



Report of the Auditor General on the Management and Control of Livestock Diseases

June, 2015



I have the honour to submit my performance audit report on the control and management of livestock diseases in Zambia. The audit was conducted in accordance with the mandate as provided for under Article 121(2) of the Constitution of Zambia, the Public Audit Act No 8 of 1980, the Public Finance Act No 15 of 2004 and the INTOSAI guidance for Supreme Audit Institutions.

The livestock sector is an important contributor to the Agriculture GDP and is currently estimated at 35%. In addition, the Sixth National Development Plan has streamlined agriculture to be the main stay of the economy, with particular emphasis on the livestock sub sector.

It is, therefore, an indisputable reality that infectious livestock diseases cause significant negative economic impacts on livestock production and trade, and in some instances public health. The management and prevention of livestock diseases are of paramount importance for the development of the Zambian economy.

The performance audit whose results are contained in this report was carried out to assess the effectiveness and efficiency of the Ministry of Agriculture and Livestock in carrying out their overall responsibility of managing the livestock sector in Zambia.

I would like to thank the staff at the Ministry of Agriculture and Livestock for their cooperation during the audit process.

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ACRONYMS



CVRI	Central Veterinary Research Institute
PVO	Provincial Veterinary Officer
PACO	Provincial Agricultural Coordinator
DACO	District Agricultural Coordinator
DVO	District Veterinary Officer
DFZs	Disease Free Zones
DNEIs	Diseases of National Economic Importance
LSCs	Livestock Service Centres
SNDP	Sixth National Development Plan
TADs	Trans-boundary Animal Diseases
MAL	Ministry of Agricultural and Livestock
GDP	Gross Domestic Product
FMD	Foot and Mouth Disease
ECF	East Coast Fever
ASF	African Swine fever
CBPP	Contagious Bovine Pleural Pneumonia
TBDs	Tick Borne Diseases
NCD	New castle Disease
BQ	Black Quarter
HS	Haemorrhagic Septicaemia
OIE	Organisation of Animal Health
AU-IBAR	African Union-Inter African Bureau for Animal Resources
SADCAS	Southern Africa Development Community Accreditation Service
ZAWA	Zambia Wildlife Authority

EXECUTIVE SUMMARY



Livestock diseases have a devastating impact on animal productivity, on trade in live animals, meat and other animal products, on human health and consequently, on the overall process of economic development.

Despite the importance of the livestock industry to the development of the Zambian economy, the sector has continued to face many challenges among which is the frequent outbreaks of livestock diseases. This is a major challenge on record which has prevented the sector from realizing its full potential.

The objective of the audit investigation was to assess to what extent livestock diseases control mechanisms were effectively managed and monitored by the Ministry of Agriculture and Livestock..e in deplorable state.

Major Findings

The major weaknesses in the management of livestock diseases included the following:

- a. The Ministry operated without a livestock development policy which meant that the priority areas were at risk of not being addressed.
- b. Use of outdated livestock statistics posed a major challenge in the formulation of strategies for the prevention and control of livestock diseases.
- c. Vaccinations were not usually conducted at scheduled times as in most cases, vaccines were supplied after the scheduled times. Delayed vaccinations increased the incidence and spread of diseases in livestock and in turn, costs of containing livestock diseases increased drastically.
- d. Regional Laboratories were inadequately staffed and they lacked both basic and advanced diagnostic equipment. This meant that most samples were sent to the main laboratory at the Central Veterinary Research Institute (CVRI) in Lusaka. Consequently, this process increased incidence of samples spoiling and also this impacted on the promptness of communication of test results.
- e. The number of dip tanks and other supporting infrastructure were inadequate in each respective agriculture camp to effectively service the total number of animals as most Government dip tanks were in deplorable state

CONCLUSION



It is clear from the findings above that the Ministry of Agriculture and Livestock had not effectively managed and monitored livestock diseases.

Recommendations

It is recommended that the Ministry responsible for managing livestock diseases should implement the following:

- a) Both the livestock policy and strategic plan should be finalized, implemented and disseminated throughout the organisation as a matter of urgency.
- b) A comprehensive livestock census should be undertaken as a matter of urgency.
- c) The department of veterinary services should evaluate the capacity needed to enable the department to provide a sufficient level of inspection and advice to livestock farmers nationally to prevent diseases from occurring and reduce the risk of disease spreading.
- d) Government should ensure that there is improved disease control through service delivery for example recruitment of more livestock extension staff, erection and rehabilitation of extension livestock infrastructure, reduction of travel distance for farmers to access veterinary and extension services.
- e) Regional laboratories should be well equipped to handle varying diagnosis that may be required.



1

INTRODUCTION

The Government in the Sixth National Development Plan (SNDP) has identified the agriculture sector as one of the key focus areas in its efforts to develop the Country.

The Ministry responsible for livestock and agriculture has placed the livestock sector as an important contributor to the Agriculture GDP. The industry is important for the following reasons:

- a) It contributes to food security through production of food stuffs such as meat, milk and eggs among others.
- b) It is a major agricultural input (manure, transport and draught power), particularly in rural areas, and therefore contributes to increased agricultural production.
- c) It generates employment opportunities.
- d) It provides raw materials for the manufacturing sector thus contributing to the economic development.
- e) It is a foreign exchange earner for the country.

The livestock sector has faced challenges which have prevented it from realizing its full potential. One of the major challenges has been the frequent outbreaks of livestock diseases.

While livestock farmers bear the primary responsibility of ensuring that their animals are disease free, the Government, through the Department of Veterinary Services, has classified certain diseases as Diseases of National Economic Importance (DNEI) due to their devastating impacts on livestock and livestock productivity. Therefore, the Government bears the responsibility and costs of eradicating and controlling the spread of DNEI. The most prevalent DNEI in the country are Foot and Mouth disease (FMD), Contagious Bovine Pleuro Pneumonia (CBPP) and African Swine Fever (ASF). It is in this light that Government commits funds to contain livestock diseases. Livestock farmers on the other hand bear the responsibility of containing all other livestock diseases termed as management diseases. These include Newcastle Disease, Black Leg, Anaplasmosis, Anthrax, East Coast Fever (ECF) and other tick borne diseases

It is thus imperative that the management of animal health systems in both the public and private sectors are effective in order to safeguard food security, economic productivity and public health.

This report is therefore intended to highlight major problems facing the sector and to recommend areas where improvements can be made in order to improve the delivery of veterinary services to livestock farmers.



2

MOTIVATION FOR THE AUDIT

The audit was motivated by various factors, some of which are as detailed below:

- a. There have been frequent livestock disease outbreaks that have led to high costs of containing the outbreaks.
- b. Parliamentarians have expressed concerns on the vandalism of the cordon line in Western Province, inadequate livestock extension services and the use of outdated livestock statistics among others.
- c. Government has incurred high costs of compensating farmers, whose animals are slaughtered as a way of containing some livestock diseases – this was evidenced in the 2013 African Swine Fever Outbreak where Government spent an estimated K10,000,000 to contain the disease and compensate the affected livestock farmers.



3

AUDIT DESIGN**a. Audit Objective**

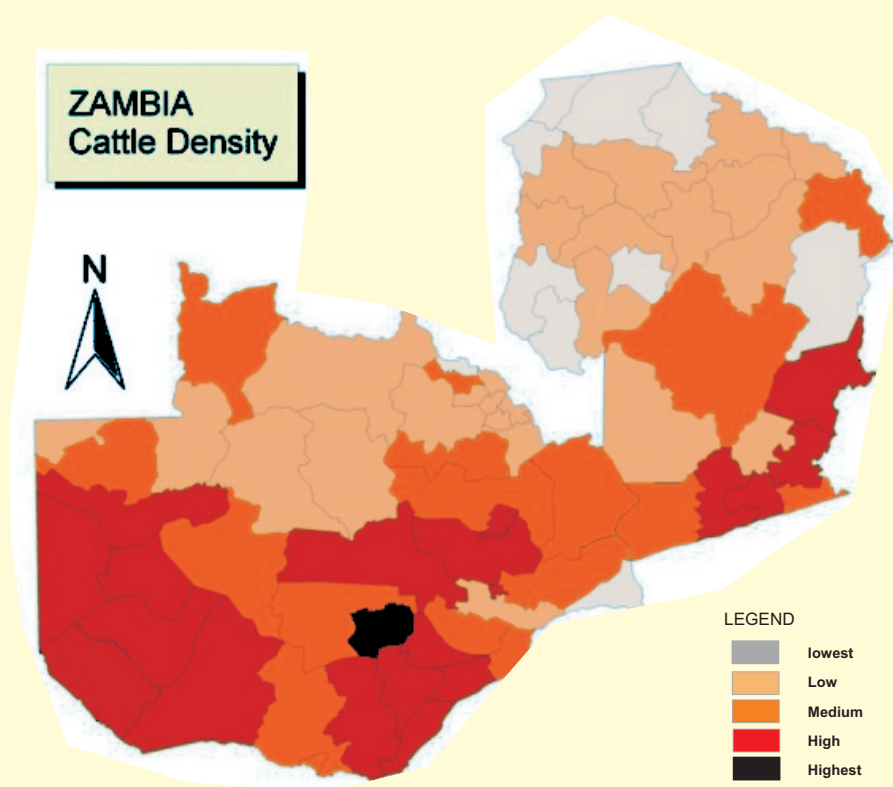
The audit objective was to assess to what extent livestock diseases control mechanisms were effectively managed by the Ministry of Agriculture and Livestock.

b. Audit Scope and Limitations

The audit focused on the Management and Control of Diseases of National Economic Importance (DNEI) and covered the period from January 2011 to December 2013.

The audit sample covered fourteen (14) districts namely; Luangwa, Lusaka, Mazabuka, Namwala, Choma, Livingstone, Kazungula, Sesheke, Shangombo, Mongu, Kaoma, Petauke, Katete and Chipata. The districts were selected because they had the most population of livestock in the country and consequently were most prone to livestock diseases.

The map below shows major livestock areas in the country



As illustrated by the map, the major livestock areas are Southern, Western, Eastern, Central, North-western and Northern Provinces

There was limitation in scope due to resource constraints, poor record keeping and non-availability of farmers to be interviewed.

c) **Audit Questions**

For the purpose of achieving the audit objective, the following questions were asked:

- i. To what extent are the policies and other guidelines adequate in managing an effective and efficient delivery of veterinary services in the country?
- ii. To what extent does the Ministry collect sufficient management information to be able to monitor, manage and control livestock disease?
 - To what extent is passive and active surveillance of livestock diseases carried out?
 - Are surveillance and other reports submitted on time in order to influence decision making?
- iii. To what extent has the Ministry put in place measures to monitor, control and prevent livestock diseases outbreaks?
 - Are routine vaccinations carried out?
 - Are vaccination schedules followed?
 - What infrastructure and other related materials and equipment for disease control are in place?
 - Is the infrastructure and related equipment adequate?
 - Does the ministry have adequate personnel to deliver veterinary services?
- iv. What are the trends in livestock diseases outbreaks during the period under review (2011–2014)?
 - How many outbreaks have been reported in the period under review?
 - What are the main reasons for the livestock diseases outbreak?

d) **Audit Methodology**

The audit was conducted in accordance with the International Standards for Supreme Audit Institutions (ISSAIs).

In gathering audit evidence, the following techniques were used:

i. **Document Review**

Documentary review of strategic plans, policies, budgets and disease control strategies, parliamentary briefings, relevant Acts, annual reports, audit reports, specialist reports such as those prepared by the Organization of Animal Health (OIE), vaccination reports and other relevant correspondence files was carried out. The reasons for documentary review were to gain an understanding of the operations of the Ministry at large and the Department of Veterinary Services specifically.

ii. **Enquiry – Interviews and Questionnaires**

Interviews were conducted with key personnel such as directors at head office, provincial veterinary officers, district veterinary officers and camp officers in order to obtain detailed understanding of the activities that encompass the

control and management of livestock diseases. Interviews were also carried out with key personnel to confirm information obtained from documentary review. Questionnaires were used to gather information. (Appendix 10 and 13).

iii. Observation

Observation of key processes such as livestock vaccinations and preparation of animals at the abattoirs for slaughter was undertaken in Kaoma and Namwala.

iv. Physical Inspections

Physical inspections of veterinary camps, laboratories, kraals, crush pens and check points were carried out at all the selected locations. The purpose of physical inspection was to acquaint the audit team with the activities undertaken at camps, assess the physical condition and activities at laboratories and to assess the condition of infrastructure such as dip tanks and camp houses. Audit evidence was also collected through use of photographs.



4

DESCRIPTION OF THE MINISTRY OF AGRICULTURE AND LIVESTOCK

The Ministry is mandated to carry out portfolio functions which include animal health, livestock development, veterinary and tsetse control among others; and to ensure the implementation of agricultural related legislation.

The mission of the Ministry is to facilitate and support the development of a sustainable, diversified and competitive agricultural sector that assures food and nutrition security, contributes to job creation and maximises the sector's contribution to GDP while the goal statement of the Ministry is to attain an increase in the agricultural growth from 7% to 10% by 2016.

a) Strategic Objectives

- i. To effectively provide appropriate agricultural information in order to increase awareness.
- ii. To effectively and efficiently manage and develop human resources in order to improve individual and organizational performance.
- iii. To effectively manage and provide financial, administrative and logistical support services in order to ensure smooth operations of the Ministry.
- iv. To effectively plan, monitor and evaluate the implementation of Ministerial and sector policies and programmes in order to ensure attainment of set objectives.
- v. To prevent, control and contain diseases, vectors and pests in order to enhance agricultural production and productivity.
- vi. To promote the development of appropriate policies and legal framework that will guide the development of a sustainable, competitive and diversified agriculture sector.
- vii. To effectively provide training in agriculture and related disciplines in order to meet the labour demands of the sector.
- viii. To promote the development of viable and sustainable co-operatives in order to enhance their contribution to job creation and socio- economic development.
- ix. To promote and strengthen efficient and effective management of agricultural production and productivity in order to ensure sustainable household and national food and nutrition security, and increased incomes.
- x. To promote the development and utilisation of appropriate agricultural practices in order to improve and sustain the natural resource base.

- xi. To promote agricultural diversification in order to ensure availability of a wide range of agricultural commodities.

b. Organizational Structure for the Veterinary Department

The Ministry of Agriculture and Livestock is headed by a Minister, who reports to the President for policy directives. The Ministry has two (2) Permanent Secretaries; one is in charge of Administration while the other is in charge of Technical Services under which the Department of Livestock falls.

The Permanent Secretary (Technical Services) is assisted by three (3) Directors, who are administrative heads of the respective departments. The Directors are deputised by one or two (2) deputies. Provinces are headed by Provincial Veterinary Officers (PVO) whilst districts are run by District Veterinary Officers who in turn report to the PVO.

c. Department of Veterinary Services

The Ministry has a Department of Veterinary Services which covers a wide range of disciplines including animal health, veterinary services, research, diagnostics, vector control, training, public health and epidemiology.

The department comprises four main sections with specialised roles and functions as detailed below:

- **Veterinary Services Section**

The main focus of this Section is on public health and disease control, particularly Diseases of National Economic Importance (DNEI) like FMD and CBPP.

- **Tsetse Control and Ecology Section**

The Department is responsible for the control of tsetse flies in the main regions where it is prevalent and preventing its spread to other areas.

- **Veterinary Research and Diagnosis Section**

The Section focuses on conducting research directed towards the nature of diseases, diagnosis and treatment, use of vaccines and drugs and disease carrying pests.

