

**THE STATUS OF ACCESS TO ANIMAL HEALTH SERVICE IN
NGORONGORO DISTRICT**

STAKEHOLDERS' CONSULTATIONS REPORT



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Summary

The consultation process was commissioned by Ereto and NDC and funded by ERETO and Oxfam GB. The main objective of the consultation was to better understand the animal health service situation, the options for improvement, and the various views of different players in Ngorongoro district

Growing fiscal deficits and greater awareness of the huge economic cost of often-inefficient under funded government activities have renewed interest in transferring the delivery of important animal health services from the public to the private sector in developing countries. This report consultation offers a framework for determining the appropriate roles of the public and private sectors in delivering animal health services, such as veterinary surveillance, disease vector control, vaccination, clinical treatment of sick animals, inspection of livestock products, and veterinary research and extension.

Acknowledgements

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Acronyms/List of abbreviations

NDC	Ngorongoro District Council
NGO's	Non-Governmental Organisations
NCAA	Ngorongoro Conservation Area Authority
NCA	Ngorongoro Conservation Area
FGD	Focused Group Discussion
CBI	Cross – Border Initiative
NSGR/MKUKUTA	National Strategy for Growth and Poverty Reduction/Mkakati wa Kukuza uchumi na kupunguza umasikini
LGA	Local Government Authority
PC	Pastoral Council
AHS	Animal Health Services
LSD	Lump Sick disease
MCF	Malignant Catarrhal Fever
CCPP	Contagious Caprine PleuroPneumonia
CBPP	Contagious Bovine PleuroPneumonia
BCT	Bovine Cerebral Theileriosis
ECF	East Coast Fever

1.0 INTRODUCTION

1.1 NGORONGORO DISTRICT

This is one of the five districts of the Arusha Region of Tanzania. It is bordered to the north by Kenya, to the east by the Monduli District, to the south by the Karatu and to the west by the Mara Region; it covers an area of about 14,036 km²; and it lies between Longitude 35 and 36E and latitude 2 and 4S. The district is divided in three divisions - Loliondo, Sale and Ngorongoro. According to the 2002 Tanzania National Census, the population of the Ngorongoro district was 129,776. Within the district are the famous Ngorongoro Crater and active volcano Oldonyo Lengai. It plays host to parts of the wildebeest migration, as such, much of the district is considered part of the Serengeti – Mara Ecosystem, which is defined by the limits of the annual wildlife migration. The District Headquarters, including the office of the District Commissioner are located in Loliondo village.

The entire southern half of the district is designated as the Ngorongoro Conservation Area (NCA) which is governed by the Ngorongoro Conservation Area Authority (NCAA). The Conservation Area is the only one of its kind in Tanzania with all other of the country's protected areas designated as Game Reserves and National Parks. The NCAA uniquely allows human habitation within the protected area, but places restrictions on land-use in the NCA, including cultivation and livestock grazing. Whilst watering of cattle is permitted, human habitation and livestock grazing is forbidden in the Ngorongoro Crater which is a UNESCO World Heritage Site.

The District is divided into 3 administrative divisions, Ngorongoro, Loliondo and Sale. The Ngorongoro District is further administratively divided into 14 wards:

- ✚ Arash
- ✚ Digodigo
- ✚ Enduleni
- ✚ Kakesio
- ✚ Malambo
- ✚ Nainokanoka
- ✚ Nayobi
- ✚ Olbalbal
- ✚ Oldonyo-Sambu
- ✚ Orgosorok
- ✚ Oloroibi (Ngorongoro)
- ✚ Pinyinyi
- ✚ Sale
- ✚ Soit Sambu

The infrastructure of the district is very poor - road maintenance is nearly non-existent. This renders livestock services like other social services difficult and expensive. Transport within the district requires strong four wheel drive vehicles to reach remote villages especially during the rain season. Pastoralism is dominating, while crop production is very limited especially in Sale division due to wildlife policy (about 60% of the district falls under the prevailing jurisdiction of the autonomous Ngorongoro Conservation Area Authority - NCAA) and unfavorable climatic conditions with low rainfall. About 85% of the district population belongs to the Maasai, a semi-nomadic pastoralist tribe. Despite seemingly large stocks of cattle, the

per capita income of the Maasai is very low. About 12% are Batemi, agriculturists with traditional irrigation systems. Most of them live in the fertile Sonjo valley. Other ethnic groups include the Tatoga and Hadzabe, who are agro-pastoralist and hunter-gatherers respectively. The per capita income is about USD 112 per year, with the main sources of income being pastoralism, trade, tourism and agriculture.

The district has heterogeneous physical and climatic features varying from cool Loliondo and Ngorongoro Conservation Area Authority (NCAA) highland in the North and South, respectively to semi-arid plain in the central West and South respectively. There are two rainy seasons, long rains occurring between December – May and the short rains between July to November. Rainfall varies widely from 1000 mm in the highlands down to 600 mm in the semi-arid areas. Mean annual temperatures are between 13⁰C to 28⁰C and mean maximum temperature fall between 10⁰C to 32⁰ C. Vegetation cover is mainly grassland interrupted by short bushes and scattered trees.

1.1 BACKGROUND INFORMATION: NATIONAL CONTEXT OF ANIMAL HEALTH SERVICES PROVISION

Control of livestock diseases and protection of animal health are essential components of an effective animal breeding and production programme. For more than three decades post independence all these have been the responsibility of the public sector in Tanzania. Through the Ministry of Agriculture and Co-operatives by then the Government used to provide clinical services (i.e. professional services on diagnosis treatment and control of livestock diseases); control of major notifiable and zoonotic diseases; National Research and Training Institutes; and Central Laboratories.

The Government has withdrawn all clinical services and enforced restrictions on its veterinarians and paraprofessionals who should be fully employed in their Government roles. In high potential areas it has identified the activities that can be contracted to private veterinarians, designed straightforward contracts and monitoring systems for this work and promote access to funding and employment through projects e.g. livestock keepers associations and NGOs. Low potential and remote areas receive particular attention through the NGO sector.

Ngorongoro District which is in Arusha region is of no exception, it is supposed to receive animal health services from private sector which still very weak. The district among the most under serviced and lack adequate social and physical infrastructure. It has an area of 14,036 square kilometres and 370,000 heads of cattle, and 600,000 goats and sheep.

The majority of people in Ngorongoro earn their living from livestock keeping, subsistence agricultural production and tourism. Livestock keeping which is the most important economic means of livelihood for pastoralists is declining, and the majority of these people do not have access to facilities of animal husbandry. A number of factors have acted as and still are hindrances to the improvement of livestock production in Ngorongoro district, ranging from diseases, poor nutrition, unreliable water sources and resources, unfavourable climate and poor marketing of livestock products, are among the common problems associated with livestock development. Nevertheless, of these problems livestock disease is the most pronounced constraint in

livestock development. One of the most important killer diseases, for example, is East Coast Fever (ECF). In late 1980's it decimated the population of livestock following the collapse of the free dipping scheme. The semi – intensive dipping scheme of the time also created a susceptible cattle population that died massively when the scheme collapsed.

According to a number of reports (Kinnabo et.al. 2003) some of the conditions in the district are classified into three groups and ranked the following diseases according to their economic importance (e.g. fatality, frequency of occurrence e.t.c): in the following groups:

- Vector borne diseases
- Soil borne diseases
- Contagious diseases

(i) Vector bone diseases:

The prevalence and economic importance of these diseases are dependent on eco-climatic conditions owing to the environmental requirements of their insect vectors. In Ngorongoro the named diseases includes Tick bone diseases, namely East Coast Fever (ECF), Anaplasmosis, Heartwater, Babesiosis and Tsetse fly transmitted Trypanosomiasis.

(ii) Soil – Borne Disease:

Two soil borne infections are particularly reported in the area – viz. Anthrax and Blackquarter (BQ). These diseases are believed to exist, particularly due to the nature of the area – Arid and semi – arid lands, here outbreak occur especially during the dry season when livestock are forced to graze close to the soil (the pathogens causing these two diseases are found in the soil where they survive for many years). Furthermore Anthrax affects both livestock and human beings (Zoonoses).

