



**Sessional Paper No. 2 of 2020 on the
Veterinary Policy**

2020



REPUBLIC OF KENYA



MINISTRY OF AGRICULTURE, LIVESTOCK,
FISHERIES AND COOPERATIVES

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FOREWORD

The Veterinary Policy is provided for in the Fourth Schedule of the Constitution of Kenya. This Policy aligns interventions in the animal resource industry through animal health, production, welfare, food safety and trade to the Constitution as well as the Kenya Vision 2030, Sustainable Development Goals and international animal health and food safety treaties, agreements and conventions ratified by Kenya. The global overarching treaty is the World Trade Organisation Agreement and in particular the Application of Sanitary and Phytosanitary (SPS) Protocol, measures which Kenya ratified on 23rd December, 1994 and came into effect on 1st January, 1995. Regionally, Kenya ratified the domesticated East African Community (EAC) SPS Protocol on 29th June 2016. Regionally, the Policy recognises that Kenya is a member of the African Union, Common Market for East and Southern Africa, the East African Community and the Inter-Governmental Authority on Development and therefore harmonises with the relevant provisions of the constitutive treaties of these Regional Economic blocks.

Development and growth of the animal resource industries has hitherto relied on multiple policy frameworks such as the; Kenya Vision 2030, National Livestock Policy, Fisheries Policy, Wildlife Policy, Agricultural Sector Development Strategy, and livestock commodity based policies among others. However, animal resources are varied and their functions straddle different agencies, institutions and departments. There are four broad functional domains of veterinary services within livestock, fisheries, companion animals and wildlife. These domains have different governance and institutional arrangements. Aspects of human, animal and environmental health require cooperation across departments or agencies. The Veterinary Policy creates operational linkages among various institutions while recognising and preserving their functional specialties.

This Policy specifies key challenges facing the animal resource industries and provides direction in addressing each of them. It focuses on coherent implementation of objectives leading to realisation of goals in the animal resource industries through interventions in animal health, production, welfare, food safety and trade. The Policy takes into account the constitutional obligations of the national and county governments, with regard to development of animal resources. It also outlines functional relationships between the two levels of government. It identifies major institutions in the animal resource industries as well as

collaborating organisations and provides mechanisms of linkages for efficient and effective delivery of services.

The Veterinary Policy was formulated through extensive sector and countrywide consultations, including a national stakeholders' forum. Its implementation is expected to contribute to better livelihoods and greater economic development in Kenya.

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HON. PETER G. MUNYA, M.C.H.

Cabinet Secretary,

Ministry of Agriculture Livestock Fisheries and Co-operatives

PREFACE

Effective delivery of veterinary services alongside other public and private sector services are very critical in the implementation of this Policy. This Policy utilizes a sanitary approach in addressing challenges in the animal resources industries consisting of companion animals, livestock, aquatic and wild animals. Due to globalization, exchange of goods has increased rapidly in the recent years and national economies are much more dependent on the global market trends. Sanitary and commercial challenges related to international trade have become crucial for many nations calling for urgent upgrading of veterinary services to cope with the emerging challenges.

Growing populations, increased urbanization, improved living standards and the emergence of the middle class, have led to increased demand for animal products. The public also has higher demands for quality and safe food to which veterinary services are called upon to respond. The One Health concept is now unanimously considered as the most appropriate way to approach issues like zoonoses, ecosystem health, and food safety. This concept also calls for an increased role of veterinary services in public health and environmental management. Veterinary services should be able to ensure effective prevention and control of transboundary animal diseases and zoonoses; contribute to food security and safety; contribute to environmental health and promote intra and international trade.

The availability and quality of animal health services is unlikely to improve unless public sector performance is strengthened. There is therefore need to focus on this is an area of intervention that has received little attention previously. The Kenyan economy has been growing over the last 15 years and consequently the capacity of the country to invest their own resources in public services and infrastructure has increased. However, public investment in veterinary services has remained too low to achieve the desired socio economic growth. Investment in veterinary services and veterinary governance in particular can generate substantial benefits from animal resources in all categories.

Generating evidence and data on socio economic issues that provide returns on investments in veterinary services are among the priorities for Kenya and other African Countries. It is of great importance to establish efficient and harmonized methodological tools to support veterinary governance in Kenya such as the World Animal Health Organization (OIE) tool on the Performance of Veterinary Services (PVS) pathway that is widely recognized as the global “standard” toolkit for evaluating

the veterinary services. This is essential for planning in the country under the devolved system of government which further informs resource allocation. The Veterinary Policy will serve as a catalyst for development of the animal resources across the sectors of livestock, companion animals, aquatic and wild animals.

A handwritten signature in black ink, appearing to read 'H. Kimtai', with a large, stylized initial 'H'.

MR. HARRY K. KIMTAI, C.B.S.
Principal Secretary,
State Department for Livestock.