- **Epidemiology - Surveillance and Information Section**

The Section is responsible for economics, information, surveillance and building a comprehensive data bank for the entire department.

The major objectives of the department are to promote livestock health through the development and implementation of technically, economically, and environmentally sustainable disease and vector control strategies that are appropriate to all sectors of the community and to conduct research directed towards the nature of diseases, diagnosis and treatment.



5

PROCESSES IN THE MANAGEMENT AND CONTROL OF LIVESTOCK DISEASES

The detailed processes applied in the management and control of livestock diseases is outlined below:

a) **Zoning**

Zoning is the proclamation of geographic areas in which specific disease control actions are to be carried out. These areas are usually in the form of concentric circles around known or suspected foci of infection, with the most intensive disease control activities in the inner zone. The zones should be at least 10 km radius around the disease foci in areas with intensive livestock production and 50 km in areas where extensive livestock farming is being practiced.

b) **Surveillance**

Surveillance is defined as active, ongoing, formal and systematic process aimed at early detection of disease in a population or early prediction of elevated risk of a population acquiring diseases. The two types of surveillance are passive and active surveillance. In passive surveillance, veterinary officers collect data as a matter of routine while carrying out their daily duties whilst in active surveillance; specific samples are randomly collected and tested for disease presence.

c) **Vaccination**

Vaccinations are carried out at specific times during the year for the different livestock diseases. For instance, vaccinations against FMD are carried out twice a year in April /May and September/October.

During outbreaks vaccinations are carried out after the sero type responsible for the outbreak has been established to prevent further spread of the disease.

d) **Vector Control**

Vector control is made possible by the use of acaricides. In addition, depending on the vector, aerial spraying and target deployment for tsetse fly may be used. The acaricides are applied on cattle by means of dipping, which involves the animals plunging into and swimming through dip tanks. The complete immersion of cattle during dipping ensures adequate exposure of ticks to the administered drug. Other widely used methods include spraying using various types of pumps. Spot treatments can also be carried out on animal body parts such as ears.

e) Identification and Traceability

All livestock in the country are to be clearly identified as specified in the Animal identification and Traceability Act of 2010. Identification includes the province, district and the veterinary camp where the animal is coming from. The brands are cast so that replication is made difficult. In addition, the veterinary camp officer shall maintain stock registers and issue stock cards to farmers listing all livestock kept in their areas. Only animals listed will be issued with stock movement permits. Calf tagging will also be done for the purposes of effective livestock movement control and disease surveillance

f) Movement Control

In order to effectively carry out cattle movement controls, the department requires adequate physical presence. Permanent check points are established along the barriers separating the infected zone from the buffer zone. Mobile check points are also deployed to supplement the permanent ones. Only cattle with valid stock movement permits are allowed to move to the district abattoirs for slaughter.

In Zambia, particularly for ECF, movements from endemic areas to non-endemic areas are only allowed under the following conditions:

- i. Animals to be moved must test negative by immunofluorescent antibody test, and lymph and blood microscopy;
- ii. Cattle can only be allowed to move within seven days after the test. If they overstay beyond seven days, they will be subjected to another test;
- iii. Animals are treated with acaricides before they are moved to ensure that they are tick free;
- iv. Animals are subjected to compulsory quarantine at destination under very close veterinary supervision for a minimum period of 26 days and to be checked for signs of ECF by a veterinary officer before they are allowed to mix with other animals; and
- v. Animals for slaughter must be branded with slaughter brands and must be slaughtered under veterinary supervision within 24 hours of their arrival at destination.

g) Slaughter and Stamp Out

Livestock diseases such as CBPP and African swine fever are usually controlled and eradicated by eliminating the whole cattle herd population where the disease is detected (stamp out). To undertake stamp out, the Government must provide resources to carry out the activity and also to compensate the farmers. Livestock that test positive for CBPP and African swine fever are branded “S”. The diseased livestock is usually slaughtered and burnt within 48 hours of testing positive. All legal formalities are followed, for instance the issuance of farmers with certificates of seizures and disposal. In most cases, the slaughter teams are backed by Zambia Police and other armed wings to ensure the safety of officers and smooth running of the exercise.

h) Community Sensitization

There is need to continuously sensitize farmers, livestock traders, livestock associations, politicians and the community at large on the socio economic importance and impact of livestock diseases. In sensitization meetings, the objectives of Government and the reasons for the objectives are explained. Awareness creation is through meetings, brochures, radio programs, television, print media, and public audio systems. The use of leaflets, pamphlets, community radio stations and drama is also used to disseminate relevant information. The messages are also translated into local languages to ensure that everyone in society is catered for.

i) Emergency Preparedness

The purpose of emergency preparedness is to ensure that all the resources required to mitigate disease outbreaks are mobilized and deployed at the point of need as soon as possible. The Director of Veterinary Services or any other person nominated by him shall be responsible for ensuring that the emergency preparedness plan is always available and functional. Emergency preparedness encompasses the following;

- i. Human resources – All camps in high risk areas should be manned
- ii. Chain of command – Clear reporting structures and roles of staff
- iii. Engagement of stakeholders such as private veterinary, media, butcheries, Zambia Police, ZAWA and local leadership
- iv. Financial resources – The emergency fund should be fully funded at the start of every year
- v. Vaccine reserves – Government stocks a minimum specified level of vaccines for emergency purposes
- vi. Equipment and consumables such as vehicles, solar fridges, sprayers, syringes, needles and other equipment
- vii. Training and simulation exercises



6

ROLES AND RESPONSIBILITIES OF KEY PLAYERS

a) **Organisation of Animal Health, OIE**

The OIE is an intergovernmental organisation, responsible for improving animal health worldwide. The organisation is placed under the authority and control of a world assembly of delegates, consisting of delegates designated by Governments of all member countries. Zambia is a member of the organisation.

Among the terms of reference of the OIE are the following:

- i. Collect, analyse and disseminate veterinary scientific information
- ii. Encourage international solidarity in the control of animal diseases
- iii. Safeguard world trade by publishing health standards for international trade in animals and animal products
- iv. Improve the legal framework and resources of national veterinary services ; and
- v. To provide a better guarantee of food of animal origin and to promote animal welfare through a science based approach

b) **African Union - IBAR**

Zambia is a member of the African Union and as such is expected to submit livestock diseases reports to the African Union Inter African Bureau for Animal Resources through the Department of Veterinary Services. The AU IBAR provides leadership in the development of animal resources for Africa. Its mandate covers all aspects of animal resources including livestock.

c) **SADCAS**

Zambia is also a member of Southern African Development Community Accreditation Service (SADCAS) which provides internationally recognised cost effective regional accreditation services for SADC member states aimed at supporting regional and international trade, enhance the protection of consumers and improve the competitiveness of SADC products and services in both the voluntary and regulatory areas.



7

ASSESSMENT CRITERIA

In conducting the audit, the following documents were reviewed as sources of criteria:

- a) The Animal Health Act No. 27 of 2010;
- b) Disease Control Strategies;
- c) Budgets – 2011 – 2013;
- d) Policy manuals and statements;
- e) OIE guidelines – Terrestrial Animal Health Code, Volume 1; and
- f) Work plans for Veterinary Services Department 2011 - 2013.

Specific provisions of the various guidelines, processes and procedures are as detailed below:

i. Policies and Other Guidelines in Managing Effective and Efficient Delivery of Veterinary Services

The veterinary services should define and document their policy and objectives and should ensure that the policy is understood, implemented and maintained at all levels in the organization¹.

ii. Management Information to be able to Monitor, Manage and Control Livestock Diseases

The functions of the Department are to:

- a) Collect, analyse and present data related to the livestock sector;
- b) Do all such acts and things as are necessary, incidental or conducive to the better carrying out of its functions under this Act or any other law².
- c) Member countries of the OIE shall make available to all other member countries accurate, clear and timely information on the disease situation in their respective countries³.
- d) The Veterinary Services should have at their disposal a reliable and up to date documentation system suited to their activities⁴.
- e) Surveillance should be carried out at a frequency that reflects the biology of the infection and the risks of its introduction. Agricultural censuses are normally to be carried out every ten years. However, countries undergoing rapid agricultural development may need data more frequently than every ten years⁵.

¹Chapter 3.1 (3.12) (8) of the OIE Terrestrial Animal Health code

²Part II Section 4 (1) (a – h) of the Animal Health Act No 27 of 2010

³Article 1.1.2 of the Terrestrial Animal Health Code ,Volume 1

⁴Chapter 3.1 (3.1.2)(11) of the OIE Terrestrial Animal Health Code

⁵FAO Corporate Document Repository part 1 chapter 9 (9.9)

- f) Slaughterhouse inspection of live animals (ante-mortem) and their carcasses (post-mortem) plays a key role in both the surveillance network for animal diseases and zoonoses and ensuring the safety and suitability of meat and by-products for their intended uses. Ante- and post-mortem meat inspection is a core responsibility of the Veterinary Services and they should have primary responsibility for the development of relevant inspection programmes. Wherever practicable, inspection procedures should be risk-based. Management systems should reflect international standards and address the significant hazards to both human and animal health in the livestock being slaughtered⁶.
- g) An important role of the Veterinary Services is to ensure that health certification for international trade complies with animal health and food safety standards. Certification in relation to animal diseases, including zoonoses, and meat hygiene should be the responsibility of the Veterinary Authority. Certification may be provided by other professions (a sanitary certificate) in connection with food processing and hygiene (e.g. pasteurisation of dairy products) and conformance with product quality standards⁷.

iii. Measures put in Place to Monitor, Control and Prevent Livestock Disease Outbreaks

- The Director, in the execution of the functions of the Department shall:
 - * Regulate the delivery of veterinary services;
 - * Regulate the control of animal diseases and vectors;
 - * Establish and maintain a national veterinary laboratory system and other means for analysing animal products and samples for the purpose of this Act; and
 - * Do all such acts and things as are necessary, incidental or conducive for the execution of the functions of the Department⁸
- The CVRI's standards of service include
 - * Provision of accurate and reliable diagnostic results,
 - * Timely provision of diagnostic results,
 - * Customer satisfaction⁹
- The Minister may, for the purposes of disease control and veterinary public health, approve a laboratory for—
 - * The testing of animal feed, vaccine, veterinary products, animal products and animal by-products;
 - * Disease diagnosis;
 - * Food safety and assurance; or
 - * Any other activity considered necessary under this Act¹⁰.

⁶ Article 6.1.3 *ibid*

⁷ Article 6.1.3 (6) of the Terrestrial Animal Health Code, volume 1

⁸ Part II Section 4 (2)(a-f) of the Animal Health Act No 27 of 2010

⁹ Chapter 2 (b) of the CVRI Quality Policy Manual

¹⁰ Part III Section 30 (1) (a-d) *ibid*

- Adequate refrigeration and freezing systems should be available and should be used throughout the Country to provide suitable low temperature protection for laboratory samples in transit or awaiting analysis as well as storage of vaccines¹¹
- The Minister is mandated to carry out the under listed activities, where at a n y place within or outside Zambia there exists, or is suspected to exist, any disease which is likely to affect animals in Zambia,
 - * To prohibit or prevent the introduction of any disease from such place into Zambia or any part of Zambia;
 - * To prohibit or regulate the entry and movement of any animal, animal product, animal by-product, article or conveyance within or out of any parts of Zambia the order;
 - * To regulate the quarantine, isolation, disinfection or treatment of any animal, animal product, animal by product, article or conveyance in any part of Zambia named in the order;
 - * To provide for the establishment of veterinary spot checks and check points on roads and such other areas as maybe necessary to control diseases;
 - * To regulate and provide for the conduct of meat inspection in a slaughter facility for the purpose of controlling animal diseases and residues in meat; or
 - * To regulate the production, distribution and use of veterinary drugs for the purpose of disease control¹².
- The Minister may provide livestock structures in appropriate places for the common use of the owners of livestock, and may charge such fees for the use of the structures as may be prescribed¹³.
- The Minister may provide dipping tanks or spraying races in suitable places for the common use of owners of the livestock, and may charge such fees for the cleansing of livestock in such tanks or spraying races as may be prescribed¹⁴.
- The Animal Health Act authorises the Minister to establish and mount veterinary check points:
 - * The Minister may by statutory instrument, in consultation with the Director, establish zoo sanitary border posts and check points¹⁵.
 - * The department responsible for animal health shall control livestock and livestock products and by products at zoo sanitary border posts and internal check points established under subsection (1) and shall conduct veterinary inspections at such posts and check points¹⁶.

¹¹Chapter 3.2 (3.2.6) (3a) of the OIE Terrestrial Animal Health Code

¹²Part III Section 12 (a-g) of the Animal Health Act No 27 of 2010

¹³Part III Section 15 (1) of the Animal Health Act No 27 of 2010

¹⁴Part V Section 46 (1) ibid

¹⁵Part VII Section 52 (1) of the Animal Health Act No 27 of 2010

¹⁶Part VII Section 52 (2) ibid

- Countries and their Veterinary Authorities should, wherever possible, take the necessary action to ensure that the border posts and quarantine stations in their territory should be provided with an adequate organisation and sufficient equipment for the application of the measures recommended in the Terrestrial Code.

Each border post and quarantine station should be provided with facilities for the feeding and watering of animals¹⁷.

- When justified by the amount of international trade and by the epidemiological situation, border posts and quarantine stations should be provided with a veterinary service comprising personnel, equipment and premises as the case may be.
- Responsible authorities should ensure that adequate resources are made available to implement effectively all disease control activities. The Veterinary service should also demonstrate that their resource component also includes adequate veterinarians¹⁸.

¹⁷Article 5.6.1 Terrestrial Animal Health Code, Volume 1

¹⁸Chapter 3.2 (3.2.4) (1) of the OIE Terrestrial Animal Health Code



8

FINDINGS

a) **Lack of a Strategic Plan and Livestock Development Policy**

A strategic plan defines an organisation's future outlook and sets strategies for achieving the desired objectives and direction of the entity. Resources are also allocated to priority areas as highlighted in the strategic plan. The last strategic plan expired in 2010.

Despite the draft strategic plan having been prepared it had not been approved as of June 2015.

b) **Inadequate Dip Tanks and Resources for Compulsory Dipping**

In response to high incidences of tick borne diseases such as ECF, Government introduced compulsory dipping and vaccination as contained in Statutory Instrument No 24 of 2014. In this instrument, it was directed that livestock owners would be required to vaccinate their animals against diseases such as anthrax, black leg, CBPP, FMD, lumpy skin disease and hemorrhagic septicemia, according to the schedule of vaccinations. The issuance of this instrument is expected to drastically reduce the occurrence of livestock diseases. However, interviews with farmers and key Ministry personnel revealed that despite the issuance of the Statutory Instrument, resources required for the successful implementation of the measures such as dip wash and vaccines were not easily accessible and affordable to most rural farmers. Furthermore, infrastructure to support dipping and vaccination activities such as dip tanks were not available in some camps.

c) **Lack of Records of Livestock Information**

The ministry is required to maintain an up to date data base on livestock and disease prevalence in the Country.

A physical inspection carried out in selected camps revealed that none of the camps had camp registers. As a result, most Veterinary Camp Officers were unable to give livestock details with certainty. In addition, Veterinary Camp Officers were unable to give exact details such as number of farmers in their camps, livestock population and other relevant details. Furthermore, the Ministry was unable to avail records such as camp size dimensions, check point and quarantine facilities procedural manuals, national livestock surveillance strategy and other pertinent information

d) **Non – Submission of Surveillance Reports by Districts**

Surveillance is aimed at identifying the absence or presence of disease and detecting livestock diseases as early as possible. Part of surveillance involves the capture and analysis of data on a regular basis.