(iii) Contagious Diseases:

Important contagious diseases named/listed in the area include Foot - and -Mouth Disease (FMD), Contagious Bovine Pleuro-pneumonia (CBPP), Contagious Caprine Pleuro-pneumonia (CCPP), Abortion storms and calf pneumonia. These are diseases transmitted by direct or indirect contact from an infected animal to a susceptible animal. As such, the disease out-break is independent of eco – climatic conditions of the area.

Livestock production is the cornerstone of the Maasai pastoralists' economy and any reduction in livestock productivity will ultimately affect people's livelihoods and conservation in a negative way. The distribution of livestock and wildlife species in the Ngorongoro district varies with the seasons, vegetation, disease risk and the landscape. The diverse ecological zones of the Ngorongoro district, ranging from the Northern highland forest reserve to the short-grass plains, present varying risks of transmission of infectious and tick-borne disease causing pathogens from wildlife species and livestock. For sustainable management of the Ngorongoro district it is imperative that the risk of transmission of tick-borne and infectious disease causing agents be reduced through an improved livestock health management strategy.

1.4 LIVESTOCK SECTOR, POLICY REFORMS AND FRAMEWORK

Since mid 1980's, Tanzanian economy has been undergoing gradual and fundamental transformations towards a market-based economy. The macro-economic policy reforms have made necessary for a redefinition of the roles of the public and private sectors in livestock development. These changes have paved the way for the withdrawal of the Government involvement in direct production, processing and marketing activities, which could be better performed by the private sector.

According to the National Livestock Policy 2006 which is a replacement of the old Agriculture and livestock policy of 1997, the reforms aims at stimulating development in the livestock industry in order to increase rural and national income, improve human nutrition, sustainably exploit the available resources with due concern for the environment and enhancement of self-reliance.

The formulation of this new livestock policy (2006) has taken into consideration of the following;

- **The Tanzania Development Vision 2025 (TDV) of 1999** which aim at achieving a high quality livelihood for its people, attain good governance through the rule of law and develop a strong and competitive economy.
- **National Strategy for Growth and Reduction of Poverty (NSGRP) of 2005** which identifies three major clusters of poverty reduction outcomes
 - Growth and reduction of income poverty
 - Improvement of life and social well being and
 - Good governance and accountability.
- **Millennium Development Goals (MDGs)** which target to halve the proportion of people living on less than a dollar a day and those who suffer from hunger by 2015.
- **The New Partnership for Africa's Development (NEPAD)** aiming at eradicating poverty in Africa and to place African countries both individually and collectively on a path of sustainable growth and development thus halting the marginalisation of Africa in the globalization process. The expected outcomes of NEPAD are:
 - ✚ Economic growth and development and increased employment;
 - ✚ Reduction in poverty and inequality;
 - ✚ Diversification of productive activities;
 - ✚ Enhanced international competitiveness and increased exports;
 - ✚ Increased African integration.
- **Liberalization and Policy Reforms:** Currently, regional integration efforts in the country are focused on liberalization of cross-border trade in tradables including livestock and livestock products between EAC Partner States. The EAC Partner States have also harmonized their agricultural policies. These efforts are partly or entirely in response to the commitments to multilateral trade agreements that countries of the region have entered into. The most important ones include the Cross-Border Initiative (CBI), the Common Markets for Eastern and Southern

Africa (COMESA), Southern Africa Development Community (SADC) and the World Trade Organisation (WTO).

- **Stakeholders Resolutions** of the livestock stakeholders workshops between 2001–2004 that identified constraints and established a road map for the development of the livestock industry;
- **Marketing opportunities** for livestock and livestock products under the globalized environment, technological changes, domestic market consideration and other related policies.
- **Private Sector Involvement and Empowerment** has been undergoing gradual and fundamental transformation since mid-1990s that has increasingly recognized and encouraged the role of private sector as a powerful engine in economic development and service provision.

The livestock policy document recognises that, the livestock industry development is *multi-dimensional* in nature and that attainment of its targets will require much more resources from the public and private sector. It therefore adopts the “outcomes-approach” which counts on the contribution of all actors towards sector growth. The approach stresses the, cross-sector collaboration and inter-sector linkages and synergies.

1.4.1 IMPORTANCE AND PERFORMANCE OF THE LIVESTOCK INDUSTRY

The livestock sector has maintained a steady annual growth rate of over 2.7 percent during the last decade. This is lower than the rate of human population growth of 2.9 percent. According to National Strategy for Growth and Reduction of Poverty (NSGRP) of 2004 the livestock sector is expected to grow at 9% by 2010. However, given the importance of agriculture as the mainstay of rural livelihoods, livestock must grow much faster if rural poverty reduction is to become a reality in Tanzania.

Livestock is an integral part of Tanzania’s economy and cattle dominate the livestock industry. The country has the third largest cattle population in Africa and the largest in Southern Saharan Africa. Livestock also, play an import substitution role in the consumption of livestock products in the country.

The contribution of the livestock industry to both Agricultural and National Gross Domestic Product (GDP) is 13% and 6.1%, respectively. About 40% of the livestock GDP originates from beef production, 30% from dairy products and about 30% from poultry and small stock production. The contribution of the livestock industry to the economy is not limited to its share in the total GDP but the role of the livestock industry includes the following: -

- Livestock supply food products, thus contributing to the national objective of food security;
- Livestock converts vegetable resources into products suitable for human consumption;
- Livestock acts as an inflation free, store value and investment channel;

- As a source of income and employment opportunities mostly in the rural economy.
- In addition, livestock provides hides and skins, manure, draught power; and
- They also fulfil cultural roles, which are valuable to many communities.

1.4.2 CONSTRAINTS TO LIVESTOCK DEVELOPMENT IN TANZANIA

The livestock industry stakeholder meeting that was held in Arusha in 2001 identified seven major constraint areas leading to poor performance of the industry despite its high potential. These are;

🚧 Land, Water and Pastures

The basic cause of the problem of land tenure system, water and pasture resources is the lack of proper arrangement to allocate land and give ownership of grazing areas according to traditional or legal procedures. Other causes are frequent changes of livestock grazing areas into crop cultivation, game reserves and the migration of livestock farmers that limit them to develop the areas.

🚧 Types of livestock and production systems

Low genetic potential of the indigenous livestock coupled with limited supply of improved livestock has led to poor production and productivity of the traditional sector. This has also been exacerbated by the existing production systems practiced by the livestock farmers. However, indigenous livestock are well adapted to marginal areas.

🚧 Livestock diseases

Animal diseases are a constraint to the development of the livestock industry and generally there is a high prevalence of livestock diseases in the country. Diseases such as Contagious Bovine Pleuro-pneumonia (CBPP), East Coast Fever (ECF), Trypanosomosis, Foot and Mouth Disease (FMD), African swine fever (ASF), Rabies and Newcastle Disease presents a big challenge to livestock production.

🚧 Institutional weaknesses

There is an institutional weakness due to lack of conducive working environment including frequent changes mainly associated with poor working environment, inadequate budget, inadequate working facilities, lack of incentives, frequent transfer of the livestock sub sector from one ministry to another and weak supervision.

🚧 Livestock products processing and marketing

There is inadequate infrastructure for the processing and marketing of livestock and livestock products. There are also highly subsidised livestock products from outside the country.

🚧 Livestock farmers' knowledge and skills

Inadequate livestock farmers' knowledge and skills is one of the limiting factors to the development of the industry.

🚧 Investment and credit

Unavailability of credit facilities to large, medium and small-scale livestock entrepreneurs and low capital investment limits the expansion and commercialisation of the industry.