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EXECUTIVE SUMMARY

The Veterinary Policy provides a roadmap for the development of animal resources in Kenya through observation of sanitary measures. Animal resource categories in Kenya include livestock, wildlife, farmed wildlife, companion and aquatic animal species and bees. The animal resources listed above are very critical to rural livelihoods and the national economy considering that they directly and indirectly contribute over 22 per cent of the National Gross Domestic Product (GDP).

This Policy addresses animal health production & welfare, food safety and trade among other concerns in livestock, wildlife, aquatic and companion animals. Animal health services are integral to the prevention, control and eradication of animal diseases that occasion huge economic losses and adversely impact livelihoods. The health of animals is among the leading priorities in animal productivity and at all stages of production must be guaranteed. Due to inadequate focus on animal health, enterprises involving food animals have low returns on investment resulting in high poverty levels in animal producing areas.

Trade in animals and animal products require conformity to prescribed veterinary related standards and application of sanitary measures that follow a farm to fork continuum. Appropriate infrastructure is necessary for optimum animal production and trade. This includes suitable establishments, premises, animal inspection and disease management structures, laboratories, value addition and marketing facilities.

Provision of animal welfare is central to physical and psychological wellbeing of animals, animal health and production and manifests in better performance, improved market access, safe and mutually beneficial companionship. Animal health services are highly dependent on appropriate use of veterinary pharmaceuticals that require effective regulation to prevent misuse which poses a threat to animal welfare and human health.

Veterinary Public Health (VPH) is an essential part of public health that links people, animals and environment. VPH guarantees safety of foods of animal origin. Human health is closely related to animal health with many diseases that affect human beings originating from animals. Optimal human health is one of the essential considerations for sustainable economic development. The “One Health Approach” is based on the realisation that diseases that adversely impact the health of humans, animals and the environment can be successfully addressed through collaboration across disciplines and institutions.

Animal health, production, welfare, food safety and research programmes embrace multidisciplinary approaches and integrate education and extension. These programmes are continually changing to respond to emerging challenges and opportunities brought about by rapidly advancing technologies, evolving consumer demands and the need to make positive contributions to human, animal and environmental health. Efficient demand driven animal research translates into affordable and high quality food for the nation, better livelihoods and economic gain that are critical considerations in this Policy.

These resources provide household food and other livelihoods support. Some of the challenges that limit progress of animal resources through the respective industries are: a weak animal disease management capacity, poor infrastructure for animal health and production, limited value addition to products before marketing, underdeveloped marketing systems, low compliance with sanitary measures, low animal productivity, effects of climate change, underfunding and understaffing of its institutions.

The Veterinary Policy outlines interventions, practices, processes, guidelines and proposals to counteract these challenges and position the animal resource industries as one of the leading contributors to national wealth. It recognises land as a critical factor in animal production and recommends appropriate land use systems. It advocates for gender parity in accessing factors of animal production and aims at correcting the imbalance in provision of labour in the Livestock Sector. It recommends training of the youth to ensure a seamless transition from the ageing animal keepers.

The Policy identifies institutions that will act independently or collectively to deliver animal health production & welfare and food safety services in the respective industry value chains within animal resources. It provides a framework for linkages, collaboration and public private partnerships that will enhance synergy among various actors to develop, protect and conserve animal resources for the benefit of human beings.

Veterinary Services are classified as a global public good for which the Veterinary Authority takes primary responsibility with regard to good governance and service delivery in accordance with national and international standards and public expectations. The governance must be within an effective and structured national legislative framework supported by appropriate financial and human resources. The Policy has

addressed the weaknesses identified in the delivery of Veterinary Services Assessment Report.

The Veterinary Policy provides a basis for the review and consolidation of laws and enactment of new ones for the better governance of the animal resource industries. It is structured into four main chapters consisting of introduction; challenges, objectives and principles; policy statements proposing interventions and an implementation framework. Its funding will be sourced from the national and county governments, the private sector and development partners. Its implementation shall be regularly monitored and evaluated. It will be reviewed periodically to take into consideration emerging trends in the animal resource industries.

ACRONYMS

AgGDP	Agricultural Gross Domestic Product
AHITI	Animal Health and Industry Training Institute
AI	Artificial Insemination
AIDS	Acquired Immune Deficiency Syndrome
ASALs	Arid and Semi-Arid Lands
ASTGS	Agriculture Sector Transformation and Growth Strategy
AU	African Union
BSE	Bovine Spongiform Encephalitis (“Mad Cow Disease”)
CADDP	Comprehensive Africa Agriculture Development Programme
CAC	Codex Alimentarius Commission
CBO	Community Based Organisation
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
CEWARN	Conflict Early Warning Mechanism
COMESA	Common Market for Eastern and Southern Africa
DFZs	Disease Free Zones
EAC	East Africa Community
EU	European Union
FAO	Food and Agriculture Organisation
FMD	Foot and Mouth Disease
GDP	Gross Domestic Product
GF-TAD	Global Framework for the Progressive Control of TADS
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GMO	Genetically Modified Organisms
HIV	Human Immunodeficiency Virus
HPAI	Highly Pathogenic Avian Influenza
IBAR	Inter-African Bureau for Animal Resources
IBD	Infectious Bursal Disease (Gumboro)
ICPAC	IGAD Centre for Climate Prediction and Application