Livestock disease reporting is dependent on the receipt of monthly district reports. Monthly reports are used to communicate vital information such as disease outbreaks, disease control and management activities, supervision to camps, number of livestock in the districts, vaccination activities undertaken, staff returns, stock movements, meat inspections, livestock development and production, funding details, laboratory activities, challenges and other relevant data.

A review of documentation, however, showed that only 19.5%, 14.7% and 31.4% of total district reports expected for the period 2011, 2012 and 2013 respectively were submitted. (Appendix 1)

Failure by the districts to submit the required number of reports per year is as a result of failure by camp officers to collect data from all households in their camps due to the vastness of camps.

The failure by the Ministry to maintain an up to date data base on livestock and diseases has a negative impact on the management of livestock diseases. In the absence of reliable information, it is not clear how the Ministry is able to effectively execute its mandate on the management of livestock diseases.

e) Lack of Livestock Census

A comprehensive livestock census is important for planning purposes. Procurement of adequate vaccines, reagents, and syringes and other disease control strategies all depends on the accurate estimation of the livestock population. This can only be achieved through a regular comprehensive census.

The last comprehensive livestock census was conducted in the 1970's. Failure to conduct a livestock census was attributed to lack of adequate funding and low staffing. In the absence of updated livestock statistics, it is difficult for the Ministry to make informed decisions and hampers planning for animal health activities. In addition, the lack of a census for many years posed a major challenge in the formulation of strategies for the prevention and control of livestock diseases.

f) Inadequate Surveillance at Abattoirs

The Act requires the Veterinary Services Department to regulate and provide for the conduct of meat inspection in a slaughter facility for the purpose of controlling animal diseases and residues in meat.

The Veterinary service plays a key role in the surveillance network of animal diseases. From slaughtered animals, veterinarians are able to identify the presence or absence of disease in animals and are able to trace back the animal to its origins. Having done so, it is possible for the identified disease to be contained before it spreads to other livestock. In addition, without veterinary health certifications, international trade in livestock is hampered.

Except for parts of Eastern, Southern and Western Provinces, it was reported that the Veterinary Department lacked presence in most abattoirs in the country. According to personnel, ante and post mortem was only conducted in abattoirs where the department had a strong presence such as in Mongu, Chipata and Choma.

Consequently, the department is unable to collect vital statistics such as animal health data, possible disease prone areas and loses the opportunity of an early warning system. The lack of consistent veterinary presence in abattoirs has affected international trade in livestock. Presently, among the reasons why Zambia is unable to export to Europe is the lack of health certification of livestock by the Veterinary Services.

g) Non Accreditation of Laboratories

The CVRI, falls under the Department of Veterinary Services and is the National Research Centre for animal diseases. It is mandated to carry out diagnosis, research and vaccine production. The main objective of the CVRI is to ensure the provision of accurate and timely diagnostic services, research activities and provide training of personnel. It is, therefore, key that the Department runs an efficient diagnosis and research system. The CVRI Headquarters is situated in Lusaka where it has its main laboratory and it also has six (6) regional diagnostic laboratories in Mongu, Chipata, Mazabuka, Isoka, Zambezi and Ndola and various district laboratories.

According to the quality policy manual, the CVRI is required to carry out its sampling, testing services and reporting procedures in such a way as to meet international requirements. In this vein, the laboratory is expected to be accredited to the Southern African Development Community Accreditation Service (SADCAS). The SADCAS is a regional accreditation body established in the SADC memorandum of understanding on standardisation, quality assurance, accreditation and metrology to service the accreditation needs of SADC member states.

The mission of SADCAS is to provide internationally recognised cost effective regional accreditation services for SADC member states aimed at supporting regional and international trade, enhance the protection of consumers and improve the competitiveness of products and services.

Interviews held with senior management and a review of documents, however, revealed that the research institute was not an accredited laboratory due to its inability to conform to the technical requirements of SADCAS such as skilled personnel, calibration, testing, and certification and inspection standards.

As a direct result of lack of accreditation, Zambia's foreign trade in livestock is negatively impacted. Consequently, results of investigations of livestock diseases are not acceptable in certain countries such as Namibia and Botswana. Furthermore, the lack of accreditation has entailed that the results produced by the laboratory cannot be relied upon and may be subjected to further testing by third parties.

h) Inadequate Diagnostic Capacity in Regional Laboratories

Visits to regional laboratories revealed that they were inadequately staffed and lacked both basic and advanced diagnostic equipment such as test kits, reagents. Consequently, most samples were sent to the main laboratory (CVRI) in Lusaka, thus increasing the risk of samples spoiling. This also hampered the speed at which results were communicated to the regional laboratories. **(Appendix 2)**

i) Failure to Follow Vaccination Schedules

Vaccination schedules were not adhered to in many instances. It was noted that delays in vaccinations were up to three months after the scheduled time **(Appendix 3)**. These delays were as a result of delayed disbursement of funds and procurement of vaccines. Failure to adhere to vaccination schedules has the impact of introducing and spreading livestock diseases as livestock would have worn off the previously injected vaccines.

j) Lack of Field Equipment

A physical inspection of camps and interviews held with camp officers revealed that camp officers lacked basic tools such as cold chain facilities for efficient and safe handling of vaccines, slides, tubes, syringes, thermometers, weighing machines and other equipment for use in sample collection, vaccinations and other activities. Consequently, blood and other samples were not always collected and scheduled activities such as vaccinations were delayed. This in turn hampered animal disease surveillance activities.

k) Non Functional Quarantine Facilities

According to the Act, the Ministry is required to maintain appropriate Quarantine facilities for the purpose of screening for diseases of livestock imported into the country.

The Ministry had five (5) quarantine facilities namely Lusaka, Simonga, Chaninda, Mwami and Lusuntha Quarantines. However, none of the five (5) facilities were functional due to run down infrastructure. Lack of functioning quarantine facilities increases the risk of the entry and spread of livestock diseases from abroad. **(Appendix 4)**

l) Non-Functional Dip Tanks

A review of records revealed that the Ministry had constructed a total of 697 dip tanks across the Country to help in the prevention of the tick borne disease. Out of the 697 constructed dip tanks, 89 were functional whilst the balance of 608 were either dilapidated or inappropriately sited. **(Appendix 5)**

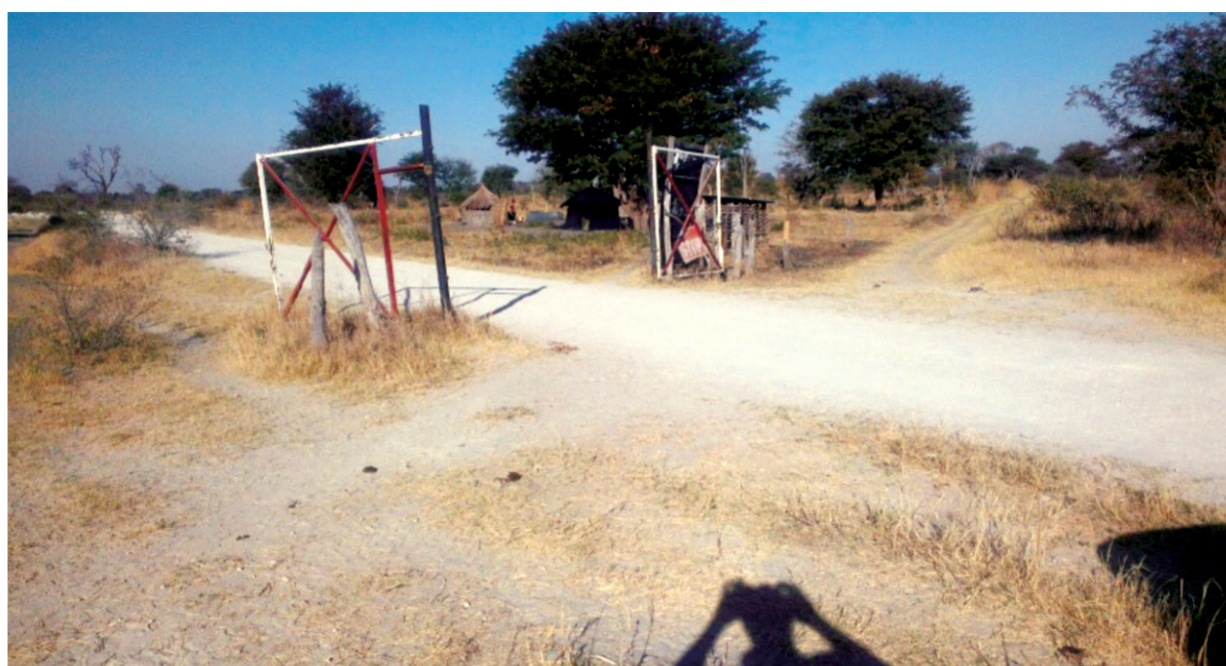
Due to the lack of adequate and functioning dip tanks, most farmers resorted to knapsack spraying. However, spraying was prone to errors such as inaccurate mixing and inadequate wetting thereby rendering the process ineffective.

The non-functional state of most dip tanks was attributed to lack of maintenance and community participation. Consequently, tick borne diseases have continued to spread across the country.

m) Failure to Maintain the Cordon Line

The cordon line which was made out of barbed wire was constructed in Shangombo District in the 1970's and ran 400 km parallel to the Angolan border. It was used as an effective barrier to restrict the cross border movement of animals and was thus an effective measure against the transmission of animal diseases, especially Contagious Plural Bovine Pneumonia, CBPP.

A physical inspection of the line carried out in August 2014 in Shangombo district revealed that the line had been extensively vandalized and was non-operational as shown in the picture below.



Vandalized cordon line

The absence of the line has led to the re-emergence of CBPP in Western province after an absence of 23 years which has since spread to other parts of the Country. During the disease surveillance exercise carried out in 2012, in Mambolomoka, Natukoma and Shangombo central camps in Shangombo District, it was revealed that there was a 47% prevalence rate of CBPP.

n) Inadequate Human Resource

According to the staff establishment register for Department of Veterinary Services, the department is supposed to have a total of 1,434 staff. However, 793 positions were filled whilst the balance of 641 representing 44.8% were vacant. Included in the vacant positions were 443 positions for Veterinary Assistants who were critical for the delivery of veterinary services to the camps. The Department was unable to fill the vacant posts due to the freezing of the positions by PSMD and PMEC.

Consequently, camp officers were expected to man vast operational areas and some checkpoints remained unmanned thus hindering the effective management and control of livestock diseases.

o) High Disease Incidences

A review of records on the disease prevalence in Zambia revealed that most of the diseases were recurrent, and in some cases outbreaks were as much as up to 17 times in a year as was the case with African Swine Fever (ASF) in Eastern province and 3 times in a year for Contagious Plural Bovine Pneumonia (CBPP). (**Appendix 6**). A further examination of records revealed the following:

i. 2013

Out of a total number of 82,946 cases of varying diseases such as Anthrax, CBPP, ASF, Black leg, among others, there were recorded deaths of 43,280 livestock. This represented mortality rate of 52.1%. The highest recorded mortality rate was from Anthrax at 95% whilst the lowest was from FMD with 0% mortality.

ii. 2012

The highest recorded mortality rate was from ASF at 100% whilst the lowest was from FMD at 0% mortality rate.

iii. 2011

Anthrax recorded the most number of deaths at 98% whilst the lowest was from FMD at 0.1%. (**Appendices 7, 8 & 9**)

Poor disease control strategies such as delayed vaccinations and late release of funds for the procurement of vaccines and other consumables and inadequate funding to the livestock subsector have led to recurrent and costly disease outbreaks. As a result, the country continues to battle outbreaks and is unable to grow the sector to its full potential. This has in turn led to trade restrictions on both the local and international markets.



9

CONCLUSIONS

An assessment was made as to whether the Department of Veterinary Services has contained the spread and impact of diseases among livestock. The audit, therefore, concludes as follows:

1. Low reporting frequency from the District to Provincial Offices has prevented the Department from discharging its extension services effectively and efficiently. The lack of updated livestock statistics and other pertinent data has impacted negatively on the departments' planning activities, particularly for livestock vaccinations and vector control. Without a more accurate and comprehensive census of livestock in Zambia, the practical guidance offered by the Department of Veterinary Services is only available to limited numbers.
2. The vast size of camp areas and lack of adequate staff has had adverse implication on the ability of the department to carry out both active and passive surveillance.
3. The prevalence of livestock diseases has contributed to the low growth of the sector and restricted access to local and international markets. Lack of supporting services such as readily available vaccines, prompt diagnosis of diseases, proximity to dispensing veterinarians and easy access to functional dip tanks and adequate manpower to deliver veterinary service have impeded the effective control of livestock diseases.
4. The cordon line was an effective tool in the prevention of livestock disease spread. Livestock disease, particularly CBPP has since spread to previously disease free areas since its vandalism.



10

RECOMMENDATIONS

It is of paramount importance that the Country has an effective Veterinary Service to protect the development and sustainability of its livestock sub sector. In line with the conclusions stated above, the following are the recommendations:

1. The strategic plan should be finalized, disseminated and implemented as a matter of urgency.
2. Government should ensure that there is improved disease control through improved service delivery
3. Submission of timely reports should be enforced by the DVO'S.
4. A comprehensive livestock census should be undertaken as a matter of urgency.
5. The Department of Veterinary Services should evaluate the capacity needed to enable the department to provide a sufficient level of inspection of livestock nationally to prevent diseases from occurring and reduce the risk of disease spreading. Camp sizes should, therefore, be reduced to manageable operational areas for one camp officer in order to optimize service delivery.
6. Provincial laboratories should be well equipped to handle varying diagnosis that may be required. Most of the laboratories need an increase in capacity through provision of new equipment, availability of reagents and capacity building of staff at regular intervals to keep up to date with new developments.
7. The Department should assess the possibility of re-introducing the cordon line to prevent cross border livestock infections.⁸. The Department should ensure that dip tanks are rehabilitated or new ones constructed in intensive livestock farming areas.
8. The Department should ensure that vaccination schedules are adhered to by responsible officers.



GLOSSARY OF TERMS

1. **Zoonotics** - Diseases transmissible to humans, which include Rabies, Tuberculosis, and trypanosomiasis
2. **Surveillance** - Means of identifying the absence or presence of disease and detecting livestock diseases as early as possible.
3. **Diseases of National Economic Importance (DNEIs)** - The classification of certain animal diseases due to their devastating impacts on livestock and livestock productivity, these include, ASF, CBPP and ECF.
4. **Quarantine Facilities** - Facilities used to hold livestock imported into the country or moving from one area to another for disease screening purposes
5. **Knap Sack Spraying** – Spraying against tick borne diseases using an apparatus known as a knap sack.