1.4.3 OPPORTUNITIES FOR LIVESTOCK DEVELOPMENT

There are great opportunities to increase the contribution of livestock to the national economy and household food security which when properly exploited will greatly improve livestock development. These include:-

- ✚ A large herd and diverse livestock resources which contribute significantly to the national economy if properly exploited.
- ✚ Land resource base estimated at 94 million hectares out of which 60 million hectares are rangelands suitable for livestock production with proper land laws guiding their use.
- ✚ Diverse and favourable climate and agro-ecological zones, which can support a wide range of livestock species and activities.
- ✚ Readily available domestic market due to increasing population, urbanization and high economic growth that stimulate higher demands for animal products.
- ✚ Geographical location of the country makes it accessible to potential export markets.
- ✚ Availability of initially trained manpower and low cost labour in most fields of livestock production.
- ✚ Existence of a wide range of valuable Indigenous technical knowledge (ITK) related to livestock production.
- ✚ Existence of political and social stability.

1.4.3 GOVERNMENT INITIATIVES

It is important to note that the above opportunities can easily be exploited given the current government initiatives to improve the livestock industry through good governance, development of relevant acts, laws and circulars. These initiatives include:-

- Veterinary Act No. 16 of 2003 and its regulation for provision of AHS in underserved area of 2005,
- Animal Disease Act No. 17 of 2003 and Dairy Industry Act (2004
- The Rural Development Strategy (RDS) of 2001,
- The Agricultural Sector Development Strategy (ASDS) of 2001,
- The Agricultural Sector Development Programme (ASDP),
- Presidential Circular No. 1 of 2002,
- Harmonization of tariff, non-tariff barriers and taxes,
- Private sector Involvement and empowerments
- Local Government Reform Programme

The decentralization by devolution programme in Tanzania is a vast, dynamic and complex programme of **change** and **change management**. It demands a qualitatively different mindset and involves a fundamentally new change in the way Government conducts its business across the whole of Tanzania. The decentralization by devolution policy is an integral part of the reform process going on in the country which affects every aspect of the country's social fabric. All this is taking place during a period of great social, political and economic transformation and changed management in the country and is not only affected by these changes but also by the dynamics of inevitable globalization.

NDC need to strategize and position itself within the reforms and try to build the capacity of its staffs and the community as well as the district council itself. As part of larger public sector reform programmes which includes the devolution of powers to local government; and, as a component of most reforms in an attempt to bring service management closer to the end-user. The aim of both processes is to match service provision more closely to demand and to build a more responsive government from below. Decentralisation with a local government focus; local stakeholder demand to be articulated through district and from there be integrated into the various sector programmes

2.0 OBJECTIVES OF THE CONSULTATION

The main objective of the consultation was to better understand the animal health service situation, the options for improvement, and the various views of different players in Ngorongoro district. To achieve this, the consultation team met and discussed with animal health services (AHS) stakeholders within and outside the district individually, with a view to obtaining information of the status of animal health services provision in the district. The Term of Reference (ToR) are attached (Annex 1). It is hoped that the outcome of this consultation will pave ways of developing a proposal to Ngorongoro district livestock stakeholders to establish a sustainable animal health delivery system

3.0 METHODOLOGY AND APPROACH OF THE CONSULTATIONS

This assignment involved consultations with producers and other actors in the district dealing with AHS provision. The consultation process covered different ecological, economic, and sociological aspects related to the animal health services. The combination of these aspects necessitates the use of a variety of approaches in the collection of primary information from the communities and animal health services providers by the use of focused group discussions (FGD).

The selected villages for each ward are shown below in Table 1. The selected sites represent different land use, ecological and topographical areas. The livestock extension officers and Ereto project field officers from each area were requested to inform and invite key participants to attend the FGD interviews. At each site, seven to twelve livestock keepers participated in the focused group discussion (FGD). The FGD aimed at obtaining existing information on livestock diseases, and status of vet inputs in the area where possible obtain information on the activities of different stakeholders (CAHWS, Drug shops, Extension staffs, PVP) and disease prevention and control, constraints to animal health delivery, overview of opportunities for AHS provision. At all the sites visited, the animal owners were very clear with the issues they thought were important for livestock production. Table 2 presents a list of individuals consulted and general itinerary of the consultation process. More than 250 people were met during the consultation process.

TABLE 1: VILLAGES VISITED

	WARDS	VILLAGES VISITED & FGD HELD
1	Orgosorok	Wasso, Loliondo
2	Digodigo	

3	Oldonyo-Sambu	Oldonyosambu
4	Pinyinyi	
5	Sale	Ngaresero
6	Malambo	Malambo
7	Naiyobi	Naiyobi, Kapenjiro
8	Nainokanoka	Nainokanoka,
9	Olbalbal	Meshili
10	Ngorongoro (Oloirobi)	Makoromba, Oloirobi
11	Enduleni	Enduleni
12	Kakesio	Osinoni
13	Arash	Arash
14	Soit Sambu	Soitsambu,

The Consultation Team undertook fieldworks as shown in Annex 1. The list of the stakeholders involved in the consultation process included (but not limited to) the following; within and outside the district:

- ✚ Livestock keepers- both men and women
- ✚ Community leaders with villages
- ✚ NGO's – local and international
- ✚ NCAA – the veterinary service department and office of the Conservator
- ✚ Pastoral Council (PC)
- ✚ Local government Extension field staff
- ✚ AHS Providers – PVP, pharmaceutical companies, CAHWs and drug stores
- ✚ Ngorongoro District Council – DALDO's office and DED office

As indicated, the Team managed to visit all the targeted areas, actors and meeting the stakeholders planned, except meeting the NCAA Conservator, of which we met an Acting Conservator, and Ngorongoro Pastoral Council management who happened to be away by the time of the visit. The Consultation Team had a chance of discussing with all stakeholders inside and outside Ngorongoro district. The Government officials (Ministry of Livestock Development) were met in Arusha Town, where they gathered attending an annual Veterinary Scientific Conference.

4.0 CONSULTATION'S FINDINGS AND DISCUSSION

4.1 SITUATION OF DISEASES

4.1.1 MAJOR DISEASE PROBLEMS

Animal diseases and veterinary public-health problems were identified as constituting a major constraint to livestock production. The diseases described by consulted stakeholders are those with serious socio-economic consequences, which include production losses, loss of livelihoods, poverty, food insecurity, restriction of marketing opportunities, they are also described as being disincentives to investment

and public-health risks. Most of these diseases conditions are particularly devastating to poor livestock keepers and pastoralist' communities in the district.

The transmission, effects and control of animal diseases are explained to manifest in a variety of ways. For the purpose of presenting producers perspectives, the impacts of animal diseases on the poor, the following four-category classification captures the key disease groups. Some diseases occur in more than one category. The categories are vector borne and endemic diseases, emerging diseases, zoonoses and Disease with Public Health Implication. Another category is the conditions due to impact of drought on diseases occurrence.

4.1.1.1 VECTOR BORNE AND ENDEMIC DISEASES

Vector borne and Endemic diseases presented by stakeholders included Foot and Mouth Disease (FMD), Contagious Bovine PleuroPnemonia (CBPP), Lumpy Skin Disease (LSD) and Contagious Caprine PleuroPnemonia (CCP), all these diseases are threatening the district livestock industries by direct effects. The effects include high levels of morbidity and mortality, control or treatment interventions costs and restrictions to trade in livestock and livestock products. Livestock producers, workers in livestock industries and consumers are all affected.

During the consultation with livestock producers the following vector borne diseases were identified as posing serious constraints to livestock production in Ngorongoro district:

- ✚ East Coast fever,
- ✚ BCT (Ormilo),
- ✚ Anaplasmoses
- ✚ Babesiosis
- ✚ Trypanosomosis (Nagana) and
- ✚ Malignant Catarrhal Fever,

These were listed as priority diseases requiring urgent intervention because of the high mortality rates they cause in livestock. The ranking exercise saw differences in each village visited (Table 1). The annual removal of livestock from the short grass plains during the wet season to the intermediate and highland areas in avoidance of exposure to MCF virus being secreted from 2-4 months old wildebeest calves exposes livestock to high risks of transmission of tick-borne and infectious diseases.