ICPALD	IGAD Centre for Pastoral Areas and Livestock Development
IGAD	Intergovernmental Authority on Development
IPPC	International Plant Protection Convention
KAGRC	Kenya Animal Genetics Resource Centre
KALRO	Kenya Agricultural and Livestock Research Organisation
KARI	Kenya Agricultural Research Institute
KDB	Kenya Dairy Board
KEBS	Kenya Bureau of Standards
KENTTEC	Kenya Tsetse and Trypanosomiasis Eradication Council
KEPHIS	Kenya Plant Health Inspectorate Service
KETRI	Kenya Trypanosomiasis Research Institute
KEVEVAPI	Kenya Veterinary Vaccines Production Institute
KFS	Kenya Forestry Service
KLFT	Kenya Livestock Finance Trust
KMC	Kenya Meat Commission
KNBS	Kenya National Bureau of Statistics
KVB	Kenya Veterinary Board
KWS	Kenya Wildlife Service
LiDeSA	Livestock Development Strategy for Africa
LPI	Livestock Policy Initiative
LSD	Lumpy Skin Disease
MALF&I	Ministry of Agriculture, Livestock, Fisheries and Irrigation
MT	Metric Tons
NEMA	National Environment Management Authority
NGO	Non-Governmental Organisation
NVRC	National Veterinary Research Centre
OIE	World Organisation for Animal Health
PANVAC	Panafrican Veterinary Vaccine Center

PATTEC	Panafrican Tsetse and Trypanosomiasis Eradication Campaign
PPR	Peste des Petits Ruminants
PVS	Performance of Veterinary Services
RVF	Rift Valley Fever
SAPS	Structural Adjustment Programmes
SGP	Sheep and Goat Pox
SPS	Sanitary and Phytosanitary
TADs	Transboundary Animal Diseases
VPH	Veterinary Public Health
WHO	World Health Organisation
WTO	World Trade Organisation

CHAPTER ONE : INTRODUCTION

This Section covers the Background to the Scope of the Policy ; the Policy focus in unbundling of the Constitutional provisions ; the Policy in respect of the International Organizations; the Policy as pertains the Global Standard Setting Organizations ; how the Policy implements the Vision 2030; and the Situational Analysis of the sectors within the Animal Resources.

1.1. BACKGROUND

Animal resources in Kenya include livestock, wildlife, farmed wildlife, companion and aquatic animal species. The animal resource industries are very critical to many rural livelihoods and the national economy as it contributes 22 per cent of the National Gross Domestic Product (GDP), (Behnke, 2011). Growth in Agriculture Value Added at constant prices increased to 6.6 per cent in 2018 from 1.8 per cent recorded in 2017 due to favourable weather conditions. The value of marketed livestock and livestock products increased by 8.3 per cent to KSh. 146.8 billion in 2018 accounting for about 30% of marketed agricultural products (KNBS, 2019).

The quantities of milk delivered to the dairy processors increased by 18.4 per cent from 535.7 million litres in 2017 to 634.3 million litres in 2018. Quantities of milk and cream processed also recorded an increase of 10.6 per cent from 410.6 million litres in 2017 to 454.1 million litres in 2018 (KNBS, 2019)

According to a study by the Intergovernmental Authority on Development (IGAD) and Kenya Bureau of Statistics in 2011, livestock's contribution to Kenyan GDP was more than two and a half times the official estimate for 2009, the most recent year for which there was complete livestock data as documented in the Livestock Policy Initiative (LPI) Publications. This increase over official estimates means that the livestock contribution to AgGDP was only slightly less than that of crops and horticulture, about 4.54 billion US dollars for livestock in 2009 versus 5.25 billion US dollars for arable agriculture, (IGAD LPI, 2013). The understating of the contribution of livestock and other animal resources to the national GDP continues to date due to inadequate data .

The Livestock Sector employs 50 per cent of the agricultural labour force. More than 10 million Kenyans living in the Arid and Semi Arid Lands (ASALs) derive their livelihood largely from livestock. About 60 per cent of the country's livestock herd is found in the ASALs. Livestock and wildlife grazing continues to be the dominant land use mode in the

rangelands. The rangelands are home to most wildlife species with their numbers in 2014 estimated at 9,812,000. Wildlife is the main tourist attraction that supports the tourism industry in addition to improving ecological balance in the rangelands. Kenya's fisheries sub sector is mainly composed of freshwater (lakes, rivers and dams) and marine (Indian Ocean) sources with the rest coming from aquaculture. Total quantity of fish landed increased from 135.1 thousands tonnes in 2017 to 148.3 thousands tonnes in 2018 (KNBS, 2019). The Sector contributes about 0.5 per cent of the country's National GDP and 1 per cent of AgGDP, (KNBS, 2019).