APPENDICES 2015

Appendix 1

Provincial Reporting Frequency

Year	Province	No of districts	Expected no of reports	Submitted number of reports	Reporting %
2011	Central	10	120	33	27.5
	Copperbelt	10	120	34	28.3
	Eastern	8	96	13	13.5
	Luapula	11	132	42	31.8
	Lusaka	8	96	41	42.7
	Muchinga	6	72	0	0
	Northern	10	120	17	14.2
	Northwestern	9	108	6	5.6
	Southern	14	168	33	19.6
	Western	16	192	20	10.4
			1224	239	19.5%
2012	Central	10	120	40	33.3
	Copperbelt	10	120	40	33.3
	Eastern	8	96	0	0
	Luapula	11	132	24	18.2

	Lusaka	8	96	21	21.9
	Muchinga	6	72	0	0
	Northern	10	120	7	5.8
	Northwestern	9	108	0	0
	Southern	14	168	24	14.3
	Western	16	192	24	12.5
			1224	180	14.7%
2013	Central	10	120	46	38.3
	Copperbelt	10	120	70	58.3
	Eastern	8	96	47	49
	Luapula	11	132	24	18.2
	Lusaka	8	96	19	19.8
	Muchinga	6	72	35	48.6
	Northern	10	120	28	23.3
	Northwestern	9	108	34	31.5
	Southern	14	168	65	38.7
	Western	16	192	17	8.9
			1224	385	31.4%

Source: NALEIC Reports

APPENDIX 2

Inadequate Diagnostic Capacity in Regional Laboratories

Name of laboratory	Diagnostic capacity	Number of staff	Number of vacant positions	Type of equipment
CVRI	FMD,CBPP,ASF,ECF,Rift valley fever,Tick borne diseases etc	29 professional staff,24 technicians and 32 support staff		Basic and advanced equipment
Mongu regional diagnostic laboratory	CBPP,Tick borne disease.	1 professional staff and 2 technicians	3	Have basic equipment
Chipata regional diagnostic laboratory	Tick borne disease	1 professional staff and 3 technicians	3	Have basic equipment
Ndola regional diagnostic laboratory	Tick borne disease	0 professional staff and 2 technicians	4	Basic equipment
Mazabuka/Choma regional diagnostic laboratory	Tick borne disease,rabiesbrucellosis,Tb	1 professional staff,3 technicians	3	Basic equipment

Isoka regional diagnostic laboratory	Tick borne diseases	0 professional staff and 1 technicians	3	Basic equipment
Zambezi regional diagnostic laboratory	CBPP,Tick borne disease.	0 professional staff and 1 technicians	3	Basic equipment
Kabwe district laboratory	Tick borne disaeases	3 technicians	0	Basic equipment

APPENDIX 3

Vaccination Schedules

	ROUND 1		ROUND 2	
	Target start date	Actual start date	Target start date	Actual start date
FMD				
2011	April	June	September	November
2012	April	July	September	December
2013	April	July	September	November
2014	April	May	September	October
ECF				
2011	April/May	May	September/October	October
2012	April/May	May	September/October	November
2013	April/May	May	September/October	November
CBPP				
2011	August	November		
2012	August	September		
2013	August	September		

APPENDIX 4

Quarantine Facilities

Name	Location	Status
Lusaka quarantine	Silver rest	Dilapidated and not functioning. No infrastructure to hold animals
Simonga quarantine	Livingstone	Completely dilapidated. No supporting structures
Chaninda Quarantine	Chadiza	Animal holding pens
Mwami Quarantine	Mwami border post	No animal holding facility available
Lusuntha	Lundazi	Non functional and dilapidated

APPENDIX 5

	NAME OF DIPTANK	LOCATION	EXISTING STATUS	CATTLE POPULATION IN AREA	District	Province
1	Twashuka dip-tank	Kanona Vet Camp	Non functional	589	Serenje	Central
2	Kasamba diptank	Chibale Vet camp	Non functional	392	Serenje	Central
3	Njelele dip-tank	Chalilo vet camp	Non functional	237	Serenje	Central
4	Mwimbula diptank	Chalilo vet camp	Non functional	187	Serenje	Central
5	Luamabwe	Chibombo East Camp	Dilapidated	750	chibombo	Central
6	Chankumba	Chibombo East Camp	Non functional	1000	chibombo	Central
7	Mukotongwa	Chibombo West Camp	Dilapidated	1000	chibombo	Central
8	Chikobo	Chibombo West Camp	Dilapidated	700	chibombo	Central
9	Shimukuni	Chibombo West Camp	Non functional	1500	chibombo	Central
10	Mwakapandula	Chibombo West Camp	Non functional	1200	chibombo	Central
11	Kapopo	Chikumbi Vet Camp	Dilapidated	600	chibombo	Central
12	Katuba	Chikumbi Vet Camp	Dilapidated	500	chibombo	Central
13	Momboshi	Chisamba Vet Camp	Non functional	1500	chibombo	Central
14	Malishashi	Chunga Vet Camp	Dilapidated	650	chibombo	Central

15	Milambo	Chunga Vet Camp	Non functional	400	chibombo	Central
16	Chilukutu	Chipembi Vet camp	Dilapidated	2000	chibombo	Central
17	Katete	Chipembi Vet camp	Dilapidated	500	chibombo	Central
18	Muntemba	Keembe Central Camp	Dilapidated	2000	chibombo	Central
19	Keembe Institute	Keembe Central Camp	Non functional	1000	chibombo	Central
20	Keembe Ranch	Keembe Ranch Camp	Non functional	1500	chibombo	Central
21	Muchenje	Chikumbi Vet Camp	Dilapidated	500	chibombo	Central
22	Fisher	Chisamba Vet Camp	Dilapidated	500	chibombo	Central
23	Namayani	Mboshya vet camp	Dilapidated	1500	chibombo	Central
24	Kanakantapa	Chipembi Vet camp	Dilapidated	2500	chibombo	Central
25	Chiyaba Manzi	Chiyuni Vet Camp	Dilapidated	2500	chibombo	Central
26	Munyama	Munyama Vet Camp	Non functional	1000	Kabwe	Central
27	Mpima	Mpima Vet Camp	Fair	1934	Kabwe	Central
28	Kafulamase	Wayu Vet Camp	Non functional	987	Kabwe	Central
29	Nalubanda	Nalubanda central	Dilapidated	4,000	Mumbwa	Central
30	Nakajoli	Nakajoli/Lutale	Dilapidated	1,266	Mumbwa	Central

31	Kabesha	Mumbwa Central	Dilapidated	1,500	Mumbwa	Central
32	Nangoma	Nangoma Central	Dilapidated	600	Mumbwa	Central
33	Shibuyunji Central	Shibuyunji	Dilapidated	4,221	Mumbwa	Central
34	Lutheran	Shibuyunji	Dilapidated	744	Mumbwa	Central
35	Shababwa	Shibuyunji	Dilapidated	605	Mumbwa	Central
36	Moono Central	Moono	Non functional	829	Mumbwa	Central
37	Kabulwebulwe	Nalusanga	Under construction	932	Mumbwa	Central
38	Mamvule	Kapyanga	Dilapidated	820	Mumbwa	Central
39	Malindi	Myooye	Non functional	758	Mumbwa	Central
40	Shakumbila	Myooye	Dilapidated	919	Mumbwa	Central
41	Chisalu	Myooye	Dilapidated	3,490	Mumbwa	Central
42	Muchabi Central	muchabi	Dilapidated	867	Mumbwa	Central
43	Kabile Central	Kabile	Dilapidated	1,200	Mumbwa	Central
44	Kaindu	Kaindu	New construction		Mumbwa	Central
45	Mpusu	Kaindu	New construction		Mumbwa	Central
46	Chilumba	Chilumba vet camp	Non functional	1500	Kapiri	Central

47	Mondake	Chibwe	Non functional	600	Kapiri	Central
48	Kampumba	likumbi	Non functional	900	Kapiri	Central
49	Kakwelesa	Chibwe	Non functional	700	Kapiri	Central
50	Munsakamba	Mkushi Central vet camp	Dilapidated	250	Mkushi	Central
51	Irumu	Irumu vet camp	Dilapidated	812	Mkushi	Central
52	Chitima	Musofu vet camp	Dilapidated	502	Mkushi	Central
53	Masense	Masansa vet camp	Dilapidated	400	Mkushi	Central
54	Nambo	Chalata	Dilapidated	1000	Mkushi	Central
55	Namakube	Namakube/Ufwenuka	Dilapidated	2,300	Monze	Southern
56	Chisuwo	Chisuwo Ufwenuka	Dilapidated	2,500	Monze	Southern
57	Mainza	Mainza vilage/ Ufwenuka	Dilapidated	2,100	Monze	Southern
58	Chona	chona/ Sikabenga	Dilapidated	2,900	Monze	Southern
59	Chona	Sikabenga	New construction	2,900	Monze	Southern
60	Nampeyo	Nampeyo/Sikabenga	Dilapidated	3,000	Monze	Southern
61	Nabukuyu	Nabukuyu/Sikabenga	Dilapidated	2,370	Monze	Southern
62	Malundu	Malundu/Nakansangwe	Dilapidated	3,150	Monze	Southern

63	Malundu	Nakasangwe	New construction	3,150	Monze	Southern
64	Hufwa West	Hufwa	Dilapidated	2,650	Monze	Southern
65	Hufwa West	Hufwa	New construction	2,650	Monze	Southern
66	Choobana	Choobana/Hufwa	Dilapidated	2,450	Monze	Southern
67	Choobana	Choobana/Hufwa	New construction	2,450	Monze	Southern
68	Mwaala	Mwaala/Hatontola	Dilapidated	3,400	Monze	Southern
69	Nkandela	Bombo	Dilapidated	2,500	Monze	Southern
70	Namilongwe	Namilongwe	Dilapidated	1,700	Monze	Southern
71	Nakasangwe	Nakasangwe	Dilapidated	1,850	Monze	Southern
72	Nakasangwe	Nakasangwe	New construction	1,850	Monze	Southern
73	Makonka	Hamangaba	Dilapidated	3,500	Monze	Southern
74	Makonka	Hamangaba	New construction	3,500	Monze	Southern
75	Chungu	Nteme	New construction	3,500	Monze	Southern
76	Bweengwa	Bweengwa	New construction	11,000	Monze	Southern
77	Kayuni	Kayuni	Dilapidated	1950	Monze	Southern
78	KAYUNI	Kayuni	New construction	1950	Monze	Southern

79	Chaaya	chaaya/Chaaya	Non functional	1253	Mazabuka	Southern
80	Malala	Mulando	Non functional	1400	Mazabuka	Southern
81	Hanyola	Mulando	Non functional	1344	Mazabuka	Southern
82	Upper Kaleya	Nadezwe	Non functional	800	Mazabuka	Southern
83	Katulo	Nadezwe	Non functional	750	Mazabuka	Southern
84	Malabo	Nadezwe	Non functional	814	Mazabuka	Southern
85	Kanyandavu	Nameembo	Non functional	2150	Mazabuka	Southern
86	Mukwela	Nameembo	Non functional	1138	Mazabuka	Southern
87	Muyooma	Nansenga	Non functional	2000	Mazabuka	Southern
88	Hamatuli	Nansenga	Non functional	1100	Mazabuka	Southern
89	Chilileka	Nansenga	Non functional	900	Mazabuka	Southern
90	Kasengo	Nansenga	Non functional	1929	Mazabuka	Southern
91	Naluama	Naluama	Non functional	1000	Mazabuka	Southern
92	Hamutamba	Naluama	Non functional	1000	Mazabuka	Southern
93	Mugoto	Naluama	Non functional	1077	Mazabuka	Southern
94	Neganega	Neganega	Non functional	1002	Mazabuka	Southern

95	Manyonyo	Neganga	Non functional	1000	Mazabuka	Southern
96	Kachembele	Neganga	Non functional	1000	Mazabuka	Southern
97	Magobbo	Lubombo	Non functional	1607	Mazabuka	Southern
98	Lwiindi	Kalambabakali	Non functional	7000	Mazabuka	Southern
99	Nakaluwe	Kalambabakali	Non functional	5250	Mazabuka	Southern
100	Chibbala	Kalambabakali	Non functional	3210	Mazabuka	Southern
101	Chibbala	Kalambabakali	New construction	3211	Mazabuka	Southern
102	Chalimbana	Chalimbana	Non functional	2896	Mazabuka	Southern
103	Naleza	Chalimbana	Non functional	2500	Mazabuka	Southern
104	Mukwima	Chalimbana	Non functional	1500	Mazabuka	Southern
105	Ngwezi B	Ngwezi	Non functional		Mazabuka	Southern
106	Ngwezi ext. 1	Ngwezi	Non functional	560	Mazabuka	Southern
107	Namuchenje	Ngwezi	Non functional	500	Mazabuka	Southern
108	Chitongo	Ngwezi	Non functional	500	Mazabuka	Southern
109	Dumba	Ngwezi	Non functional		Mazabuka	Southern
110	Chimbumbu	Ngwezi	Non functional		Mazabuka	Southern

111	Kataba	Ngwezi	Non functional	500	Mazabuka	Southern
112	Chivuna	Hanjaliika	Non functional	1821	Mazabuka	Southern
113	Hanjaliika	Hanjaliika	Non functional	1756	Mazabuka	Southern
114	Mainza	Hanjaliika	Non functional	700	Mazabuka	Southern
115	Konkola	Konkola	Non functional	444	Mazabuka	Southern
116	Namalla	Konkola	Non functional	2290	Mazabuka	Southern
117	Chijianwa	Konkola	Non functional	3215	Mazabuka	Southern
118	Chibuyu	Konkola	Non functional	2718	Mazabuka	Southern
119	Itumbi	Itumbi	Non functional		Itezhi-Tezhi	Southern
120	Iyanda	Iyanda	Non functional		Itezhi-Tezhi	Southern
121	Nakabangwe	Nakabangwe	Non functional		Itezhi-Tezhi	Southern
122	Mbila	Mbila	Non functional		Itezhi-Tezhi	Southern
123	Banamwaze	Banamwaze	Non functional		Itezhi-Tezhi	Southern
124	Makunku	Makunku	Non functional		Itezhi-Tezhi	Southern
125	Lubanda	Lubanda	Non functional		Itezhi-Tezhi	Southern
126	Basanga	Basanga	Non functional		Itezhi-Tezhi	Southern

127	Luabwe	Luabwe	Non functional			Itezhi-Tezhi	Southern
128	Chindi	Chindi	Partially functional	2167		Kalomo	Southern
129	Chindi	Chindi	New construction	2167		Kalomo	Southern
130	Munachande	Chifusa	Non functional	1650		Kalomo	Southern
131	Naluja	Chifusa	Non functional	1700		Kalomo	Southern
132	Dongo	Chifusa	Non functional	1900		Kalomo	Southern
133	Sichibeya	Chifusa	Non functional	1600		Kalomo	Southern
134	Chalaluka	Dimbwe	Non functional	1400		Kalomo	Southern
135	Libbhole	Dimbwe	Non functional	1600		Kalomo	Southern
136	Munachaka	Dimbwe	Non functional	1300		Kalomo	Southern
137	Dambo	Dimbwe	Non functional	1500		Kalomo	Southern
138	Chuchu	Dimbwe	Non functional	1700		Kalomo	Southern
139	Hostem	Dimbwe	Non functional	1100		Kalomo	Southern
140	Lubombo	Kalomo central	Non functional	1669		Kalomo	Southern
141	Lubombo	Kalomo central	New construction	1669		Kalomo	Southern
142	Lubombo	Kalomo central	New construction	1666		Kalomo	Southern