The Consultation Team were surprised to note that the community does associate the avoidance of MCF in the short grass plains with high incidence rates of other infectious diseases, particularly Anthrax, blackquarter and ECF.

Although the disease risks are not evenly distributed in the Ngorongoro district, the frequent migration of livestock in search of good pasture, water, salts, and markets and in avoidance of specific diseases invariably leads to livestock being at risk of exposure to all the wildlife and livestock diseases. The situation is worsened by the concurrent migration of various wildlife species in search of pastures, water, and salts. However, the risk of transmission of some diseases including MCF, trypanosomosis, anthrax and blackquarter is confined to geographically defined areas where risk can be mitigated by avoidance albeit at the expense of availability of good grazing

BOX 1: Multiple impacts of trypanosomosis in livestock systems in Tanzania and Africa as whole (Swallow, 2000).

Direct impacts on livestock productivity

reduced calving rates: 1-12 percent tolerant; 11-20 percent susceptible
increased calf mortality: 0-10 percent tolerant; 10-20 percent susceptible
small ruminants: lambing/kidding rates decreased by 4-28 percent/37 percent
decreased milk production (cow): 10-26 percent tolerant; land-area: 83 percent
decreased animal offtake (herd): 5-31 percent; land-area: 97 percent
drug use (sub-Saharan Africa) US\$35 million

Impacts on livestock risk management

decreased cattle numbers: arid 14 percent; subhumid 27 percent; humid 77 percent
grazing changes

Impacts on agricultural and other products

decreased draught efficiency: 40 percent
increased crop production: +25-45 percent per unit land; +140-143 percent per unit labour
decrease in agricultural production in affected countries from 5-10 percent

Effects on natural resource use

change in migration/settlement patterns; variable effects
limited to moderate changes in biodiversity associated with tsetse control

Impacts on human welfare

loss of income and assets related to impacts above
livestock reservoir of sleeping sickness: eastern, western and southern Africa; limited importance in central Africa.

4.1.1.2 EMERGING NEW DISEASES

According to the focused group discussions, it became obvious that there has been a resurgence of serious infectious livestock diseases and public-health problems

throughout the district. There is in addition the challenge of new diseases and new manifestations of existing diseases; this may be a result of changing epidemiological circumstances. Whilst this is a major challenge for the country, district is particularly vulnerable. The livelihoods and health of poor livestock keeping communities are under severe threat.

Emerging diseases such as stomatitis pneumo-enteritis in goat, abortion syndrome in all species, CNS disease syndrome in shoats, yellow and swelling condition in cattle were named by interviewed community members and may need urgent attention in terms of investigation. All these conditions have impacts on livestock keepers and consumers because of productivity losses, control costs and indirect losses. For poor livestock keepers, the effects of emerging diseases and other livestock-production constraints are intimately linked.

4.1.1.3 ZOONOSES AND DISEASE WITH PUBLIC HEALTH IMPLICATION

Zoonotic diseases such as Brucellosis, Anthrax and Rabies may have impacts mainly on human health, mainly on animal health or on both. The effects of zoonotic infections on human health are greatest on Ngorongoro livestock keepers who live in close proximity to their animals and other profession who handle livestock products. High case of abortion 'storms' were reported in most of the visited area; the Enduleni village was named to be leading in the rates of human brucellosis.

Resurgence of many serious infectious livestock diseases and zoonotic conditions has been clearly demonstrated in the findings of the consultation process; this trend is likely to continue in the future. There is in addition the challenge of new diseases and new manifestations of existing diseases through changing epidemiological circumstances, livestock husbandry and trading patterns. Although this poses a major challenge for the country, Ngorongoro district is particularly vulnerable. The livelihoods and health of poor livestock keepers and pastoral communities in such areas are under severe threat.

Endemic, production-limiting diseases are continually present. They are less dramatic but tend to make livestock raisers vulnerable to external shocks, which keeps them in poverty. Diseases and conditions such as high abortion storms, FMD, CBPP and the like reinforce the vicious circle of poverty, because livestock assets do not grow and products for home consumption or sale are not harvested. Veterinary Public Health (VPH) programmes are often absent in rural areas. Rural dwellers are at high risk for zoonotic diseases because of their close contact with livestock or domestic animals. The rates of brucellosis, rabies and other intestinal parasitic diseases in certain rural populations are the highest of any.

At the same time, the capabilities and resources of Ngorongoro district council alone to meet these animal-disease and VPH challenges are being constantly eroded. This is exacerbating the situation and maintaining poverty by keeping livestock raisers vulnerable to external shocks such as drought

4.1.4 DISEASE AND DROUGHT

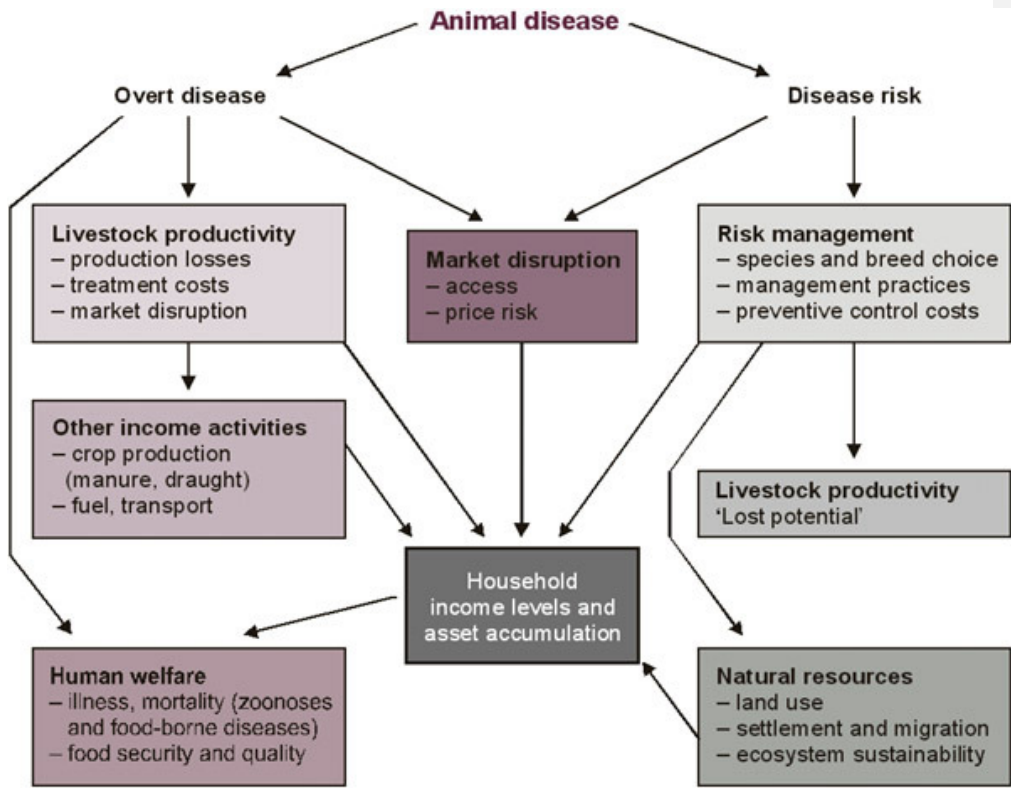
During the interview and groups discussions, drought was named as having a big impact on livestock especially in terms of disease susceptibility. Animals are severely affected by a number of diseases which normally do not have impact on a normal

year. Lack of interventions at the time of extreme shocks is associated with people falling down the poverty trap.

Animal diseases have multiple impacts, which have been highlighted from different perspectives. The impacts of endemic diseases are mainly felt at farm level, while broader economic impacts can occur with epidemic diseases that restrict trade in livestock and livestock products. The occurrence of such diseases impacts heavily on the poor livestock producers by marginalizing them from higher-price livestock markets and restricting their capacity for value-added trade. When considering pro-poor livestock development, it is necessary to highlight the impacts on the poor of epidemic diseases and their control, which include direct effects and potential trade benefits. With regard to the latter, benefits and costs vary according to the different livestock sectors. For poor livestock keepers, who pays and who benefits is a crucial question when it comes to planning and targeting control and eradication efforts.