Kenya's landmass is 582,650 square kilometers. The ASALs constitute about 80 per cent of the land mass which mainly support many species and breeds of domestic animals and natural game. The ASALs support a majority of the national parks and game reserves and hold game animals outside protected areas. Despite being the areas where livelihoods are almost entirely dependent on animal resources, the animal resource industries infrastructure in the ASALs is underdeveloped, run down and affected by insecurity. The remaining 20 per cent of Kenya's landmass is suitable for rain fed crop and animal agriculture and holds the national herd of most dairy cattle among other animal species. The country has several lakes and rivers as well as two hundred nautical miles of coastline that is suitable for aquatic animals.

The country is famous for her abundant game animals that attract tourists earning foreign exchange that runs other sectors of the economy. Wild animals and farmed wildlife are part of the country's biodiversity that constitute a significant component of research in animal and human health. Animal resources are a source of wealth, food, companionship, power for work, manure, ornaments and they are used in security services and sporting activities among other areas. Virtually every household in the rural areas owns an animal of one species or the other. Livestock are among the few assets owned by women and the marginalized segments of the population.

Various aspects of animal resources are managed by different agencies, institutions and departments in the devolved system of government. The Veterinary Policy provides synergy, rhythm and focus among the many players in the animal resource industries as they perform tasks for which they are professionally and legally best suited. The Policy builds linkages and provides mechanisms for liaison with international and local organisations and institutions whose functions directly or indirectly impact the animal resource industries. It is aligned to the Constitution,

the Kenya Vision 2030, provisions of global veterinary standard setting organisations and requirements of continental and regional economic communities for trade in animals and animal products.

1.2. VETERINARY POLICY IN THE CONTEXT OF THE CONSTITUTION

Veterinary Policy is a Constitutional requirement provided for under the Fourth Schedule. The Constitution assures Kenyans in Article 43 (c) under the Bill of Rights “to be free from hunger and to have adequate food of acceptable quality”; protection for human health and attainment of the highest standard of health. It guarantees consumers of goods and services of reasonable quality and access to information necessary for them to gain full benefit for the protection of their health, safety and economic interests. The Policy provides a means through which interventions in veterinary services within the animal resources industries will support: international trade; consumer and environmental protection; national economic policy and planning; national statistics and data on the population of animal resources; sustainable development and utilization of animal resources including protection of domestic animals and wildlife as envisaged in the Constitution.

The Constitution assigns Veterinary Policy and regulatory functions related to animal health, production, welfare, food safety and international trade to the national government and devolves specified functions in the animal resource industries to the county governments while stipulating that the two levels of government shall conduct their roles on the basis of consultation and cooperation. It recognises that Kenya is a member of the international community that plays her rightful roles in international human, security and trade relations. It upholds the principle of international law and recognises all the treaties, conventions, protocols and agreements ratified by Kenya as part of the laws of Kenya. Chief among such supranational laws are the Treaty for the Establishment of the East African Community (EAC), the Constitutive Act of the African Union, the United Nations Charter and the World Trade Organisation (WTO) relevant agreements. Of particular relevance to animal health, welfare and production is the WTO Agreement on the Application of Sanitary and Phytosanitary (SPS) measures which Kenya ratified in 1994 and later the EAC SPC Protocol ratified in 2016 which governs international trade of animals and animal products with the relevant attendant international standards.

1.3. VETERINARY POLICY IN THE CONTEXT OF KENYA VISION 2030 AND MEDIUM TERM PLANS

The Vision 2030 aims at transforming Kenya into “a newly industrialising, middle income country providing a high quality of life to all its citizens in a clean and secure environment by 2030 ”. To achieve this goal in regard to the animal resource industries, the Vision has identified five key strategic thrusts namely: transforming key institutions in livestock and wildlife among others to promote growth; increasing productivity of livestock, crops and forests through provision of widely accessible inputs and services to farmers and pastoralists; transforming land use to ensure better utilisation of high and medium potential lands; developing ASALs for crop and livestock production and increasing market access through value addition by processing, packaging and branding. The Vision is implemented through Medium Term Plans and identifies Disease Free Zones as one of its key flagship projects. The Veterinary Policy supports the realisation of these strategic thrusts in the framework of the third Medium Term Plan 2018 - 2022 and beyond.