143	Bbello	Kalomo central	Non functional	2336	Kalomo	Southern
144	Bbello	Kalomo central	New construction	2336	Kalomo	Southern
145	Bbello	Kalomo central	New construction	2333	Kalomo	Southern
146	Munakanyemba	Kanchele	Non functional	1500	Kalomo	Southern
147	Dabali	Kanchele	Non functional	1500	Kalomo	Southern
148	Mbole	Kanchele	Non functional	1700	Kalomo	Southern
149	Mulamfu	Kabanga	Non functional	2700	Kalomo	Southern
150	Misika	Kabanga	Partially functional	2900	Kalomo	Southern
151	Kabanga	Kabanga	Partially functional	2500	Kalomo	Southern
152	Chuubo	Lungunya	Partially functional	2600	Kalomo	Southern
153	Nanyemu	Lungunya	Non functional	2800	Kalomo	Southern
154	Mufumbila	Lungunya	Partially functional	2400	Kalomo	Southern
155	Hantete	Lungunya	Partially functional	2600	Kalomo	Southern
156	Dafan	Malende	Non functional	2250	Kalomo	Southern
157	Dokulya	Malende	Non functional	1500	Kalomo	Southern
158	Chikoli B	Malende	Non functional	1600	Kalomo	Southern

159	Moonde	Moonde	Non functional	2000	Kalomo	Southern
160	Moonde	Moonde	New construction	2000	Kalomo	Southern
161	Chifuwe	Mukwela	Non functional	2350	Kalomo	Southern
162	Chifuwe	Mukwela	New construction	2350	Kalomo	Southern
163	Sikweya	Mukwela	Non functional	3100	Kalomo	Southern
164	Munyeke	Munyeke	Non functional	3100	Kalomo	Southern
165	Munyeke	Munyeke	New construction	3100	Kalomo	Southern
166	Munyeke	Munyeke	New construction	3100	Kalomo	Southern
167	RR	No 3	Non functional	3100	Kalomo	Southern
168	Chitumbi	No 3	Non functional	1767	Kalomo	Southern
169	Chitumbi	No 3	New construction	1767	Kalomo	Southern
170	Chitumbi	No 3	New construction	1766	Kalomo	Southern
171	Nameto	Siachitema	Non functional	1000	Kalomo	Southern
172	Siachitema	Siachitema	Non functional	900	Kalomo	Southern
173	Sikwazwa	Siachitema	Non functional	1100	Kalomo	Southern
174	Sibulyobulyo	Siachitema	Non functional	800	Kalomo	Southern

175	Siampayuma	Siachitema	Non functional	1200	Kalomo	Southern
176	Munansangu	Siachitema	Non functional	1300	Kalomo	Southern
177	Katundulu	Siachitema	Non functional	700	Kalomo	Southern
178	Simwanda	Siachitema	Non functional	900	Kalomo	Southern
179	Munyenye	Siachitema	Non functional	1100	Kalomo	Southern
180	Katete	Siachitema	Non functional	700	Kalomo	Southern
181	Tara	Siachitema	Non functional	1300	Kalomo	Southern
182	Mubanga	Siachitema	Non functional	1000	Kalomo	Southern
183	Siamafumba	Siamafumba	Non functional	1000	Kalomo	Southern
184	Njabalombe	Siamafumba	Non functional	1000	Kalomo	Southern
185	Moono	Siamafumba	Non functional	1000	Kalomo	Southern
186	Muchindu	Siamafumba	Non functional	900	Kalomo	Southern
187	Siambelele	Siamafumba	Non functional	1100	Kalomo	Southern
188	Siamaziba	Sipatunyana	Non functional	2225	Kalomo	Southern
189	Siamaziba	Sipatunyana	New construction	2225	Kalomo	Southern
190	Mweemba	Sipatunyana	Non functional	2000	Kalomo	Southern

191	Mweemba	Sipatunyana	New construction	2000	Kalomo	Southern
192	Muziya	Zimba	Non functional	2250	Kalomo	Southern
193	Muziya	Zimba	New construction	2250	Kalomo	Southern
194	Mukwalantila	Zimba	Non functional	2100	Kalomo	Southern
195	Mukwalantila	Zimba	New construction	2100	Kalomo	Southern
196	Namadula	Zimba	Non functional	2350	Kalomo	Southern
197	Namadula	Zimba	New construction	2350	Kalomo	Southern
198	Munyanganga	Zimba	Non functional	2250	Kalomo	Southern
199	Munyanganga	Zimba	New construction	2250	Kalomo	Southern
200	Namulonga	Dimbwe	Non functional	2250	Kalomo	Southern
201	Namulonga	Dimbwe	New construction	2250	Kalomo	Southern
202	Tembisa	Dimbwe	Non functional	2000	Kalomo	Southern
203	Tembisa	Dimbwe	New construction	2000	Kalomo	Southern
204		Central	New construction	805	Siavonga	Southern
205		Chikanzaya	New construction	616	Central	Southern
206		Chikanzaya	New construction	616	Chikanzaya	Southern

207			Machamvwa	New construction	1131	Chikanzaya	Southern
208			Machamvwa	New construction	1132	Machamvwa	Southern
209			Sianyolo	New construction	2128	Machamvwa	Southern
210			Sianyolo	New construction	2128	Sianyolo	Southern
211			Sianyolo	New construction	2128	Sianyolo	Southern
212			Chaanga	New construction	2155	Sianyolo	Southern
213			Chaanga	New construction	2156	Chaanga	Southern
214			Lusitu	New construction	2118	Chaanga	Southern
215			Lusitu	New construction	2118	Lusitu	Southern
216			Lusitu	New construction	2115	Lusitu	Southern
217			Simaamba	New construction	1955	Lusitu	Southern
218			Simaamba	New construction	1954	Simaamba	Southern
219	Gunduu		Mukuni	Dilapidated	1300	Kazungula	Southern
220	Gunduu		Mukuni	New construction	1300	Kazungula	Southern
221	Centre		Nyawa	Dilapidated	3000	Kazungula	Southern
222	Centre		Nyawa	New construction	3000	Kazungula	Southern

223	East	Nyawa	Dilapidated	3000	Kazungula	Southern
224	East	Nyawa	New construction	2000	Kazungula	Southern
225	West	Nyawa	Dilapidated	2,000	Kazungula	Southern
226	West	Sikaunzwe	Dilapidated	1,000	Kazungula	Southern
227	West	Nyawa	New construction	2,000	Kazungula	Southern
228	Bbilibisi	Sikaunzwe	Dilapidated	2500	Kazungula	Southern
229	Makononga	Kazungula	Dilapidated	2100	Kazungula	Southern
230	Makononga	Kazungula	New construction	2100	Kazungula	Southern
231	Siakalima	Simango	Dilapidated	1600	Kazungula	Southern
232	Siakalima	Simango	New construction	1600	Kazungula	Southern
233	Sikumba	Simango	Dilapidated	2000	Kazungula	Southern
234		Ngwezi	New construction	2250	Kazungula	Southern
235		Ngwezi	Dilapidated	2250	Kazungula	Southern
236		Katapazi	New construction	1333	Kazungula	Southern
237		Katapazi	New construction	1334	Kazungula	Southern
238		Katapazi	New construction	1333	Kazungula	Southern

239		Moomba	New construction	750	Kazungula	Southern
240		Moomba	New construction	750	Kazungula	Southern
241		Bombwe	New construction	1500	Kazungula	Southern
242		Bombwe	New construction	1500	Kazungula	Southern
243		Makunka	Dilapidated	1500	Kazungula	Southern
244		Makunka	New construction	1500	Kazungula	Southern
245		Musokotwane	Dilapidated	1200	Kazungula	Southern
246		Musokotwane	Dilapidated	1000	Kazungula	Southern
247	Kacheje	Musokotwane	Dilapidated	1300	Kazungula	Southern
248	Livingstone central	Central	Dilapidated	2650	Livingstone	Southern
249	Livingstone central	Central	New construction	2650	Livingstone	Southern
250	Mandia	Simonga	Dilapidated	1000	Livingstone	Southern
251	Sinde	Simonga	Dilapidated	1000	Livingstone	Southern
252	Maunga	Simonga	Dilapidated		Livingstone	Southern
253	Patasi	Siamaluba	Dilapidated	150	Choma	Southern
254	Patasi	Siamaluba	New construction	150	Choma	Southern

255	Kayoba	Siamaluba	Dilapidated	100	Choma	Southern
256	Sikabbubba	Siamaluba	Dilapidated	200	Choma	Southern
257	Sikabbubba	Siamaluba	New construction	200	Choma	Southern
258	Sikabbubba	Siamaluba	New construction	200	Choma	Southern
259	Bboola Village	Siamaluba	Dilapidated	300	Choma	Southern
260	Mukutulu	Siamaluba	Dilapidated	233	Choma	Southern
261	Mukutulu	Siamaluba	New construction	233	Choma	Southern
262	Mukutulu	Siamaluba	New construction	234	Choma	Southern
263	Siasikabole	Siamaluba	Dilapidated	500	Choma	Southern
264	Samakando	Siamaluba	Dilapidated	300	Choma	Southern
265	Katebe	Masuku	Dilapidated	200	Choma	Southern
266	Katebe	Masuku	New construction	200	Choma	Southern
267	Chuulu	Masuku	Dilapidated	500	Choma	Southern
268	Gamela	Gamela	Dilapidated	1000	Choma	Southern
269	Simpwezi	Gamela	Dilapidated	325	Choma	Southern
270	Simpwezi	Gamela	New construction	325	Choma	Southern

271	Ben Mulala	Gamela	Dilapidated	617	Choma	Southern
272		Gamela	Dilapidated	367	Choma	Southern
273	Mang'anga	Gamela	New construction	367	Choma	Southern
274	Siakayuwa	Gamela	Dilapidated	170	Choma	Southern
275	Siakayuwa	Gamela	New construction	170	Choma	Southern
276	Siakayuwa	Gamela	New construction	170	Choma	Southern
277	Siakayuwa	Gamela	New construction	170	Choma	Southern
278	Siakayuwa	Gamela	New construction	170	Choma	Southern
279	Siakayuwa	Gamela	New construction	170	Choma	Southern
280	Namoonza	Namoonza	Dilapidated	1300	Choma	Southern
281	Chipande	Namoonza	Dilapidated	700	Choma	Southern
282	Chazangwe	Namoonza	Dilapidated	800	Choma	Southern
283	Simale	Namoonza	Dilapidated	850	Choma	Southern
284	Siachaya	Namoonza	Dilapidated	900	Choma	Southern
285	Avant	Choma	Dilapidated	100	Choma	Southern
286	Avant	Choma	New construction	100	Choma	Southern

287	Muchaala	Choma	Dilapidated	500	Choma	Southern
288	Muchaala	Choma	New construction	500	Choma	Southern
289	Siachobe	Choma	Dilapidated	833	Choma	Southern
290	Siachobe	Choma	New construction	833	Choma	Southern
291	Siachobe	Choma	New construction	833	Choma	Southern
292	Munkombwe	Choma	Dilapidated	1500	Choma	Southern
293	Nakeempa	Nakeempa	Dilapidated	800	Choma	Southern
294	Siakachamatanga	Batoka	Dilapidated	1200	Choma	Southern
295	Siakachamatanga	Batoka	New construction	240	Choma	Southern
296	Siakachamatanga	Batoka	New construction	240	Choma	Southern
297	Siakachamatanga	Batoka	New construction	240	Choma	Southern
298	Siakachamatanga	Batoka	New construction	240	Choma	Southern
299	Chisangasanga	Batoka	Dilapidated	800	Choma	Southern
300	Manzinzili	Muzoka	Dilapidated		Choma	Southern
301	Ndondi	Sikatumba	Dilapidated	200	Choma	Southern
302	Ndondi	Sikatumba	New construction	200	Choma	Southern

303	Ndondi	Sikatumba	New construction	200	Choma	Southern
304	Ndondi	Sikatumba	New construction	200	Choma	Southern
305	Ndondi	Siamaluba	New construction	200	Choma	Southern
306	Sibbunda	Pemba	Dilapidated	4000	Choma	Southern
307	Maambo	Pemba	Dilapidated	2000	Choma	Southern
308	Choonya	Pemba	Dilapidated	1000	Choma	Southern
309	Munyona	Pemba	Dilapidated	2000	Choma	Southern
310	Chilundu	Pemba	Dilapidated	4000	Choma	Southern
311	Mandala	Mbabala	Dilapidated	1000	Choma	Southern
312	Sichibunde	Mbabala	Dilapidated	500	Choma	Southern
313	Sichibunde	Mbabala	New construction	500	Choma	Southern
314	Pangwe	Mbabala	Dilapidated	700	Choma	Southern
315	Hamachila	Mbabala	Dilapidated	900	Choma	Southern
316	Manga	Mang'unza	Dilapidated	800	Choma	Southern
317	Manka	Mang'unza	Dilapidated	1500	Choma	Southern
318	Chivuna	Mang'unza	Dilapidated	1500	Choma	Southern

319	Namoonga	Mang'unza	Dilapidated	1000	Choma	Southern
320	Kachenje	Mang'unza	Dilapidated	2000	Choma	Southern
321	Namapana	Mang'unza	Dilapidated	1000	Choma	Southern
322	Mapanza	Mapanza	Dilapidated	1500	Choma	Southern
323	Ngolwe	Mapanza	Dilapidated	2000	Choma	Southern
324	Simaubi	Simaubi	Dilapidated	2500	Choma	Southern
325	Kabanze	Simaubi	Dilapidated		Choma	Southern
326	Mpinda	Simaubi	Dilapidated		Choma	Southern
327	Muyobe	Simaubi	Dilapidated		Choma	Southern
328	Chilalantambo	Dundwa	Dilapidated		Choma	Southern
329	Macha	Macha	Dilapidated	1500	Choma	Southern
330	Neenfwe	Macha	Dilapidated	1000	Choma	Southern
331	Bulebu	Macha	Dilapidated	800	Choma	Southern
332	Kabimba	Kabimba	Dilapidated	1000	Choma	Southern
333	Silukwiya	Kabimba	Dilapidated	8000	Choma	Southern
334	Sinalungu	Kabimba	Dilapidated	1000	Choma	Southern

335	Mutanga	Kabimba	Dilapidated		Choma	Southern
336	Libingi	Kabimba	Dilapidated		Choma	Southern
337	Bbandama	Mbabala	Dilapidated		Choma	Southern
338	Hamachila	Pemba	Dilapidated		Choma	Southern
339	Malindi	Sikatumba	Dilapidated		Choma	Southern
340	Malalo	Sikatumba	Dilapidated		Choma	Southern
341	Sikabbubba West	Nakeempa	Dilapidated		Choma	Southern
342	Kasiya	Kasiya	Dilapidated		Choma	Southern
343	Munyona	Muzoka	Dilapidated		Choma	Southern
344	Matinti	Pemba	Dilapidated		Choma	Southern
345	Hilika	Namoonza	Dilapidated	900	Choma	Southern
346	Siabukobe	Nakeempa	Dilapidated		Choma	Southern
347	Mateba	Sikatumba	Dilapidated		Choma	Southern
348	Masele	Namwala Central	Dilapidated	9200	Choma	Southern
349	Baambwe	Baambwe	Dilapidated	21247	Choma	Southern
350	Maala (Mungaila Chiefdom)	Maala	Non functional	4929	Choma	Southern

351	Maala (Mungaila Chiefdom)	Maala	New construction	4929	Choma	Southern
352	Maala (Mungaila Chiefdom)	Maala	New construction	4929	Choma	Southern
353	Busangu (Mungaila Chiefdom)	Maala	Non functional	8987	Choma	Southern
354	Busangu (Mungaila Chiefdom)		New construction	4494	Choma	Southern
355	Kantengwa (Mungaila Chiefdom)	Kantengwa	Non functional	5183	Choma	Southern
356	Kantengwa (Mungaila Chiefdom)		New construction	5183	Choma	Southern
357	Shokombwe (Nalubamba chief dom)	Chitongo	Non functional	2361	Choma	Southern
358	Shokombwe (Nalubamba chief dom)		New construction	2361	Choma	Southern
359	Shokombwe (Nalubamba chief dom)		New construction	2361	Choma	Southern
360	Kabanga (Nalubamba chiefdom)	Chitongo	Non functional	3400	Choma	Southern
361	Kabanga (Nalubamba chiefdom)		New construction	3400	Choma	Southern