Figure 2 summarizes the impacts of animal diseases in terms of effects on livestock and other effects within pastoral systems. Disease effects on livestock include direct effects on productivity, disease-control costs and constraints on livestock management including limitations on species and breed choices. Other effects have been divided into three categories: agricultural and other products, natural resources and human-welfare effects.

FIGURE 2: DISEASE IMPACT TO COMMUNITIES



4.2 POLICY ON PRIVATIZATION OF VETERINARY SERVICES

After independence, the livestock sector like other sectors was also affected by a number of policy changes and reforms. There were several changes that took place such as the Arusha declaration, nationalization and formation of large and small scale livestock production farms, economic reforms, privatization and trade liberalization. There were also administrative and policy changes contributed to structural and administrative changes in Livestock sector which affected service delivery. All these affected the poor livestock producer directly and indirectly.

The changes and policy reforms brought about privatization of vet services in 1994 which was followed with Agricultural and Livestock Policy formulation in 1997. In .1998 saw decentralization of extension staff to local government authorities

The then Ministry of Water and Livestock Development (MWLD) developed three Directorates in year 2000 namely, Directorate of Animal Production, Directorate of Veterinary Services and Directorate of Livestock Research and Training. These directorates were formed with the aim of strengthening the livestock sector. However the private sector is also offering the livestock services but is still in premature stage. The government had totally withdrawn from the activities like purchase and distribution of veterinary drugs, milk production, processing and marketing and left them to private sector.

Further more in 2001, the MWLD held a livestock stakeholders meeting which was chaired by the then president of the United Republic of Tanzania Hon William Benjamin Mkapa where the main constrains of the livestock sector were identified, prioritized and strategies to overcome them were developed. The meeting also came out with a new livestock vision for 2025 which states, ***“By year 2025, there should be a participatory livestock sector, productive, commercially run, modern and sustainable livestock farming with improved livestock, providing better employment, enhancing standards of living, supplying raw materials for industries, gender mainstreaming and increasing contribution to national income and protecting the environment”***

The livestock policy (2006) acknowledge that currently there is a wide spread of livestock diseases affecting all parts of Tanzania. The main aim of animal health is to minimize and eradicate the animal diseases and the overall principle is that farm level disease control is the responsibility of the livestock farmers and services such as drugs, vaccines and inputs should be sought from the private sector. The policy objective for this is to reduce and eradicate livestock diseases in order to minimise losses and improve livestock productivity.

It is clear from the policy statement (2006) that private veterinary services delivery, private public partnership will be promoted and the government shall continue to provide animal health services in areas where a private practice has not yet been set-up and in the control of selected diseases. Private sector participation in the manufacture, importation and *distribution of appropriate veterinary inputs will be encouraged and promoted.*

4.3 CURRENT STATUS OF ANIMAL HEALTH SERVICE

4.3.2 ACTORS AND THEIR ACTIVITIES

Several organisations have been and are continuing been involved in development programmes especially provision of AHS in the district. The programmes were related to livestock health services. These services ranged from provision of drugs, vaccination programmes, training and supervision of CAHWs, and other social services e.g. education, credit schemes and conservation activities. Some of the programmes that have targeted livestock health and related services included the following:

1. Ereto–Ngorongoro Pastoralist project

This is a bilateral project under Tanzanian government and Denmark with a multiple community, water, livestock health and conservation initiated in 1998 (ERETO I) under DANIDA covering Ngorongoro and Sale division. Among other objectives, the programme focused on range management, livestock production including training CAHWs, restocking of poor and destitute families (*Ewoloto*) with Ngorongoro and Sale divisions. It also engaged Private Veterinary Practitioners (PVP) for management of animal health services provision.

Ereto II built its work on the achievements of Ereto I. During the first phase Ereto has reached significant results in alleviating poverty among pastoralist communities by improved access to water for livestock and domestic use, improved veterinary service, and revitalisation of traditional systems of restocking and mutual support. Ereto has managed to build capacity at community level to deal with sustainable livestock production and poverty reduction, but this mobilization at community level has not been fully reflected at an institutional level. Ereto II has increased focused on institutions and policies that can contribute to long term sustainability but still with a participatory project approach and a solid field work component to consolidate and use the results of Ereto I. According to Ereto II project document, geographical scope of the project has gradually expanded from NCA to the entire Ngorongoro District involving the District authorities more directly in project activities and replicating relevant experiences from Ereto I. Increased cooperation with the District was expected to lead to better integration of project interventions and lessons learned into the Tanzanian administrative structure. Within the NCA cooperation with PC and with potential emerging CBOs is being given high priority in order to enhance the capacity of these organisations to better represent the inhabitants of NCA in terms of sustainable development. Furthermore cooperation with NCAA has been prioritised as well as on a management level and in concrete field activities.

An improvement of water provision was to increase the basis for livestock production and lead to better resistance to drought crisis. The project document states that the project is going to continue the work to ensure a reliable presence of veterinary services in the area. A limited restocking will give support to poor pastoralists not reached before, and will be important in the mobilisation towards a broader approach to fighting poverty on community level. The women mobilised through Ereto I are being supported in further involvement in the core activities of the project and through support to women's groups. The alarming situation concerning HIV/AIDS is

incorporated in all activities of Ereto II and addressed through a tailor made and cultural appropriate campaign.

According to the project manager interviewed, the linkages between different actors are missing and need to be strengthened. Some of the key challenges in AHS she raised included:

- Ad hoc AHS interventions
- Small proportion of communities being reached - mostly the ewoloto families
- Lack of sustainability of private vet practices
- Can't exist, their short term and non –focused interventions
- CAHWS serving the community by not recognised by policy framework, belongs to different organisation with no clear line of drugs supplies
- Women are a silent force in the sector

2. Ngorongoro District Council (NDC)

The Local Government Authority of Ngorongoro is mandated to oversee all the development activities in the district. Under the current local government reform programme, the district is positioned better in seeing the delivery of social services to the communities as well as the regulation of activities of all stakeholders.

The mission of the NDC is to empower the local communities to effectively and sustainably utilise the available resources to meet their basic needs, reduce poverty, improve their quality of life and protect the environment; the main objective is the improved provision and access to agricultural support services and productivity. The district plans for 2007/8 – 2009/10 which is part of ASDP/DADPs focuses on improved extension services in the district. Some of the outcomes (Outcome I & II are related to AHS) and strategies (Livestock) for the plans are summarised

OUTCOME ONE: Provision of livestock (& Crop) extension services improved

	Strategy	Activities
1	Increase number of farmers reached	Redeployment of existing staffs Recruitment Provide transport facilities to extension staffs (maintain the motorbikes)
3	Motivation to extension staffs	Provide working tools and refresher training Awards good performance

OUTCOME TWO: Provision of animal Health and regulatory services improved

	Strategy	Activities
1	Provision of infrastructure and equipment	To repair dips To form dip committees To repair crushes To build new crushes To build new livestock development centres (LDC) To repair LDCs

		To provide cold chain facilities To provide diagnostic facilities in LDCs
2	To control schedule diseases and zoonoses	To carry out passive disease surveillance To develop emergence disease communication strategy To vaccinate against major diseases To inspect slaughter animals for public consumption To carry active disease surveillance field visits
3	Ensure availability of quality animal health services	Inspect AH facilities Promote establishment of legally acceptable service facilities Develop incentive packages for private service providers Promote public-private partnership service provision To promote and strengthen community – based animal health delivery
4	Reduce impact of disease on livestock during drought related livestock mortalities	Develop drought animal health management strategy To train village disaster committees on drought animal health management To train service providers on drought animal health management

The implementation of this action plan is at its earlier stages, much need to be done. The delays in transfers of resources from central government to local government is one of the sighted challenge another one being lack of timely communication from the central government.