1.4. VETERINARY POLICY IN THE CONTEXT OF THE GLOBAL STANDARD SETTING ORGANISATIONS

Veterinary Services are classified as global public goods that are governed in accordance with national and international standards and public expectations. The key international standard setting organisations for veterinary services include: the WTO, the World Organisation for Animal Health (OIE) and the Codex Alimentarius Commission (CAC). Kenya is a member of these organisations and has ratified the relevant agreements, treaties , conventions and protocols. The country is not only expected to comply with the international standards but also to participate in setting the standards.

1.4.1. World Trade Organisation

The World Trade Organisation oversees trade among Member States and acts as a forum for governments to negotiate trade agreements and settle trade disputes under a system of rules and procedures. Its aim is to increase world trade by lowering barriers to international sale of goods and services, including intellectual property. In regard to trade in animals and animal products, WTO in addition to its other treaties and agreements provides for the Sanitary and Phytosanitary (SPS) Protocol that governs animal health & welfare and food safety in international trade. Sanitary measures relate to human or animal health while phytosanitary measures apply to plant health. The SPS Agreement

recognises WTO members' rights to protect human, animal or plant life or health, provided that certain requirements are met. The key requirements are that SPS measures must be science based; not more trade restrictive than required; not arbitrarily or unjustifiably discriminative and must not constitute a disguised restriction on international trade. The SPS Protocol applies trade measures in animal health, food safety and plant health that are based on standards developed by OIE, Codex Alimentarius Commission (CAC) and the International Plant Protection Convention (IPPC) respectively.

1.4.2. World Organisation for Animal Health

The World Organisation for Animal Health / Office International des Epizooties (OIE) was created in 1924 and currently has a membership of 182 countries. It periodically publishes the Terrestrial Animal Health Code, Aquatic Health Code, Terrestrial Manual and the Aquatic Manual. These publications outline international standards and guidelines for improvement of animal health and welfare, veterinary public health and safe trade in all animals and animal products that include fish and other aquatic life, wild and domestic animals. The OIE greatly contributes to the management of animal diseases at the global level. It collects and disseminates information on the occurrence and distribution of animal diseases worldwide.

1.4.3. Codex Alimentarius Commission

The Codex Alimentarius Commission administers the Joint Food Standards Programme of the Food and Agriculture Organisation (FAO) and the World Health Organization (WHO) both of the United Nations for protection of public health and ensuring fair practices in international food trade. It develops and encourages implementation of standards, codes of practice, guidelines and recommendations covering all aspects of food and feed safety, including handling and distribution. It utilizes the IPPC and OIE provisions to guarantee food safety. Harmonisation of food regulations and standards worldwide reduces barriers to trade and promotes faster movement of food products among countries. This reduces hunger and poverty while providing benefits to consumers.

1.4.4. International Plant Protection Convention

Animals depend on plants directly or indirectly for their nutrition and health hence the Veterinary Policy recognises the phytosanitary measures as provided by the IPPC and locally the Kenya Plant Health and Inspectorate Service (KEPHIS). The IPPC is a multilateral treaty for international cooperation in protection of plant health. It primarily

focuses on the movement of plants and plant products in international trade and research materials, biological control organisms, germplasm banks, containment facilities, food aid, emergency aid and anything that can act as a vector for the spread of plant pests, including containers, packaging materials, soil, vehicles, vessels and machinery.

1.5. VETERINARY POLICY IN THE CONTEXT OF INTERNATIONAL AND REGIONAL ORGANISATIONS

International and regional organizations of note include the Food and Agriculture Organisation of the United Nations; African Union (AU); AU- InterAfrican Bureau for Animal Resources; Inter-Governmental Authority on Development; East African Community; the Common Markets for Southern and Eastern Africa and the African Continental Free Trade Area .

1.5.1. Food and Agriculture Organisation of the United Nations

Veterinary services are essential to food and nutrition security that is a key mandate of the Food and Agriculture Organisation (FAO) of the United Nations, consequently, the Policy recognises and utilises FAO provisions and recommendations in this regard. FAO has three main goals: eradication of hunger, food insecurity and malnutrition; elimination of poverty and driving forward of economic and social progress for all; sustainable management and utilisation of natural resources, including land, water, air, climate and genetic resources for the benefit of present and future generations.

FAO's mandate consists of four interventions: information gathering and dissemination; formulation of policy recommendations; provision of technical assistance and assistance to governments with FAO related obligations. These functions help in: eliminating hunger, food insecurity and malnutrition; making agriculture more productive and sustainable; reducing rural poverty; ensuring inclusive and efficient agricultural and food systems and protecting livelihoods from disasters.

The Global Framework for the progressive control of Transboundary Animal Diseases (GF-TAD) is a joint FAO and OIE initiative which provides for capacity building and assists in developing global strategies and programmes for the control of priority Transboundary Animal Diseases (TADs).