362	Halupumbu (nalubamba chiefdom)	Nakamboma	Dilapidated	3428	Choma	Southern
363	Mbeza (Nalubamba Chiefdom)	Nakamboma	Non functional	3450	Choma	Southern
364	Simanje	Nakamboma	Dilapidated	3550	Choma	Southern
365	Kaabwe	Muchila	Non functional	2,989	Choma	Southern
366	Kaabwe	Muchila	New construction	2,989	Choma	Southern
367	Kaabwe	Muchila	New construction	2,989	Choma	Southern
368	Kaabwe	Muchila	New construction	2,989	Choma	Southern
369	Kaabwe	Muchila	New construction	2,989	Choma	Southern
370	Kazuni kalila	Ndema	Non functional	1998	Choma	Southern
371	Masompe (Muchila Chiefdom)	Ndema	Non functional	930	Choma	Southern
372	Masompe (Muchila Chiefdom)		New construction	930	Choma	Southern
373	Katantila	Katantila	Non functional	9225	Choma	Southern
374	Katantila	Katantila	New construction	9225	Choma	Southern

375	Ndema	Ndema	Non functional	900	Choma	Southern
376	Munyumbwe	Munyumbwe	Dilapidated	2000	Gwembe	Southern
377	Munyumbwe	Munyumbwe	Dilapidated	2120	Gwembe	Southern
378	Central	Central	Dilapidated	1233	Gwembe	Southern
379	Bbondo	Bbondo	Dilapidated	1164	Gwembe	Southern
380	Bbondo	Bbondo	New construction	1164	Gwembe	Southern
381	Bbondo	Bbondo	New construction	1164	Gwembe	Southern
382	Sinafala	Sinafala	New construction	1999	Gwembe	Southern
383	Sinafala	Sinafala	New construction	1999	Gwembe	Southern
384	Sinafala	Sinafala	New construction	1999	Gwembe	Southern
385	Sinafala	Sinafala	New construction	1999	Gwembe	Southern
386	Chaamwe	Chaamwe	New construction	1279	Gwembe	Southern
387	Chaamwe	Chaamwe	New construction	1279	Gwembe	Southern
388	Chaamwe	Chaamwe	New construction	1279	Gwembe	Southern
389	Jumbo Sompani	Jumbo Sompani	New construction	1548	Gwembe	Southern
390	Luumbo	Luumbo	New construction	1461	Gwembe	Southern

391	Lumbo	Lumbo	New construction	1461	Gwembe	Southern
392	Makuyu	Makuyu	New construction	1483	Gwembe	Southern
393	Makuyu	Makuyu	New construction	1483	Gwembe	Southern
394	Chipeco	Chipeco	New construction	3743 1	Gwembe	Southern
395	Chipeco	Chipeco	New construction	7489	Gwembe	Southern
396	Chipeco	Chipeco	New construction	7489	Gwembe	Southern
397	Chipeco	Chipeco	New construction	7489	Gwembe	Southern
398	Chipeco	Chipeco	New construction	7489	Gwembe	Southern
399	Central	Maliko	Dilapidated	1200	Sinazongwe	Southern
400	Central	Siagwinda	Dilapidated	1150	Sinazongwe	Southern
401	Sinazeze	Sinazeze	Dilapidated	3000	Sinazongwe	Southern
402	Sinazeze	Siamajere	Dilapidated	1475	Sinazongwe	Southern
403	Sinazeze	Siamajere	New construction	1475	Sinazongwe	Southern
404	Sinamalima	Sinalilongwe	Dilapidated	3000	Sinazongwe	Southern
405	Sinamalima	Sinalilongwe	New construction	3000	Sinazongwe	Southern
406	Sinamalima	Manyonga	Dilapidated	3300	Sinazongwe	Southern

407	Sinamalina	Manyonga	New construction	3300	Sinazongwe	Southern
408	Buley Malima	Munyati	Dilapidated	2160	Sinazongwe	Southern
409	Buley Malima	Munyati	New construction	2160	Sinazongwe	Southern
410	Kanchindu	Doonolo	Dilapidated	2561	Sinazongwe	Southern
411	Kanchindu	Doonolo	New construction	2560	Sinazongwe	Southern
412	Kanchindu	Doonolo	New construction	2560	Sinazongwe	Southern
413	Kanchindu	Doonolo	New construction	2560	Sinazongwe	Southern
414	Mukuku	Sinakasikili	Dilapidated	6714	Sinazongwe	Southern
415	Siameja	siameja	New construction	24437	Sinazongwe	Southern
416	Siameja	siameja	New construction	24437	Sinazongwe	Southern
417	Siameja	siameja	New construction	24437	Sinazongwe	Southern
418	Maamba	maamba	New construction	2823	Sinazongwe	Southern
419	Maamba	maamba	New construction	2823	Sinazongwe	Southern
420	Mlolo	Chanida	Non functional	2012	Chadiza	Eastern
421	Tafelansoni	Chamandala	Non functional	3749	Chadiza	Eastern
422	Zingalume	Chadiza central	Non functional	2307	Chadiza	Eastern

423	Chikoloka	Chadiza central	Non functional	1429	Chadiza	Eastern
424	Khulika	Kumadzi	Non functional	3147	Chadiza	Eastern
425	Chimwendo	Zozwe	Non functional	3632	Chadiza	Eastern
426	Mangwe	Mangwe	Non functional	4707	Chadiza	Eastern
427	Kamzoole	Egichikeni	Non functional	2500	Lundazi	Eastern
428	Jalijali	Egichikeni	Non functional	2250	Lundazi	Eastern
429	Mtvalo	Egichikeni	Non functional	2000	Lundazi	Eastern
430	Emusa	Egichikeni	Non functional	2500	Lundazi	Eastern
431	Chiungwe	Egichikeni	Non functional	2500	Lundazi	Eastern
432	Phikamaladza	Lusuntha	Non functional	2250	Lundazi	Eastern
433	Lusuntha	Lusuntha	Non functional	1500	Lundazi	Eastern
434	Japhet	Japhet	Non functional	1500	Lundazi	Eastern
435	Kapichila	Japhet	Non functional	2500	Lundazi	Eastern
436	Mkomba	Japhet	Non functional	2500	Lundazi	Eastern
437	Kamaphina	Kanyunya	Non functional	1750	Lundazi	Eastern
438	Kamtolo	Kanyunya	Non functional	1500	Lundazi	Eastern

439	Kamphanda	Kanyunya	Non functional	2000	Lundazi	Eastern
440	Mwase	Mwase	Non functional	2250	Lundazi	Eastern
441	Ndunga	Mwase	Non functional	2500	Lundazi	Eastern
442	Zenekeza	Mwase	Non functional	1500	Lundazi	Eastern
443	Mkanile	Mwase	Non functional	1500	Lundazi	Eastern
444	Kathimba	Mwase	Non functional	1750	Lundazi	Eastern
445	Nkhanga	Lundazi Central	Proposed new construction	3500	Lundazi	Eastern
446	Kaitinde	Lundazi Central	Dilapidated	3250	Lundazi	Eastern
447	Kalapula	Boma	Fair	1800	Katete	Eastern
448	Mbinga	Boma	Fair	1100	Katete	Eastern
449	Chilingondi	Kamphambe	Dilapidated-Non functional	900	Katete	Eastern
450	A.I	Kamphambe	Dilapidated-Non functional	1200	Katete	Eastern
451	Mpoto	Mpangwe	Fair	1000	Katete	Eastern
452	Undi	Mpangwe	Dilapidated	1200	Katete	Eastern
453	Sizilo	Mpangwe	Dilapidated	1000	Katete	Eastern

454	Kafumbwe	Kafumbwe	Need new construction	1300	Katete	Eastern
455	Chingaipe	Kafumbwe	Fair	1400	Katete	Eastern
456	Kazule	Kafumbwe	Dilapidated	2200	Katete	Eastern
457	Mtandaza	Mtandaza	Fair	700	Katete	Eastern
458	Chakumba	Mtandaza	Dilapidated	700	Katete	Eastern
459	Kameta	Kameta	Dilapidated	8300	Katete	Eastern
460	Kagoro	Kagoro	Dilapidated	800	Katete	Eastern
461	Kampodza	Kagoro	Dilapidated	500	Katete	Eastern
462	Fisi	Kagoro 2 (Mzime)	Dilapidated	400	Katete	Eastern
463	Mshoka	Kagoro 2 (Mzime)	Dilapidated	300	Katete	Eastern
464	Champhala	Kagoro 2 (Mzime)	Dilapidated	800	Katete	Eastern
465	Kalambana	Kagoro 2 (Mzime)	Need new construction	800	Katete	Eastern
466	Chinyama	Mtunya	Need new construction	5000	Katete	Eastern
467	Katepela	Mtunya	Fair	4000	Katete	Eastern
468	Seya	Seya	Operational but needs borehole	7000	Katete	Eastern
469	Chiluzi	Seya	Fair	1000	Katete	Eastern

470	Joel	Vulamukoko	Dilapidated	800	Katete	Eastern
471	Nyamaulo	Vulamukoko	Fair	1000	Katete	Eastern
472	Kawanje	Vulamukoko	Fair	1000	Katete	Eastern
473	Michembo	Vulamukoko	Dilapidated	800	Katete	Eastern
474	Oliva	Vulamukoko	Fair	800	Katete	Eastern
475	Lumamba dip tank	Chipangali	Dilapidated	2500	chipata	Eastern
476	Mafuta dip tank	Mafuta	Non functional	1700	chipata	Eastern
477	Chanje dip tank	Chanje	Non functional	2500	chipata	Eastern
478	Kaulembe	Msandile	Non functional	3500	chipata	Eastern
479	Chinjara	Chipata central	Non functional	3500	chipata	Eastern
480	Feni	Feni	Non functional	3000	chipata	Eastern
481	Kwenje	Kwenje	Dilapidated	4000	chipata	Eastern
482	Mgabi	Mwami	Non functional	3000	chipata	Eastern
483	Makwe	Feni	Non functional	2700	chipata	Eastern
484	Jungujane	Jungujane	Non functional	1500	chipata	Eastern
485	Kaphinde	Kaphinde	Non functional	2000	chipata	Eastern

486	Chikando/sairi	Chikando	Non functional	4000	chipata	Eastern
487	Mkanile	Kamlaza	Non functional	4000	chipata	Eastern
488	Vuso	Chiparamba	Dilapidated	4000	chipata	Eastern
489	Nkphoto	Chipangali	Non functional	3000	chipata	Eastern
490	Chikuwe	Kalichero	Non functional	3500	chipata	Eastern
491	Kachusi	Petauke Central	Non Operational	700	Petauke	Eastern
492	Kachusi	Petauke centra	Need new construction	700	Petauke	Eastern
493	Chintowe	Nyamphande	Non Operational	800	Petauke	Eastern
494	NNSS	Nyamphande	Non Operational	600	Petauke	Eastern
495	Kanongo	Nyamphande	Non Operational	800	Petauke	Eastern
496	Chikalawa	Chikalawa	Non Operational	2000	Petauke	Eastern
497	Kapungwe	Chikalawa	Non Operational	3000	Petauke	Eastern
498	Chivunga	Kalindawalo	Non Operational	1200	Petauke	Eastern
499	Chimba	Kalindawalo	Non Operational	1500	Petauke	Eastern
500	Nyanje	Nyanje	Non Operational	2000	Petauke	Eastern
501	Nsato	Sinda	Non Operational	1500	Petauke	Eastern

502	Penyani	Sinda	Non Operational	600	Petauke	Eastern
503	Nyamutuma	Sinda	Non Operational	1500	Petauke	Eastern
504	Chassa	Sinda	Non Operational	2000	Petauke	Eastern
505	Mwanjawanthu	Mwanjawanthu	Non Operational	1300	Petauke	Eastern
506	Mtukuzi	Mwanjawanthu	Non Operational	2300	Petauke	Eastern
507	Mankungwe	Manyane	Non Operational	900	Petauke	Eastern
508	Nyonyo	Mwanjawanthu	Non Operational	1400	Petauke	Eastern
509	Chikumba	Mumbi	Non Operational	1700	Petauke	Eastern
510	Nyampinga	Chataika	Non Operational	800	Petauke	Eastern
511	Pandala	Chataika	Non Operational	1600	Petauke	Eastern
512	NDAKE	CENTRAL I	Non functional	6,000	Nyimba	Eastern
513	CHIPEMBE	CHIPEMBE	Non functional	8,000	Nyimba	Eastern
514	CHIMPANJE	CHIPEMBE	Need new construction	3,500	Nyimba	Eastern
515	WAZAZA	MSORO	Need new construction	1000	Mambwe	Eastern
516	MSORO CENTRAL	MSORO	Need new construction	600	Mambwe	Eastern
517	KASAMANDA	KASAMANDA	Need new construction	1200	Mambwe	Eastern

518	CHIKOWA	JUMBE	Need new construction	500	Mambwe	Eastern
519	MWANAMU LANGENI	NCHEKA	Need new construction	560	Mambwe	Eastern
520	CHATI	MPOMWA	Need new construction	500	Mambwe	Eastern
521	Former state ranch	Solwezi Central	Non functional		Solwezi	North Western
522	Kazhiba settlement	Solwezi Central	Proposed new construction		Solwezi	North Western
523	Munena	Mutanda	Proposed new construction		Solwezi	North Western
524	Mutanda	Mutanda	Proposed new construction		Solwezi	North Western
525	Musele	Kisasa	Proposed new construction		Solwezi	North Western
526	Kanzala	Kisasa	Proposed new construction		Solwezi	North Western
527	Mumbeji	Kisasa	Proposed new construction		Solwezi	North Western
528	Chilen'ga	Central Camp	Non functional		Zambezi	North Western
529	Kasesi	Central Camp	Non functional		Zambezi	North Western
530	Mukanda nkunda	Central Camp	Non functional		Zambezi	North Western

531	Dipalata	Diapalata	Non functional		Zambezi	North Western
532	Mwange	Chinyamalitapi	Non functional		Zambezi	North Western
533	Kucheka	Kucheka	Non functional		Zambezi	North Western
534	Mpidi	Mpidi	Non functional		Zambezi	North Western
535	Kasompa	Lwawu	Non functional		Zambezi	North Western
536	Muzhila	Kanyama	Non functional		Zambezi	North Western
537	Kalwele	Kanyama	functional		Zambezi	North Western
538	Kafundampawampu	Kanyama	functional		Zambezi	North Western
539	Lwekela	Ikelen'ge	functional		Zambezi	North Western
540	Miluji	Miluji	Non functional		Zambezi	North Western
541	Central	Mufumbwe Central	Functional		Zambezi	North Western
542	Kimabokwe	Dangwe	Proposed new construction		Zambezi	North Western
543	Lobofu	Lubofu	Proposed new construction		Zambezi	North Western
544	Kabulamema	central	Proposed new construction		Kabompo	North Western
545	Kawanda	manyinga	Proposed new construction		Kabompo	North Western

