vicinity of processing and collection plants impossible. 6/ 7/ 8/ 9/ 10/ 21/ 24/

## C. Diseases

### 2. Animal diseases

#### a. Prevalent animal diseases

(1) Piroplasmosis -- Piroplasmosis, a protozoan blood disease of cattle, is a most serious obstacle to livestock development programs. Introduction of European cattle breeds into areas other than the high altitude region where tick activity is low is at present impractical. Regular tick control in the form of dipping cattle or reducing pasture infestation continues to be ignored. Criollo and zebu cattle withstand the disease but fail to attain high productivity. To survive at all, European breeds must be exposed to infection at a young age (premunition),

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and if reasonable production is expected such animals require much greater protection against ticks than do the criollo or zebu cattle. 2/ 5/ 10/ 12/ 13/ 35/ 36/

(2) Anaplasmosis -- Anaplasmosis, also transmitted by ticks, is nearly as serious among dairy cattle as piroplasmosis. Survival after infection is generally more common in anaplasmosis, but debility is severe and long standing. 2/5/10/12/13/35/36/

(3) Foot-and-mouth disease -- Ecuadorian cattle are periodically affected by foot-and-mouth disease either from reservoirs of infection within the country or through introduction of the disease from bordering countries. Since animal inspection and quarantine requirements are enforced only at sea entries, the country can expect continuing outbreaks as long as the disease remains active in neighboring areas. This disease seldom spreads in epizootic waves as it does in open range country, for the mountains and rivers interpose natural barriers and transport of livestock either by commercial carriers or on foot is extremely limited. Vaccination is practiced in outbreak areas but this procedure is generally accomplished too late to materially alter the course of the disease. The most serious losses occur on the occasions when the disease affects dairy animals in the Sierra. 2/ 10/ 12/ 13/ 23/ 25/ 26/

(4) Brucellosis -- Brucellosis (B. abortus) is common among dairy animals and a major contributing factor to a high rate of infertility. The extent of spread to range animals is currently not known. Vaccination, using Strain 19 abortus vaccine, is increasingly popular, and the major dairy producers are interested in establishing other control measures as well. Since the milk supplies are generally boiled there is little chance of spreading the disease widely to the human population. However, farm and dairy workers, as well as individuals who consume certain types of unpasteurized cheese, are frequently exposed to infection. 2/ 10/ 26/

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(5) Cysticercosis and Echinococcosis -- Although official reports indicate moderate animal infection by these parasitic forms, observers have noted heavy rates in slaughter animals. Only a small proportion of livestock are inspected and such inspection is cursory at best. Consequently, the true incidence of infection is actually not known. 2/ 10/ 12/ 13/

b. Other important animal diseases -- Other important animal diseases include Johne's diseases, mastitis, leptospirosis, anthrax, tuberculosis, and various ectoparasitic infections in cattle. Hog cholera, pasteurellosis and a host of parasitic conditions are common in swine. Sheep are affected by pasteurellosis and parasitic conditions and suffer seriously in sparse mountain pasture areas from deficiency conditions. The major poultry diseases are fowl pox and avian leukosis. Rabies is a recurrent problem in some areas and domestic livestock is not infrequently affected as a result of bites of carnivora. 2/ 10/ 12/ 13/

#### D. Veterinary medical organization and administration

##### 1. Civilian

a. Organization -- Veterinary services in Ecuador are primarily a nationalized function. The Directorate of Livestock and Veterinary Services within the Ministry of Development is fundamentally responsible for all the major veterinary activities in the country. Small localized veterinary programs, utilizing national veterinarians advised by American veterinary personnel, conduct extension and training programs under the Servicio Cooperativo Interamericano de Agricultura (SCIA) programs of the U.S. Agency for International Development. The director of Livestock and Veterinary Services is also responsible for the major prescribed meat inspection routines, although municipalities in a few cases employ local veterinary inspectors for such activities. An animal inspection and quarantine branch, under the Director

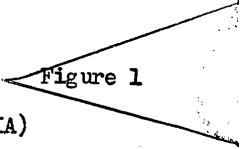


Figure 1



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of Livestock and Veterinary Services, is active at sea ports of entry for livestock and livestock products. However, comparable activity at land border points in connection with intra-country livestock movement is seriously neglected.