1.5.2. African Union

The African Union (AU) seeks primarily to improve the quality of life of the continent's citizens through integration, cooperation and

development. The following institutions within the AU carry out activities that are relevant to the Veterinary Policy:

1. Interafrican Bureau for Animal Resources (IBAR) is a specialized technical office of the AU in charge of animal resources headquartered in Nairobi. AU-IBAR's mandate is to coordinate the management of animal resources in the continent, including veterinary aspects thereof. It provides guidance to Members on policy formulation and develops continental strategic frameworks for control of major animal diseases among other components of development of animal resources. It also coordinates and supports the participation of countries in standard setting, implements regional and continental programmes addressing transboundary and policy aspects of animals and coordinates the control of major TADs in Africa.
2. Panafriean Veterinary Vaccine Center (PANVAC) is a specialized technical office of the AU in charge of veterinary vaccine quality control and capacity building of national laboratories.
3. Panafriean Tsetse and Trypanosomiasis Eradication Campaign (PATTEC) is a technical office in charge of controlling Tsetse and Trypanosomiasis in the continent.

One of the main programmes currently going on under the AU is the Comprehensive Africa Agriculture Development Programme (CAADP) that is helping African countries reach a higher rate of economic growth through agriculture led development. CAADP aims at eliminating hunger, reducing poverty and food insecurity and expanding exports. For the animal resources industries, CAADP provides guidelines that target enhancing governance of animal health services which include: advocacy and awareness raising for institutional changes in the Livestock Sector; capacity building for policy analysis and formulation, strategy and priority development; capacity building for legislation reforms; investment in generation of data, information and knowledge, including livestock disease monitoring and reporting; investment in institutional changes and processes and investment in biotechnology.

Some suggested interventions include: development of practical technologies for controlling animal diseases that limit livestock productivity; devising better means to control parasitic and vector borne diseases such as Trypanosomosis, Theileriosis, and Heartwater; the identification and utilisation of sources of genetic resistance to diseases

and parasites in livestock; development of animal health technologies appropriate for African conditions such as thermostable vaccines, pen-side diagnostic tests and slow release pharmaceuticals; design of sustainable and appropriate animal health delivery systems; development of management strategies and control measures for diseases of intensification; animal genetic resources; molecular genetics of resistance to diseases and parasites and adaptation to environmental stress (AU-IBAR, 2016).

Under the Agenda 2063 that incorporates a strategy for the realization of the African Union Vision of “An Integrated, prosperous and peaceful Africa, driven by its own citizens and representing a dynamic force in the global arena”, Africa is relentlessly exerting concerted efforts towards economic transformation and achievement of sustainable food and nutrition security within the Continental Free Trade Area.

1.5.3 Regional Economic Communities

Kenya is a member of Regional Economic Communities that include the EAC, the Inter-Governmental Authority on Development (IGAD) and the Common Market for Eastern and Southern Africa (COMESA).

1.5.3.1 East African Community

The overall objective of East African Community (EAC) in the Agricultural Sector, to which most animal resources belong, is the achievement of food security and rational agricultural production within the Community. The Partner States undertake to adopt a scheme for rationalization of production in agriculture to promote complementarity, specialization and sustainability of national agricultural programmes. This is expected to ensure food sufficiency within the Community and increase production of livestock and fisheries for domestic consumption, export within and outside the Community and as inputs to agro based industries within the Community. The EAC Livestock Policy, among other issues, focuses on the control of TADs. In the past, the region has recorded occurrences of Foot and Mouth Disease (FMD), Contagious Bovine Pleuropneumonia (CBPP), Peste des Petits Ruminants (PPR), Rift Valley Fever (RVF), Brucellosis, Sheep and Goat Pox (SGP), Lumpy Skin Disease (LSD) and Contagious Caprine Pleuropneumonia (CCPP) among others. The EAC has established an EAC Regional Steering Committee on TADs as part of its efforts to address these diseases. In order to harmonize and improve coordination of disease prevention and control, the Steering and Technical Management Committee on Disease Control have drafted the EAC Strategy on Transboundary Disease

Control and Zoonosis and an EAC Disease Control Strategy. The emphasis is on early detection and early response to disease situations and the need for “One Health Approach”.

1.5.3.2 InterGovernmental Authority on Development

The InterGovernmental Authority on Development (IGAD) Agreement commits Member States to: harmonisation of policies with regard to trade, customs, transport, communications, agriculture and natural resources and promotion of free movement of people, goods and services; achievement of regional food security; collective combating of drought and other natural and manmade disasters; facilitation, promotion and strengthening of cooperation in research, development and application in the fields of science and technology. The Authority implements regional programmes in the Livestock Sector including; policy guidance, surveillance of TADs and animal disease control. The latter is done through IGAD satellite organs namely: (i) IGAD Centre for Pastoral Areas and Livestock Development (ICPALD) (ii) Conflict Early Warning Mechanism (CEWARN) and (iii) IGAD Centre for Climate Prediction and Application (ICPAC).