The number of extension staffs for the whole district is said to be 14 only and this number can only serve to ward level. A more comprehensive plan with input from other stakeholders e.g. NCCA is expected to solve the problem of shortage of staffs

3. Oxfam GB,

A relief and humanitarian non governmental organisation that focused on food security, education, credit provision, land rights, early warning system, improving marketing of livestock and control of vector borne diseases (ECF vaccinations provision) among others. The programme started in 2000 in Endulen, Loliondo and Malambo and has been instrumental in training CAHWs.

The organisation is now interested in working with other stakeholders in development of a sustainable animal health provision in the district.

4. Ngorongoro Conservation Area Authority (NCCA)

Founded in 1959 is a multiple community development, livestock and conservation organisation operating in Ngorongoro division. The mission of the NCCA which is a parastatal organization is to strive to maintain the status of NCA as a world

Heritage Site as well as an eighth wonders of the world. It also aims to cooperate with indigenous residents to professionally conserve the natural and historic resources while providing for optimal social services to residents, staffs and visitors. **One of the most important objective of the NCAA is the provision of optimal and legitimate social services to NCA indigenous residents.** The organisation focused in developing animal health infrastructures i.e. LDC, dips, provision of animal health assistants and undertaking extensive vaccination activities for major Trans-boundary animal diseases (TADs) i.e. CBPP. The NCAA used to provided official veterinary services to all residents of NCA, but the coming of Ereto I saw the NCAA withdrawing the service. It is not clear how are they going to work again in the area but they have in collaboration with PC bought veterinary drugs for the communities. The feeling of most of the residents is that NCAA should work with local and provides all services at cost –recovery basis

5. Vetaid,

An international non governmental organisation (NGO) that was providing technical back stopping to Ereto engaged PVP. The consultation team found an extremely successful case in setting up an active network of 19 community animal health workers in the Loliondo and Sale Divisions of Ngorongoro District. The setting of the CAH system was very impressive by the findings also shown some of shortfalls in the system

The were missing links between the trained CAHWs and drugs supply system

Some of the trained CAHWs were not provided with certification and this led to high dropping rates

Lack of entrepreneurship and business skills among the trained CAHWs

Lack of linkages between village leadership structures and existence of CAHWs

6. VETERINARY INVESTIGATION CENTRE (VIC)

A government veterinary disease investigating department/centre that has been working with Ngorongoro district for a number of years. The department focused on routine disease surveillance, following disease outbreaks and coordinating vaccine and vaccination activities related to TADs.

There is a good working relation between the centre and both Ereto and district council. A lot is expected from the centre in the area of newly emerging disease investigation

7. ANICROP

Private drug Supply Company based in Arusha and an outlet in Malambo. The narrative of the managing director is that, a visit organised by Vetaid (T) was as impressive as it was on wet season that prompted him to rent a room in Malambo in preparation for a private veterinary centre. So far is still operating in the area but seasonal fluctuation in drugs demands and high operation costs is limiting him to operate optimally year round. His has a feeling that if facilitated to lower operational and overhead costs he will be willing to provide the service year round in all of the wards. He welcomed more discussion and ideas on how to go about. If this happens it will be the first of its kind in such a remote area of Tanzania

8. ALPHAVET

This was one of the private Veterinary Practitioners engaged with Ereto to provide veterinary services to destitute families in Ngorongoro division. Has now withdrawn from the area and engaged in other activities.

According to the owner/director of the veterinary centre, he had to withdraw due high operational costs and ended support of Ereto project in Ereto II. In Ereto I, the project covered a number of costs and the income from sales of drugs visits and ECF vaccination to ewoloto herd was enough to cover the operational costs and leave a margin of profit. The covered vehicle costs (fuel, tyres and maintenance) and salaries for veterinary assistants in each LDC. Ereto II was not providing that leverage and he had to withdraw.

Most of the qualified animal health providers' especially private veterinarians were not found practising in these vast and remote areas as not returning due high operation costs.

- Low incentive
- ✚ Low capital
- ✚ High operational costs in the district
- ✚ Few or now trained vets from Ngorongoro as a district

Factors ensuring sustainability, need to be looked into and come up with a policy support to be endorsement by all stakeholders Under the specific intervention tools the promotion of private animal health services in Ngorongoro may be as follows (detail to be worked by stakeholders):

- Contracts with private institutions for supporting private animal health providers;
- Support packages for private veterinarians/enterprises in Ngorongoro,
- Support packages for private animal health assistants especially those employed by NDC, etc.

The profitability and therefore the supply of private veterinary services is governed by several factors arising from economies of scale, such as the size of the livestock enterprises in the locality, the nature of potential or actual diseases, and the types of animals raised in the production systems. Thus, in areas where private veterinary work is unprofitable or where other types of market failure occur, economic or social concerns may make some type of public intervention necessary. The transfer of animal health services from the public to the private sector must be done selectively, and government support may be needed to ensure the success of such transfers.

The collaborative relationship of the different stakeholders and partners in Ngorongoro district is very weak and therefore a proposal of establishing an animal health network is forwarded and the interrelation between NDC and its collaborating and supervising institutions should be developed

4.3.2 EXTENSION SERVICES SUPPORT – STAFFS AND METHODOLOGY

- ✚ Extension services
- ✚ Number of staffs
- ✚ Methodology

4.3.3 PERCEPTIONS ON AVAILABILITY AND QUALITY OF SERVICES

There is a general feeling that availability of drugs has increased, but some continuing deficiencies and particularly the cost of drugs still makes them unavailable. Disease control by vaccination levels have increased but there are still large disparities, which require a more targeted approach in the delivery of preventive and curative health services.

Increased incidence of livestock diseases and poor productivity is perceived to be due to:

- Lack of flow of information on livestock diseases from the livestock keepers/village extension staff to reach the higher level authority.
- Insufficient funding/budget allocation to livestock sector in the district
- Lack/insufficient extension staffs within the context of local government understaffed district DALDO's office (14 staffs??) and other departments of district council
- Emergencies of new animal diseases and
- Poor animal health services due to lack of transport and 'cool chain' facilities to extension staffs
- Lack of control of drug importation from neighbouring country - most are of poor quality due to poorly transportation and storage
- Poor drug supply in the areas

Other observations

- ✚ Lack of an integrated approach among actors in the district: NDC, NCAA, NGOs and wildlife research programme
- ✚ GoT Policy framework in addressing issues related to CAHWs has been of a problem and poorly understood since it was not possible to achieve a common goals that of recognition of CAHWs. There is a regulation which is not understood by all stakeholders. The Veterinary Act NO 16 of 2003 has a regulation which came into being in 2005 made under section 44 of the Act and it reads 'The VETERINARY ACT (PROVISION OF ANIMAL HEALTH SERVICES IN UNDERSERVED AREAS REGULATION, 2005'.

The regulation empower the Veterinary Council of Tanzania to allow the use of CAHWs as a stop gap measure when conventional means of animal health services are not with the reach of a livestock farming community. The Regulation is attached (Annex 2) The regulation states the selection criteria for CAHWs, the training and their duties.