A few veterinarians are engaged in private practice chiefly dealing with the purebred imported herds of wealthy ranchers and a few are engaged in commercial biological and pharmaceutical industry. International organizations, such as the U.S. Agency for International Development, the Food and Agriculture Organization of the United Nations and the Pan-American Health Organization provide veterinary technical advisory services for developing specific projects of interest to the government.

A recent outbreak of foot-and-mouth disease has stimulated a rash of activities, apparently uncoordinated, by the Food and Agriculture Organization, the Pan-American Health Organization, the Agency for International Development, and even the United States Freedom from Hunger Foundation. Action ranges from providing vaccine from sources outside Ecuador to consideration for plans for a diagnostic laboratory, and even a combined diagnostic-vaccine production unit as well, to providing technical assistance in field operations, research and diagnosis.

For administrative purposes the Director of Livestock and Veterinary Services divides his organization into two principal zones, one concerned with the Litoral and one with the Interior or Sierra. Each is administered by a sub-director, since the two areas have distinct interests, resulting from topography, climate and character of livestock. Both sub-directors include under their jurisdiction a Director of Veterinary Laboratory Investigations, one located in Quito and the other in Guayaquil.

Unfortunately, four veterinary schools, all started in relatively recent years, have built up a dominating influence over veterinary activity in each locality of

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their operation. This has led to a serious factionalism which obstructs coordinated veterinary programs - an obstacle the Director of the national veterinary services cannot overcome. 1/ 2/ 9/ 10/ 12/ 13/ 20/

b. Legal controls

(1) Licensure -- The only requisite for veterinary practice or employment in Ecuador is graduation from one of the country's four veterinary colleges or from a foreign veterinary school recognized by the governmental veterinary authorities. 32/ 34/

(2) Quarantine -- Control over imports of foodstuffs and livestock influencing health of animals or possible introduction of disease from external sources and through internal movement, is prescribed in an Emergency Decree Law No. 19 of 1959. Incorporated in this law is the Law for Animal Sanitation, which specifies health inspection and quarantine requirements, and charges its administration to the Director of Livestock and Animal Health in collaboration with the Institutes of Veterinary Investigations of the Litoral and the Sierra. 10/ 12/ 13/ 20/

(3) Inspection -- Nominal veterinary inspection of slaughter and meat processing plants exists at most meat and meat products producing centers. The quality of inspection is low and considerable meat unfit for human consumption or fit only for special processing finds its way to markets or consumer channels. 1/ 8/ 9/ 10/ 12/ 13/

c. Professional veterinary organization -- At least two major veterinary associations exist. One is located in Quito and the other in Guayaquil. Their chief aim is, apparently, to protect what is thought to be prerogatives of veterinarians or veterinary services in their respective areas. Platitudinous expressions upholding professional ethics and responsibilities emanate from both, and at that point activity ceases to exist. 32/

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d. Emergency veterinary services -- Ecuador's veterinary services, as currently organized and staffed, could not cope with a serious animal disease outbreak requiring emergency action. International organizations are currently attempting to assist Ecuador in a campaign against a recently introduced outbreak of foot-and-mouth disease. 10/ 12/ 13/ 23/ 25/

2. Military veterinary services -- A small veterinary unit in the armed forces provides care for military animals of the remount unit. 12/ 31/

E. Veterinary manpower -- The ratio of veterinarians to livestock in Ecuador is very low, 1: 64,000, and the situation is further complicated by the concentration of veterinarians in the major metropolitan areas rather than at the sites of livestock production. Communications, including mechanized transportation, are very poor, and even when disease conditions are reported or assistance sought by livestock owners the probability for prompt and effective veterinary attention is remote.

Four separate faculties, all sub-standard by any criteria in faculty curricula, facilities or equipment, exist in this country, which can scarcely justify from an economic or requirement standpoint even one school. Each university in Ecuador is an autonomous unit. These faculties are located at the University of Guayaquil, Guayaquil, Central University of Ecuador in Quito, Technical University of Manabi, in Portoviejo (1-03S - 80-27W), and the University of Loja, Loja (4-00S - 79-13W). All four schools graduate no more than 20 students per year. 1/ 2/ 12/ 13/ 32/ 34/

F. Veterinary facilities -- Veterinary laboratory facilities, located principally in Quito or Guayaquil, are generally inadequate. Space and equipment are deficient, which interferes with sound laboratory discipline. A few small diagnostic units have been developed in rural areas where extension type services of Servicio