546	Chikenge	chikenge	Proposed new construction		Kabompo	North Western
547	Watopa	mumbeji	Proposed new construction		Kabompo	North Western
548	Chavuma	Chavuma Central	Proposed new construction		Kabompo	North Western
549	Nyatanda	Chavuma Central	Proposed new construction		Kabompo	North Western
550	Lukolwe	Chavuma Central	Proposed new construction		Kabompo	North Western
551	Nguvu	Chavuma Central	Proposed new construction		Kabompo	North Western
552	Ntipo	Ntipo	Dilapidated	1,000/1,400	Isoka	Muchinga
553	Mutonda	Mutonda	Dilapidated	2,300/1,300	Isoka	Muchinga
554	Kanyebele	Munyeta	Proposed new construction	800/980	Chama	Muchinga
555	Kalovya	Kalovya	Proposed new construction	600/2,000	Chama	Muchinga
556	Kalinda	Chama central	Spray race needed	700/800	Chama	Muchinga

557	Chasato	Chikwa	Spray race needed	750/800	Chama	Muchinga
558	Kalisha	Kaso	Dilapidated	1,044/1,096	Chinsali	Muchinga
559	Misale	Kaso	Spray race	700/1,111	Chinsali	Muchinga
560	Ntatumbila	Ntatumbila	Dilapidated	1,118/716	Nakonde	Muchinga
561	Llola	Ilola	Dilapidated	800/1,256	Nakonde	Muchinga
562	Shemu	Shemu	Dilapidated	1,200/600	Nakonde	Muchinga
563	Kaombwe	Katwachi	Dilapidated	800/780	Nakonde	Muchinga
564	Katompwezi	Nakonde Central	Dilapidated	1200/1,606	Nakonde	Muchinga
565	Mwanzo	Mwanzo	Dilapidated	700/840	Nakonde	Muchinga
566	Chawa	Nteko	Dilapidated	749/627	Nakonde	Muchinga
567	Kopa	Kopa	Dilapidated	480/3,063	Mpika	Muchinga
568	Kanchibiya	Chibuye	Functional	700/976	Mpika	Muchinga
569	Muyombe	Muyombe	New construction	4,000/804	Mafinga	Muchinga
570	Nyakayengere	Tendere	Dilapidated	3,000/616	Mafinga	Muchinga
571	Kaseya	Tendere	Dilapidated	3,020/260	Mafinga	Muchinga
572	Mulekatembo	Mulekatembo	Dilapidated	2,400/180	Mafinga	Muchinga

573	Chipakama	Tendere	Spray race	2,000/200	Mafinga	Muchinga
574	Mulonga (Makasa)	Kampamba camp	Dilapidated and no water supply	1,630 cattle, 2,840 goats	Mungwi	Northern
575	Makasa (Ndakala)	Makasa	Dilapidated and no water supply	1,960 cattle, 36 goats	Mungwi	Northern
576	Mulongele	Makasa camp	Dilapidated and no water supply	2,100 cattle, Goats 1574	Mungwi	Northern
577	Kayambi	Kayambi camp	New construction Including water supply	2,600 cattle, Goats 987	Mungwi	Northern
578	Malole	Malole camp	New construction Including water supply	980 cattle, 1,154 goats	Mungwi	Northern
579	Kampamba (Chisali)	Kampamba camp	Spray race (New construction)	3,642 cattle, Goats 2,140	Mungwi	Northern
580	Musa Dairy Scheme	Musa Camp	Dilapidated and no water supply	800 Cattle, 300 goats	Kasama	Northern
581	Selu	Chilongoshi Camp	New construction including water supply	640 cattle, 206 goats	Kasama	Northern
582	Lukulu North	Chilongoshi Camp	New construction including water supply	443 cattle, 112 goats	Kasama	Northern
583	Kasonde Chisuna	Kasonde Chisuna	New construction including water supply	211 cattle, 100 goats	Kasama	Northern

584	Nkole Mfumu	Musa Camp	New construction including water supply	708 Cattle, 171 goats	Kasama	Northern
585	Chiombo	Chiombo camp	New construction including water supply	276 cattle, 111 goats	Kasama	Northern
586	Kalungwishi Ranch	Chitoshi camp	New construction including water supply	967 cattle, 264 goats. But the figures will increase as this is the breeding centre which is being revived.	Mporokoso	Northern
587	Kalungwishi Ranch	Chitoshi camp	New construction including water supply	same as above	Mporokoso	Northern
588	Chitoshi	Chitoshi camp	New construction including water supply	1,267 cattle, 315 Goats	Mporokoso	Northern
589	Kaputa	Kaputa Central	Spray race New construction Including water supply	1,820 goats	Kaputa	Northern
590	Kampinda	Nsama district	Spray race New construction Including water supply	2,500 goats	Nsama(New district)	Northern
591	Mukupakatandula	Mukupakatandula camp	Spray race New construction Including water supply	2,100 goats	Nsama(New district)	Northern
592	Chocha	Chocha camp	Spray race New construction Including water supply	1,600 goats	Nsama(New district)	Northern

593	Matipa	Matipa Camp	Spray race New construction Including water supply	47 cattle,2,043 goats	Chilubi	Northern
594	Chifwenge	Chifwenge Camp	Spray race New construction Including water supply	78 cattle,953 goats	Chilubi	Northern
595	Muchinshi	Muchinshi camp	Spray race New construction Including water supply	921 goats	Chilubi	Northern
596	Mbala FTC	Mbala central	Spray race New construction Including water supply	3,852 cattle	Mbala	Northern
597	Kawimbe	Kawimbe camp	Spray race New construction Including water supply	2,304 Cattle	Mbala	Northern
598	Kasesha	Mbala central	Spray race New construction Including water supply	3,852 cattle	Mbala	Northern
599	Mwamba	Mwamba camp	Spray race New construction Including water supply	3,364 cattle	Mbala	Northern
600	Kaka	Kaka camp	Spray race New construction Including water supply	5,399 cattle	Mbala	Northern

601	Sikalembe	Nsokolo camp	Spray race New construction Including water supply	1,765 cattle	Mbala	Northern
602	Kasunga	Mwamba camp	Spray race Dilapidated and no water supply	3,364 cattle	Mbala	Northern
603	Kowa	Kawimbe camp	Dilapidated and no water supply	2,304 Cattle	Mbala	Northern
604	Kawimbe	Kawimbe camp	Dilapidated and no water supply	2,304 Cattle	Mbala	Northern
605	Lumi	Kawimbe camp	Dilapidated and no water supply	2,304 Cattle	Mbala	Northern
606	Nsangu	Mbala central	Dilapidated and no water supply	3,852 cattle	Mbala	Northern
607	Kaka	Kaka camp	Dilapidated and no water supply	5,399 cattle	Mbala	Northern
608	Chileshe	Nsokolo camp	Dilapidated and no water supply	1,765 cattle	Mbala	Northern
609	Chozi	Chozi	Dilapidated and no water supply	1,485 cattle	Mbala	Northern

610	Mwamba	Mwamba camp	Dilapidated and no water supply	3,364 cattle	Mbala	Northern
611	Wangala	Mwamba camp	Dilapidated and no water supply	3,364 cattle	Mbala	Northern
612	Isoko	Isoko Camp	Spray race New construction Including water supply	100 cattle, 2000 goats	Mbala	Northern
613	Saili	Luwingu Central	New construction including water supply	Cattle 1,900, Goats 15,000	Luwingu	Northern
614	Mwambashi	Mwambashi	New construction	800 cattle	Chingola	Copperbelt
615	Mutenda	Mutenda	New construction	600 Cattle	Chingola	Copperbelt
616	Milyashi	Konkola	New construction	800 cattle	Chilabombwe	Copperbelt
617	Chimfushi	Chimfushi	New construction	900 cattle	Chilabombwe	Copperbelt
618	Luongo	Itimpi-Luongo	New construction		Kitwe	Copperbelt
619		Kakolo			Kitwe	Copperbelt
620		Mwekera			Kitwe	Copperbelt
621		luto			Kitwe	Copperbelt
622		Mufuchani			Kitwe	Copperbelt

623		Twatasha					Kitwe	Copperbelt
624		kamfinsa		New construction			Kitwe	Copperbelt
625		Mutenda					Mufulira	Copperbelt
626		Mutundu					Mufulira	Copperbelt
627		Luansobe		New construction			Mufulira	Copperbelt
628		Mushakashi					Mufulira	Copperbelt
629		Kalindi					Mufulira	Copperbelt
630	Chembe	Chembe		New construction	3,000 Cattle		Kalulushi	Copperbelt
631	Ichimpe	Mwambashi		New construction	3,000 Cattle		Kalulushi	Copperbelt
632	Chati	Chati		New construction	5,000 Cattle		Kalulushi	Copperbelt
633	Mukutuma	Kafubu		Dilapidated-non functional	2,000		Lufwanyama	Copperbelt
634	Chobola	Kafubu		I function Spray race			Lufwanyama	Copperbelt
635	Luswishi	Mushingashi		New construction	1,500		Lufwanyama	Copperbelt
636	Chananda	Mushingashi		New construction	1,000		Lufwanyama	Copperbelt
637	Resettlement	kambilombilo		New construction	1,000		Lufwanyama	Copperbelt
638	Mukema	kabundya		New construction	2,000		Lufwanyama	Copperbelt

639	Nteleshi	mwelushi	New construction	1,500	Lufwanyama	Copperbelt
640	Chitwi	chitwi camp	New construction	520 cattle	Luanshya	Copperbelt
641	Kafubu		New construction	541 cattle	Luanshya	Copperbelt
642	Chilabula		New construction	420 cattle	Luanshya	Copperbelt
643	Kampelembe	kampelembe shed	New construction	529 cattle	Luanshya	Copperbelt
644	Kamilendo	Fisenge	New construction	542 cattle	Luanshya	Copperbelt
645	Kamisenga	Masaiti Central	New construction	1,500 Cattle	Masaiti	Copperbelt
646	Kashitu	Miengwe	New construction	2,500 Cattle	Masaiti	Copperbelt
647	Kaloko	Miengwe	New construction	1,000 Cattle	Masaiti	Copperbelt
648	Mutaba	Mutaba	Dilapidated	3,000 Cattle	Masaiti	Copperbelt
649	Katonte	Mutaba	New construction	3,500 cattle	Masaiti	Copperbelt
650	Chinwa	Mpongwe central	Dilapidated-non functional	1151	Mpongwe	Copperbelt
651	Buyantashi	Kanyenda	New construction	2,696 Cattle	Mpongwe	Copperbelt
652	Ibondwe	Kanyenda	New construction	2216 Cattle	Mpongwe	Copperbelt
653	Musofu	Musofu	New construction	9,325 Cattle	Mpongwe	Copperbelt
654	St Anthony	St Anthony	New construction	12,800 Cattle	Mpongwe	Copperbelt

655	Minsundu dairy Spray race	Minsundu	Dilapidated-non functional	2,000	Ndola	Copperbelt
656	Sakania	sakania	New construction	725 Cattle	Ndola	Copperbelt
657	Kafubu	Ndola central	New construction	350 Cattle	Ndola	Copperbelt
658		Chipapa	Dilapidated		Kafue	Lusaka
659		Mpampa	Dilapidated		Kafue	Lusaka
660		Chikupi	Dilapidated		Kafue	Lusaka
661		Mungu	Dilapidated		Kafue	Lusaka
662		Chanyanya	Dilapidated		Kafue	Lusaka
663		Chiyawa	New construction		Chirundu	Lusaka
664		Rufunsa	New construction		Rufunsa	Lusaka
665		Chilanga	New construction		Chilanga	Lusaka
666	Kazoka	Shibuyunji	Dilapidated		Shibuyunji	Lusaka
667	Mukobela	Shibuyunji	New construction		Shibuyunji	Lusaka
668	Chitanga-Muzuni	Shibuyunji	New construction		Shibuyunji	Lusaka
669	Chipindi	Shibuyunji	New construction		Shibuyunji	Lusaka
670		Luangwa	New construction		Luangwa	Lusaka

671	Kapamangoma	Chalimbana	Dilapidated		Chongwe	Lusaka
672	Lwimba	Lwimba	Dilapidated		Chongwe	Lusaka
673	Lukoshi	Lwimba	Dilapidated		Chongwe	Lusaka
674	Katoba	Lwimba	Dilapidated		Chongwe	Lusaka
675	Kapete	Nyangwena	Dilapidated		Chongwe	Lusaka
676	Chitentabunga	Chalimbana	Dilapidated		Chongwe	Lusaka
677	Nyangwena	(Nyangwena)	Dilapidated		Chongwe	Lusaka
678	Chibombe	(Katoba)	Dilapidated		Chongwe	Lusaka
679	Mutamino	(Chinkuli)	Dilapidated		Chongwe	Lusaka
680	Njolve	(Palabana)	Dilapidated		Chongwe	Lusaka
681	Chinyunyu	(Chibango)	Dilapidated		Chongwe	Lusaka
682	Kamami	Mwenda	Dilapidated	1,610	Mwense	Luapula
683	Kashiba	Mwense Central	Dilapidated	345	Mwense	Luapula
684	Lupososhi	Lupososhi	Construction	580	Mwense	Luapula
685	Lubwe	Lubwe	Dilapidated	700	Samfya	Luapula
686	Nambale	Mweva	Construction	800	Samfya	Luapula

687	Makasa	Samfya Central	Construction	400	Samfya	Luapula
688	Chitundwa		Construction	500	Samfya	Luapula
689	Ndoba	Mansa East	Construction	363	Mansa	Luapula
690	Monga	Mansa East	Dilapidated	287	Mansa	Luapula
691	Masaba	Mansa Central	Dilapidated	250	Mansa	Luapula
692	Chishinga (3)	Musungu	Dilapidated		Kawambwa	Luapula
693	Chisinga	Musungu	New construction		Kawambwa	Luapula
694	Chisinga	Musungu	New construction		Kawambwa	Luapula
695	Chisinga	Musungu	New construction		Kawambwa	Luapula
696	Chama	Chibote	Dilapidated		Kawambwa	Luapula
697		Milenge East	Construction	350	Milenge	Luapula

APPENDIX 6

Disease Incidence Report

Year	Province	Disease	No of Outbreaks
2011	Eastern	ASF	1
	Eastern	Anthrax	1
	Copperbelt	CBPP	1
	Western	CBPP	3
	Western	Anthrax	1
	Southern	Anthrax	3
2012	Northern	ASF	1
	Western	Anthrax	2
	Northern	FMD	1
	Southern	FMD	1
2013	Northern	CBPP	6
	Western	CBPP	5
	Eastern	ASF	17
	Lusaka	ASF	1
	North western	ASF	1
	Northern	ASF	2
	Southern	ASF	1
	Western	Anthrax	2

APPENDIX 7

Livestock Disease Situation (2013)

Disease	Case	Death	HerdSize	Pop At Risk	Treat	Vacc
Anthrax	21	20	284	3,354	1	-
Blackleg	1,311	371	16,439	89,538	1,037	8,301
Dermatophilosis/Senkobo	2,117	45	22,357	45,947	2,070	-
Foot and Mouth Disease	110	0	255	-	53	1,097,982
CBPP	757	133	4,569	-	1	395,190
Theileriosis	16,965	2,304	156,006	581,222	14,905	23,027
Haemorrhagic Septicaemia	352	158	3,184	11,552	309	1,458
African Swine Fever	2,224	1,324	7,867	11,000	18	0
Coccidiosis	6	6	285	285	279	0
IBR/Gumboro Disease	16,843	14,638	180,393	296,318	109,900	173,659
Lumpy Skin Disease	4,448	115	107,935	181,238	4,180	776
Newcastle Disease	34,623	23,760	241,140	595,410	81,316	633,008
Trypanosomiasis	2,432	155	18,079	66,090	2,259	0
Total	82,209	43,029	758,793	1,881,954	216,328	2,333,401