Despite the fact that the policy advocate on the provision of animal health to be under the private sector, still there is a problem that at the district level there is no mechanism to stimulate and facilitate economic transformation to the rural areas through promotion of private delivery (loans etc)

4.4 CONSTRAINTS AND CHALLENGES TO AHS PROVISION

During the consultation in selected villages a number of constraints that affect disease diagnosis, effective treatments and disease control were raised. The identified

obstacles to provision of quality veterinary services in the area included the followings

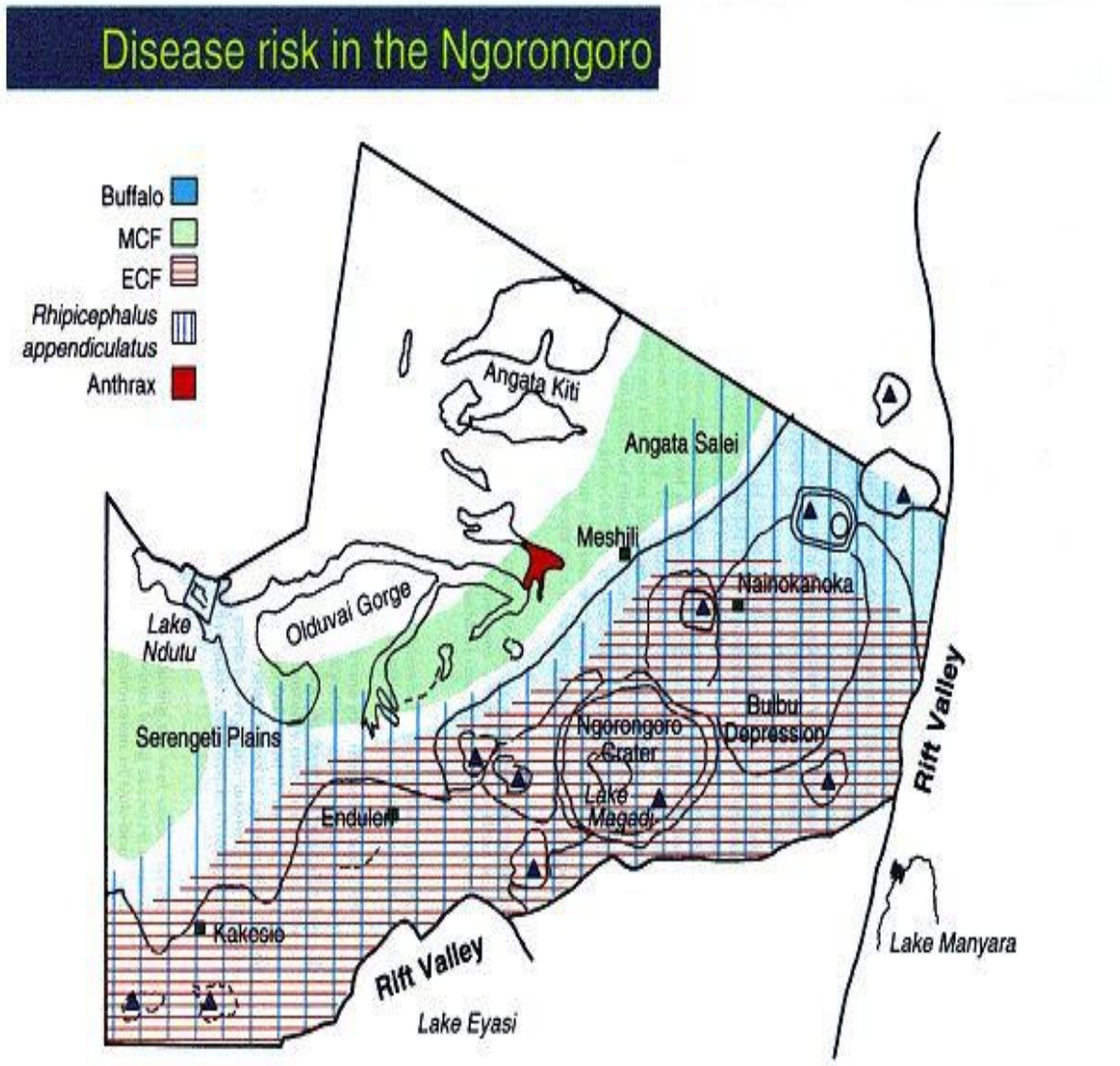
- (I) Include cost of vet drugs
- (II) Poor quality of drugs from neighbouring country due to poor storage and transportation,
- (III) Vastness of the areas thus long distances to dawa shops or to the market
- (iv) Inadequate and unaffordable transport systems within the district,
- (v) Lack of transport facilities to extension staffs
- (vi) Poor level of collaborations and missing institutional linkages and modalities for coordination among stakeholders and actors
- (vii) Shortage of skilled AHS providers in the villages

The constraints are summarized in Table 5. For sustainable animal health services provision in the Ngorongoro district these constraints have to be urgently addressed. Decentralized animal health delivery coupled with public - private partnership should be considered as an effective way of amplification of health delivery at the community level. Other mechanisms of privatized animal health delivery should be explored as sustainable options.

TABLE 5: Constraints to effective control of livestock diseases in the Ngorongoro

FACTORS CONTRIBUTING TO WEAK CONTROL OF LIVESTOCK DISEASES IN NGORONGORO		
	FACTOR	CAUSE
1	Inadequate disease diagnosis	1. Lack of veterinary services (no operational private vet provider 2. Inadequate of simple laboratory services.
2	Inadequate disease surveillance	1. Lack of transport facilities to extension staffs 2. Inadequate laboratory services.
3	Inadequate tick control	1. Lack of knowledge on appropriate tick control methods. 2. High cost of acaricides. 3. Inadequate dips / services or non-functional dips. 4. Inadequate water supplier. 5. High tick populations, wide distribution of ticks.
4	Transmission of diseases from wildlife to cattle: Mobility, environmental care and management <i>Malignant catarrhal fever, trypanosomosis, possibly some tick-borne diseases.</i>	1. Co-existence and co-grazing of wildlife and livestock. 2. Search of pasture, water, saltlicks. 3. Poor livestock marketing. 4. Avoiding MCF.
5	Inadequate prevention and treatment of diseases.	1. High cost of drugs and vaccines. 2. Unavailability of vet drugs and Pastoralist unwilling to buy drugs. 3. High disease challenges.

Map 1: DISEASE RISK



Delivering timely and cost-effective financial services:

In Tanzania, formal financial services are usually lacking in rural areas and this is a major challenge for rural development especially in Ngorongoro. Perceptions of high costs and high risk divert banks from operating in rural areas and particularly from lending to small producers and other entrepreneurs. Financial services help people with key functions, i.e. keeping small surpluses safely as savings, borrowing money to overcome liquidity problems for consumption or investment needs, accessing insurance and risk-sharing schemes, and assisting in money transfers or receiving remittances from relatives or business associates at a distance. Informal services provided by traders and agricultural processors offering input credit are limited and often costly. Many new microfinance institutions only reach small numbers of clients and their main products – normally short-term working capital loans with frequent

repayments - are not well-suited to seasonal or longer-term livestock keeper activities. Government schemes, which in the past often provided subsidized and targeted credit through its extension services, have largely been withdrawn. Village Community Development banks (VICOBA) is a new emerging opportunity which need to be further explored. The experience from other pastoral areas has shown good and impressive returns to communities. They have played a very good and positive role in running of dips and women income generating projects

There is need to encourage the evolution of diverse, self-reliant financial service providers in rural areas. This may involve:

Promotion of self-help groups developing independent savings and credit operations or acting as joint liability groups to facilitate borrowing from banks or microfinance institutions;

Development of risk-sharing schemes that reduce costs for commercial banks or microfinance suppliers to operate in rural areas.

Sustainability

- ✚ Need to catalyse the establishment of CAHWs association (CHAWABA) that help to unite CAHWs and improve of the animal health delivery services
- ✚ Formation of District Livestock Fund (LDF) so that funds available can be used to help in top up training (CAHWs), loaning equipment and in disease outbreaks (vaccination)
- ✚ Acceptance by the community to pay for the services support by the district authority

Conclusion / Recommendations

As a conclusion, the NDC needs to work with other stakeholder to design a more effective veterinary delivery systems that will help to improve the surveillance and notification of animal diseases and zoonoses, to safeguard public health, and to open up new markets for livestock products, thereby improving the livelihoods of the small livestock keepers in the area.

The NDC and NCCA should work together and facilitate the development of private enterprises and partnership approaches to delivering cost-effective animal health care. This applies to endemic diseases in different areas of the district where farm family income is most at risk from disease effects.