The IGAD Agreement binds Member States to: develop and enhance cooperation and coordination of their macroeconomic policies in the areas of sustainable development in agriculture and food security; improve the handling and analysis of data in agro meteorology and climatology, nutrition, social and economic indicators and establish a strong food information system. Member States undertook to coordinate and strengthen effective mechanisms for: monitoring and controlling migrant pests; managing spread of animal and plant diseases and pests; cooperation in improving their capacity in agricultural research, training and extension services.

1.5.3.3 Common Market for Eastern and Southern Africa

The Common Market for Eastern and Southern Africa (COMESA) is a trading block comprising of 19 Member States. Its overall objective in the Agricultural Sector is to achieve regional food security and rational agricultural production within the Common Market. It seeks to achieve this objective by, among others, ensuring an increase in the productivity of livestock and fisheries for domestic consumption and export within and outside the Common Market; fostering cooperation in the control of animal and plant diseases and pests; the marketing and stabilization of prices of agricultural commodities bearing in mind internal agricultural and exchange rate policies in individual member countries and

coordination of policies relating to the export of crops, livestock, livestock products, fish and fish products and forest products.

The COMESA Livestock Policy Framework seeks to create an enabling environment for the attainment of the Livestock Development Strategy for Africa (LiDeSA) and has the following strategic objectives: attract public and private investments along the different livestock value chains; enhance animal health and increase production; productivity and resilience of livestock production systems; enhance innovation, generation and utilisation of technologies, capacities and entrepreneurship skills of livestock value chain actors; and enhance access to markets, services and value addition.

1.5.3.4 African Continental Free Trade Area

The African Continental Free Trade Area (AfCFTA), is an the agreement, that aims at creating a single continental market for goods and services in member nations of the African Union, with free movement of persons and investments using a single currency. The scope of the treaty covers agreements on trade in goods, services, investment, rules and procedures on dispute settlement, including a range of provisions to facilitate trade, reduce transaction costs, provide exceptions, flexibilities and safeguards for vulnerable groups and countries in challenging circumstances. The Treaty aims at taking advantage of 1.2 billion population of the continent with a combined Gross Domestic Product of more than \$2 trillion to create a single continental market for goods and services.

1.6 SITUATIONAL ANALYSIS

Realisation of optimal animal (domestic or wildlife) production and productivity potential, including the economic value, to a large extent is dependent on effective and efficient Veterinary Services. Veterinary Services can be classified as Public or Private Sector based. Under the Public Sector they will be further considered as National or County Veterinary Services. The Veterinary Services whether public, private, national or county will comprise of animal health, animal welfare, veterinary public health, animal breeding, quality assurance of animal and animal products and other support services.

1.6.1 Disease Control, Surveillance and Management

1.6.1.1 Disease Management

Disease management measures are provided for by legislation and professional requirements. These include disease investigation and

mapping, diagnostic services, inspection of animals and approval of premises like farms, hatcheries, breeding centres, quarantine stations, animal markets and sale yards; certification of animal products; approval of processing facilities and enforcement of disease control measures.

Disease detection and reporting is the responsibility of all animal value chain actors, however, the Veterinary Authority has the mandate of confirmatory disease diagnosis, notification and management. To enhance reporting and control of animal diseases, the government has declared certain diseases as notifiable based on the official OIE list and enacted legislation, the Animal Diseases Act, Cap 364 of the Laws of Kenya, to regulate their management.

Suspicion or confirmation of a notifiable disease should be reported to the respective County Director of Veterinary Services and the Director of Veterinary Services, who notify the public of the occurrence of the disease and the measures to control it. The Director of Veterinary Services, who is also the Kenyan delegate to the OIE, is obliged to report the occurrence of diseases to the OIE, AU-IBAR and trading partners at the earliest possible time. Public awareness on disease reporting is low implying that in some cases there is under reporting and delayed reporting, thus contributing to inadequate disease management and control. The magnitude of the negative impact resulting from previous outbreaks of Peste Petis Ruminante (PPR) and Rift Valley Fever (RVF) has been partly due to this factor.

The number of disease outbreaks reported in the last five years has shown mixed results in the gains made; the following disease recorded increases: FMD (25 per cent); CBPP (20per cent);PPR (100 per cent); LSD (100 per cent) and CCPP (70 per cent). The following recorded reduction over the same period Anthrax (31 per cent); Rabies (4 per cent); Fowl typhoid (50 per cent) and Infectious Bursal Disease 45 per cent (MoALF, 2015). These diseases have great adverse impact on livelihoods and trade and their management attracts international attention in terms of coordination, advocacy and formulation of control strategies.