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Cooperativo Interamericano de Agricultura (SCIA) operate. A few commercial biological or pharmaceutical concerns operate small laboratories in Guayaquil and Quito. Very little quality control over products exists, and in some cases preparation of products is undertaken with little regard for protection against contamination or assurance of viability and potency. 1/ 10/ 12/ 13/ 15/ 34/

G. Veterinary supplies and materials -- Veterinary supplies and materials are produced locally to a limited extent, and the balance of requirements is supplied through private biological and pharmaceutical agencies, some of which represent several separate foreign concerns. Currently, an Agency for International Development and the United Nations Food and Agriculture Organization support program is underway to develop a foot-and-mouth disease diagnostic and vaccine production laboratory. 7/ 10/ 12/ 13/

H. Reference data -- Not included in this report.

I. Comments on principal sources

1. Evaluation -- Various United Nations Food and Agriculture Organization technical assistance reports provide substantial information on recent development programs in the fields of veterinary services and sanitary food handling. Local livestock and veterinary periodicals report recent changes in field services and veterinary legislation.

2. List of sources (in order of importance)

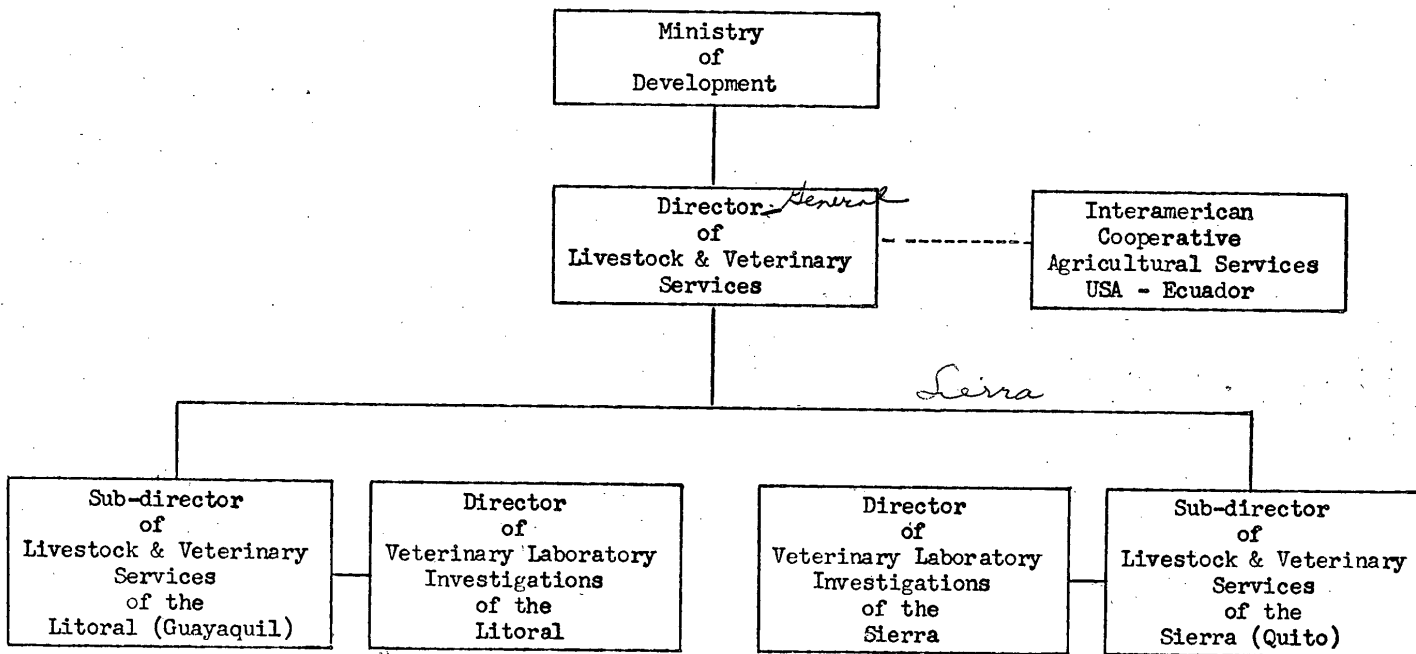
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