Please let us conclude this report with a famous Chinese proverb, very relevant also to Ngorongoro district as well as Tanzania as a whole: *“If you want one year of prosperity, grow grain. If you want 10 years of prosperity, grow trees. If you want 100 years of prosperity, grow people.”* Investing in people development is precisely the major strategy China is following on its steady rise to becoming a global economic powerhouse. We need to do the same with Ngorongoro people who up to now have the national’s biggest, neglected and silent natural resource base. This can be achieved through new multisectoral and interdisciplinary alliances and partnerships among those working on livestock and rural development. This is why a Partnership programme is being proposed

5.0 RECOMMENDATIONS FOR SUSTAINABLE VETERINARY SERVICES

5.1 PROPOSED MODEL FOR SERVICE DELIVERY

5.1.1 SEPARATION OF PUBLIC VERSUS PRIVATE COMPONENTS OF ANIMAL-HEALTH SERVICES

Because of competition for limited financial and other public resources, there are strong pressures for rationalization, devolution, decentralization and privatization of animal-health services in the country. This is inevitable and does not necessarily mean that available veterinary services to livestock farmers or animal-health status are seriously compromised - providing the process is progressive and effectively managed. As a prelude to this planning, district need to review the public and private components of their animal-health services.

It is argued that the public end of the spectrum should focus on two elements, namely:

- ✚ Prevention, control or progressive eradication of major epidemic livestock diseases, which have the potential to affect the national economy through high production losses, losses in export trade or food insecurity at a national level. Individual farmers, particularly poor and marginalized farmers and private animal-health providers are relatively powerless to protect themselves from these diseases, which require a district or even national approach for their control. The district council and NCAA should play a crucial role in this with backstop from the veterinary investigation centres in the country. A plan of action should be developed and shared among all actors in the district
- ✚ Zoonotic diseases and other VPH and food-safety issues that could cause substantial public-health concerns in communities.

At the private end of the spectrum are the more endemic diseases - internal and external parasites and reproductive disorders - for which control is mainly of benefit to individual farmers. The NDC and NCAA should through the joint platform (Stakeholders Forum) coordinate the activities of the engaged private sector and NGOs working with communities.

Between these extremes, there is a continuum of diseases and animal-health concerns with varying public and private attributes. Brucellosis, for example, is a classic zoonotic disease with high infection rates in areas visited. There is a clearly recognized public good in controlling this disease in livestock, the only source of infection for humans. *Brucella species* infections cause abortion and decreased lactation in female cattle or small ruminants, so prevention is clearly a private good for livestock owners. Both individual owners and the public sector could have obligations to pay the costs of controlling this disease; assessment is a matter for the district to decide in consultation with stakeholders.

Strict separation of tasks or services into private or public is not necessarily easy or useful. What is important is that at the district level agreed disease-control tasks are carried out in a sustainable manner. Sustainability often means that individual owners, through cost recovery, and the public sector will pay for disease-control programmes. Stakeholders through a joint district stakeholders' forum should decide on the correct balance between public and private good for their own circumstances and plan allocation of resources and delivery of services accordingly.

Most of the Trans-boundary Animal Diseases (TADs) are notifiable requiring urgent actions. District, National and cooperation is necessary in the control of TADs through an enhanced system of early warning and capacity development for early detection, coordination and harmonization of controlling strategies.

Above all, the district council, NCAA and other actors needs to develop the followings:

- ✚ Development of a comprehensive and joint animal health strategy
 - Livestock disease control strategies and emergency preparedness plans to be prepared and jointly implemented.
 - Different strategies for major diseases of the area and Need specific programmes specific for disease
 - Strengthen extension and research services on animal diseases

- ✚ Strengthen diagnostic and inspectorate services
- ✚ Develop capacity on *early warning and rapid response system* to deal with emerging diseases

New Emerging Diseases

As an issue raised by livestock producers, emerging disease conditions are having a big impact at farm level. A thorough understanding these new diseases or different manifestation of conditions is required. It is proposed that investigation should be carried out to establish the cause, nature, magnitude and impact of the conditions. VIC in collaboration with district stakeholders forum should spearhead this and resource be solicited from joint stakeholders contributions and its own sources.

For sustainable animal health services provision, involvement of all stakeholders from the grass roots is needed i.e. community, village government, private sector and the district staffs. *NDC has a leading role in driving change to support improved animal health and control of zoonoses and sustainable livelihoods.*

5.1.2 FORMATION OF NGORONGORO LIVESTOCK DEVELOPMENT STAKEHOLDERS' FORUM

Due to lack of collaborations and institutional linkages between AHS actors in the district, a need is seen to try and bring all stakeholders working in the area of livestock and AHS provision together. The proposed intervention of forming a stakeholders' forum namely is Ngorongoro Livestock development stakeholders' Forum will try and to bring all stakeholders together for joint planning and implementation of related works in the area.

For effective and efficient running of the forum, a *proposal is hereby forwarded to stakeholders (Research institutions e.g. Carnivores disease research project, Conservation agents, Tour operators, NGOs, Parastatals organizations- SNP, Faith – Based organisations and NCAA to contribute to a joint fund whereby pooling of resources for carrying out vital function, fostering availability and affordability of animal health services provision in the district.*

5.1.3 PUBLIC-PRIVATE (COMMUNITY) PARTNERSHIP/TIES AS MODALITIES FOR FUNDING SUSTAINABLE VET. SERVICES

Due to vastness and poor roads infrastructures coupled with extension nature of pastoralism which is a major means of livelihood in the district, private sectors is reluctant or not attracted to the area at the required speed and time. A partnership of the three (Private sector, District council (including NCAA) and communities is being proposed. The approach will be using government extension staffs with support from Community Based Animal Health System down from the ward to village level; the approach also envisaged an extension services as among the measures for pastoralists' economic recovery. In the beginning NDC enter into an agreement with private sector vet service providers to supported fourteen pilot wards extension officers. This agreement is for NDC/NCAA to act as a *granter* to its staffs to be able to be supplied veterinary inputs of which the staffs will have to pay back. This later will be down scaled to the village level together with improvement in the operation of CAHWs and NGOs providing of technical assistance to the system.

Key areas of interventions:

- ✚ Starting (Initiation) capital supplies in terms of a loan for CAHWs and having a community based dipping system in place and operationalized will need a technical backup from the NGOs. The certification and registration of trained CAHWs is of importance
- ✚ For the said villages, NDC /NCAA will act as a link between livestock keepers and the private sector as regards to the supplier and supervision of their dipping system. However in the course of that, the old culture of free services has been one of the problems experienced by stakeholders.
- ✚ The opening of veterinary drugs centres in each LDCs and in each ward (where extension staffs are based) will act as community nexus to the vet drugs/medicines and other vet suppliers, given the fact that delivery of such services should be entrusted to professionals who are employed by the district council and NCAA.

In that case NDC will be assisting the local communities to increase their food production security base and income and consequently reducing the level of poverty. A transition period from government freely provided services to self – help initiatives was provided by earlier project (ERETO). The change from Government freely provided services to privately operated ones (privatisation) has been explained and promoted in extension messages. A transition period was provided and community have now overcome the “expectation of free services”. That means implementing a cost – recovery programme while at the same time enforcing community based mechanisms that will build a sense of ownership and confidence to establish self – help strategies, with common goals that are aimed at long term sustainability.

CAHWs programme

According to the findings of the consultation process, the CAH system needs improvement in terms of

- ✚ Entrepreneurship skills development

- ✚ Monitoring framework and supervision (including technical back up)
- ✚ Proper certification and incentive package development
- ✚ Retraining plan development

	DISEASE	EN DU LE N	OSIN ONI	OLOIR OBI	NAINOK ANOKA	NAIYO BI, KAPE NJIRO	SOIT SAMBU	OLDON YOSAM BU		OLBAL BAL/ MESHIL I	ARASH	MAL AMB O	
	associated with Gazelles (Enoongoliin)												
29	Yellow disease/swelling disease										10		
30	Ephemeral Fever	13	10		19						7		
31	Plant poisoning					12							
32	Dermatophilosis?					12							
33	Mineral Deficiencies				7								
34	Bloody diarrhoea in calves	13											
35	Wasting disease	14											

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**Model: PRIVATE – PUBLIC PARTNERSHIP:
PRIVATE SECTOR – NDC/NCAA AGREEMENT FORMATION**