APPENDIX 8

Livestock Disease Situation (2012)

Disease	Species	Cases	Deaths	Herd Size	Pop At Risk	Treated	Vaccinated	Dipped
CBPP	Cattle	29	19	753	9,660	1	No data	0
FMD	Cattle	No data	No data	No data	No data	No data	No data	No data
ECF	Cattle	2,691	840	28,029	140,646	2,027	820	16,216
ASF	Pigs	5	5	15	30	0	0	0
NCD	Poultry	5,153	3,815	43,861	149,343	18,588	15,367	0
Total		7,878	4,679	72,658	299,679	20,616	16,187	16,216

APPENDIX 9

	Year 2010	Year 2011	Percent Change %
Number of Districts Affected	30	14	-53%
Number of Cases	1,628	517	-68%
Number of Deaths	764	196	-74%
Total	2,422	727	(2)

APPENDIX 10

Schedule of Ministry Personnel Interviewed

1. Director – Department of Veterinary Services
2. Deputy Directors (2)- Department of Veterinary Services
3. Chief Veterinary Officer
4. Principal Veterinary Officers
5. Head – CVRI
6. Provincial Veterinary Officers
7. District Veterinary Officers
8. Senior Veterinary officers
9. Senior Research Officers
10. Livestock Officers
11. Laboratory technicians
12. Laboratory Assistants
13. Camp Officers

APPENDIX 11

Field Visits

1. Lusaka
2. Luangwa District
3. Katete District
4. Nyimba
5. Petauke District
6. Chipata District
7. Mazabuka District
8. Namwala District
9. Choma District
10. Kazungula District
11. Livingstone
12. Sesheke District
13. Shangombo District
14. Kaoma District
15. Mongu

APPENDIX 12

Farmers Interviewed

1. One farmer in Luombe Camp – Mazabuka
2. Two farmers in Magoye – Mazabuka
3. One farmer in Namwala Central
4. Two farmers in Musotwane veterinary camp – Kazungula
5. One farmer in Kalindawalo veterinary camp – Petauke
6. One farmer in Sesheke

Total number of farmers interviewed – 08

APPENDIX 13

Management and Control of Livestock Diseases Questionnaire Headquarters

Question	Response	Documents required	Comments by Auditor
<ul style="list-style-type: none"> What guidelines and regulations govern the operations of the veterinary services department? 	<ul style="list-style-type: none"> -The department draw on for guidelines; -Animal Health ACT(which deals with disease control), strategies on Specific Disease Control, - Livestock Identification & Traceability ACT, -Para Vet ACT, -OIE (global guidelines on standard disease control &trade), -Regional strategy on 	Relevant guidelines and regulations	

	disease control, -Public Health ACT, , -The Sixth National Development Plans		
<ul style="list-style-type: none"> Does the Ministry have a strategic plan?(Will be answered above) Did it cover the period under review? If not, what has been the impact of operating the veterinary services department without a strategic plan? What is the current status of the strategic plan (assuming it is not approved as at date of interview) 	<p>-The Ministry has a Strategic Plan in place 2013-2016. (the document still in development stage & the first ever)</p> <p>-Impact of operating without strategic plan include lack of plan & vision & clear operations for detail department rely on Draft Livestock Development Policy</p>	Approved strategic plans	
<ul style="list-style-type: none"> What policies govern the operations of 	Agriculture Policy -ACT,	Policy documents	

<p>Veterinary services? (May be partly answered above)</p> <ul style="list-style-type: none"> Are the policy documents approved and in use? If not, what is the impact of the department operating without the stated policies? 	<p>Draft Livestock Development Policy -January 2012.</p> <p>-The document is still at consultative stage</p>		
<ul style="list-style-type: none"> What information is collected by the Ministry to aid disease control? What information does the Ministry prepare related to disease control? 	<p>Vet department collect information on disease through NALEIC and surveillance at camp level</p>	Relevant documents	
<ul style="list-style-type: none"> What is the reporting structure / hierarchy from the camp office through to headquarters? Does the current structure ensure that the Ministry receives disease control 	<p>-Camp- Vet Assistant</p> <p>-District- Livestock officer & Vet officer</p> <p>-Province-Senior Live stock officer &Senior Vet officer</p>		

<p>information timeously?</p> <ul style="list-style-type: none"> • If not, what is the ideal reporting structure? 	<p>-Head Quarters-</p> <p>Director, two Deputy , chief vet officer</p>		
<ul style="list-style-type: none"> • What does emergency preparedness encompass? What are the major activities involved? • How much is funded yearly? 2011- 2014 • Is it adequate? • What has been the impact of operating on an inadequately funded fund? 	<p>-Involves putting in place strategy in terms of planning, Resources,</p> <p>-Command chain for rapid response and at times conduct</p> <p>-simulation exercise</p>	<p>All relevant funding details</p>	
<ul style="list-style-type: none"> • How many veterinary camps do you have in the country? What is the size of the camps? How many officers are stationed at each camp? • Are the numbers of vet staff adequate? 	<p>-Vet department operates about 700 camps around the country</p> <p>-Their radius ranging from 20 to 100.</p> <p>-Mostly Vet Assistants at</p>	<p>All relevant details</p>	

<ul style="list-style-type: none"> Are the Vet officers trained? 	<p>certificate holders</p>		
<ul style="list-style-type: none"> Has Zambia signed any memorandum of understanding with other countries on disease control? Are there any memorandums that appear to be in conflict with Government policies? Provide details 	<p>-Disease control effect –with world bank</p> <p>-Technical Cooperation Programme- with FAO</p> <p>-Animal identification & traceability with the Italian</p> <p>-Vaccine production- with Russia</p> <p>Laboratory information – with the Italian</p>	<p>Relevant memorandums</p>	
<ul style="list-style-type: none"> Do you carry out livestock inspections? How many inspections are done yearly for the period under review? What reports are generated after 	<p>-This are incorporated in main activities like vaccinations.</p> <p>-Reports are generated and feedback given with recommendations</p>	<p>Relevant details and documents</p>	

inspections to camps? <ul style="list-style-type: none"> • How are animals identified in terms of cattle movement restrictions? • Are district brands available? • If yes, how many cattle have been branded? If not, why not? • What is the role of abattoirs in disease control? • Does the ministry compile reports from findings at abattoirs? • Does the Ministry have a comprehensive list of registered farmers country wide? 	-Branding being implemented in border towns e.g. Sesheke, Shang'ombo, mbala. -To help control diseases through regulated animal movement across borders -Abattoir reports only done in Mongu. there is no data or reports as there are no vet staff at abattoirs -Farmer register not in place. Registration of farmers is currently being implemented		
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<ul style="list-style-type: none"> Which provinces are disease prone? What are the reasons? 	<p>For CBPP</p> <p>Southern and western are the most prone</p>		
<ul style="list-style-type: none"> What is the role of quarantine facilities? How many do you have in the country? How many are functional? Are any reports generated by the facilities? 	<p>-Quarantine are designated for isolation of animals for purpose of observation on particular disease.</p> <p>-There about two facilities one at mwami and the other at simonga though they not operational.</p> <p>Otherwise in out-break cases vet officer do designate areas as quarantine stations</p>	Relevant reports	
<ul style="list-style-type: none"> Explain the role of laboratories in disease control? How many laboratories do you 	<p>Role of laboratories includes</p> <p>-Confirmation of diagnosis of</p>		

<p>have?</p> <ul style="list-style-type: none"> • What are the diagnostic capacities in each lab? • Are the laboratories manned by skilled personnel? • Are the labs adequately stocked at all times? • Are results of samples taken for testing released on time at all times? • If not, why not? 	<p>disease</p> <ul style="list-style-type: none"> -Certification of absence of disease in animals either movement of consumption -Labs are at two level -National or central and -Regional -Staffing at regional level is not adequate - Mostly labs lack equipment and reagents 		
<ul style="list-style-type: none"> • Explain the role of check points in disease control • How many check points do we have in the country? • How many officers are stationed at the 	<ul style="list-style-type: none"> -Check points help in stopping movement of animals or animal product from areas of infection to free zone. -Only animals or 	Relevant details	

<p>check points?</p> <ul style="list-style-type: none"> • Are they trained? • How many should be there? • How are illegal livestock movements controlled? • What reports are generated by check point officers? 	<p>animal products with certification are allowed to go through</p> <p>-A few check points have vet representation i.e. Lusaka international airport, kafue and Luangwa</p> <p>-The department structure does not provide for staff to man check points</p>		
<ul style="list-style-type: none"> • Are farmers sensitised on the need to control management diseases ? • Are farmers able to control management diseases effectively? If not, what are the reasons? • Are there any management diseases that you feel should 	<p>- Sensitisation of farmers is done through supervisory visits by camp vet Assistants</p> <p>-Currently there is no disease that</p>		

be reclassified as diseases of economic importance? Give reasons	can be reclassified rabies and ECF simply needs adequate management		
Has the country ever experienced a livestock ban from neighbouring countries? If yes, which periods and which countries imposed the ban? What were the impacts on trade in the country? Was the loss quantifiable? If yes, provide details of loss.		Relevant reports	
<ul style="list-style-type: none"> Is there adequate transport to efficiently deliver vet services? How many vehicles per provincial, district and camp office? Do you have a 	Transport is generally inadequate		

regular vehicle maintenance schedule?			
<ul style="list-style-type: none"> Does the Ministry take punitive action against contravening farmers? Provide details 			
<ul style="list-style-type: none"> In your opinion, are there certain provisions of the law and /or policies that you would like to see changed? Specify giving reasons 			

PROVINCIAL AND DISTRICT OFFICES QUESTIONNAIRE

Question	Response	Documents required	Comment by Auditor
<ul style="list-style-type: none"> What guidelines and regulations 		Relevant guiding documents	

does the province use to manage livestock diseases?			
<ul style="list-style-type: none"> How many livestock are in the province 		Year by year livestock figures	
<ul style="list-style-type: none"> What is the general disease pattern in the province? Which diseases are more prevalent? 			
<ul style="list-style-type: none"> How often are annual reports submitted to the Province by districts How often are quarterly and other epidemiologic al reports 		<p>All annual reports for 2011-2013</p> <p>All quarterly and epidemiological reports for audit period</p>	

submitted?			
<ul style="list-style-type: none"> What actions are sanctioned when it is reported that there are LD outbreaks 		Action Reports generated	
<ul style="list-style-type: none"> How many serious outbreaks have there been in the province in the period under review Are laboratory results timely? What was the cost of containing the outbreak What were the reasons for the outbreak? 		Relevant documents including lab request sample forms and matching results slips	

<ul style="list-style-type: none"> • How many dip tanks, laboratories, quarantine facilities, check points and crush pens are in the province? • How many are functional? 		<ul style="list-style-type: none"> • List of all required data compiled in table form • 	
<ul style="list-style-type: none"> • What role do check points play in disease control 		<ul style="list-style-type: none"> • Record of all stock permits issued in period under review 	
<ul style="list-style-type: none"> • Does the province conduct disease sensitisation programmes? • If yes, how often are they conducted? If not, why not? 		<ul style="list-style-type: none"> • Records of sensitisation programs 	

Camp

<ul style="list-style-type: none"> • How many vet officers man the camp? • How many would be adequate? 			
<ul style="list-style-type: none"> • What information does the camp submit to the Ministry? 			
<ul style="list-style-type: none"> • What is the camp size? 			
<ul style="list-style-type: none"> • How many farmers are under your camp? • How many households are registered in this camp 		Camp stock register	
<ul style="list-style-type: none"> • How many livestock are in this camp 			

<ul style="list-style-type: none"> • How many crush pens, dip tanks and other infrastructure are in the camp? • Are they adequate? 			
<ul style="list-style-type: none"> • Does the Ministry monitor your operations? • How often do they monitor? • Are any recommendations for improvement made? 		Relevant details	
<ul style="list-style-type: none"> • How do you notify the Ministry when there is a disease outbreak? 			

<ul style="list-style-type: none"> • What immediate measures are taken to prevent further disease spread? 			
<ul style="list-style-type: none"> • What is the schedule for vaccinations and vector control activities? • Is the schedule followed? • How often are vaccinations and vector control activities carried out? 			
<ul style="list-style-type: none"> • Do all farmers bring their livestock for vaccinations 			

<p>when requested?</p> <ul style="list-style-type: none"> • Are you able to tell which animals have not been brought for vaccinations? • What follow up action is taken in such cases? 			

Laboratory

<ul style="list-style-type: none"> • What is the role of the lab in disease control? 	<p>The role of central lab include;</p> <ul style="list-style-type: none"> -Diagnostic and Research -early disease detection, screening sample and giving feedback/reports -vaccine production for animal diseases for disease like Newcastle, 		
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	rabies and black leg -		
<ul style="list-style-type: none"> How many samples have been analysed during period under review? How are results communicated? What is the length of time between receipt of samples and results communication? 		Relevant details including results slips	
<ul style="list-style-type: none"> Is the lab adequately stocked particularly for emergency cases? If not, provide further details 	-Labs not adequately equipped, - mostly they lack essential reagents, partly caused by delay in the tendering process	Stock sheets	
<ul style="list-style-type: none"> Is the lab adequately staffed with 	All the regional labs are understaffed.		

skilled staff?			
<ul style="list-style-type: none"> Any other challenges? 	<p>-Structure is inadequately to support operations (following the freezing of some post)</p> <p>-Central Veterinary Research Institute headed by subordinate hence lacking representation at higher management level</p> <p>-delays in procurement process with time lag of four to six months</p>		

Farmers

<ul style="list-style-type: none"> What are your names? 				
<ul style="list-style-type: none"> How many livestock do you have? 				
<ul style="list-style-type: none"> How is Government assisting 				

you to fight livestock diseases?				
<ul style="list-style-type: none"> How would you like Government to assist you further? 				
<ul style="list-style-type: none"> How often are your livestock vaccinated? 				
<ul style="list-style-type: none"> Are you able to procure necessary vaccines at reasonable cost? 				
<ul style="list-style-type: none"> How 				

<p>often does the camp officer visit your camp</p> <ul style="list-style-type: none"> Does the camp officer sensitise you on the importan ce of vaccinati ons and animal heath in general? 				
<ul style="list-style-type: none"> Have you ever reported a disease outbreak in your kraal? What was the 				

response time? • What action was taken to avoid further spread of the disease?				
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Check points

• What activities take place at the check point?		Relevant reports submitted to the Ministry	
• Do all livestock transporters produce livestock movement permits? If not, what action is taken?		Sample permits	
• How many officers are			

stationed here? Is the number adequate?			
<ul style="list-style-type: none"> How do you collaborate with the MOH at checkpoints? 			

Quarantine Facilities

<ul style="list-style-type: none"> What is the role of quarantine facilities? 			
<ul style="list-style-type: none"> What activities take place at a quarantine facility? Is there adequate supporting infrastructure at the facility? 			
<ul style="list-style-type: none"> What reports are generated by quarantine 		Relevant reports	

facilities?			
<ul style="list-style-type: none"> How often are reports submitted? 			
<ul style="list-style-type: none"> Does the Ministry monitor your activities? If yes, how often? 			