Currently the only disease of economic importance that has been eradicated in Kenya is Rinderpest, largely through global concerted efforts. In 2009, the country received certification for Rinderpest freedom from the OIE. This progress has encouraged the development of strategies and contingency plans to control diseases . In this regard, the Foot and Mouth Disease , Rabies, Contagious Bovine Pleuro Pneumonia,

Rift Valley Fever, Highly Pathogenic Avian Influenza (HPAI) and PPR control strategies and contingency plans have been developed.

Vector control has received considerable attention as part of disease prevention strategy. Control of tsetse flies has largely been successful in the Lake Victoria Basin and the Meru-Mwea belt. However, the coastal region is still heavily infested with these pests. Tick borne diseases are controlled by different tick control measures including dipping and spraying . However, majority of the dips in the previously designated tick control areas are nonfunctional thus providing an opening for an upsurge of East Coast Fever, the most important tick borne disease in the country. The development of East Coast Fever vaccine (*Marekebuni*, 2005; *Muguga* cocktail, 2012) and subsequent approval of its use in areas affected by the disease is a significant step in the fight against tick borne diseases.

In addition to the notifiable diseases, there are other diseases of great economic importance such as Mastitis, Coccidiosis and other vector borne diseases and parasites that require effective control strategies. Apart from production losses associated with these diseases, they also increase the cost of livestock farming through purchase of drugs and other control remedies.

Aquatic animal health has not been given due priority administratively to enable the Competent Authority provide oversight and improve the capacity to undertake its full role in provision and regulation of aquatic animal health services. Notwithstanding this, the Veterinary Directorate is the authority responsible for export and import certification related to live fish and fish products. Fish viral, bacterial and parasitic diseases are frequently encountered and therefore there's a need to strengthen the capacity to address the challenges. Wildlife health needs are catered for through establishment of effective institutional structures and relevant partnerships.

1.6.1.2 Disease Free Zones

Disease Free Zones (DFZs) implemented through disease free compartments was conceived as a flagship program under the Kenya Vision 2030. A zone is declared disease free following official recognition by the OIE freedom from relevant diseases such as FMD, Bovine Spongiform Encephalitis (BSE) and CBPP. While creating DFZs in Kenya, seven other trade sensitive diseases including CCPP, RVF and PPR are targeted for control or total eradication.

Exports of livestock and livestock products to the lucrative markets have been affected by the country's inability to comply with animal health standards required for disease management and control for international trade. Nonetheless, the country is net exporter of live cattle while the main destinations are Uganda and Mauritius though considered non lucrative. The goal of the DFZs programme is to redeem the country's export status to better priced markets and contribute more towards poverty reduction and food security. The overall objective is to improve livelihoods and increase the livestock sub-sector's contribution to the national economy by promoting trade in livestock and livestock products through improvement of access to international markets.

The expected outputs of DFZs include: increased supply of quality meat by 48,000 MT for sale locally and for export; creation of more than 100,000 employment opportunities; reduction in human deaths arising from zoonoses; increased milk production for sale or household consumption by five million liters; increased hides and skins value and rangeland and environmental improvement of two million hectares a year.

The direct beneficiaries were expected to be livestock owners (pastoralists, agro pastoralists, ranchers, mixed farmers and dairy farmers), livestock traders, associated operators and chambers of commerce, public and private sector animal health service providers and community based organisations engaged in the livestock sector. The first of the DFZs under implementation was in the Bachuma Holding Ground in Taita Taveta County and four other zones were to be established to cater for the whole country.

Implementation of Disease Free Zone programmes proved to be problematic in the country owing to land tenure systems, absence of natural barriers to movement of animals, presence of wildlife in many livestock dispersal areas and other social and structural factors. Consequently, the concept of DFZs has largely been contextualized into a more practical compartment(s) approach where disease freedom is applied. Compartmentalization for disease freedom can be applied to small farm holdings and is therefore more appropriate for Kenyan conditions. Bachuma Holding Ground is now being developed as a compartment for export livestock and livestock products.

1.6.1.3 Epidemiological Surveillance System and Animal Health Information System

Epidemiological surveillance provides essential information to facilitate action to protect animal and human health and animal welfare. It is the systematic, continuous or repeated collection, collation, measurement, analysis, interpretation and timely dissemination of information to those who need to know so that appropriate action can be taken. Epidemiological surveillance system is an integral part of Veterinary Services that facilitates proper and strategic planning for disease control and eradication.

Achievements of the system include: support for eradication and verification of Rinderpest; improvement of early warning system for endemic and exotic animal diseases and zoonoses including wildlife associated diseases. Challenges to epidemiological surveillance are low compliance in disease reporting and poor early warning and response to disease events. This is as a result of the disrupted chain of command from inadequate implementation of Veterinary Services under the devolved system of governance that has not given due priority to disease reporting due to administrative realignment of the reporting structure. Due to underreporting effective disease mapping has been difficult to achieve thus planning for control and management strategies has not been efficient.

1.6.1.4 Veterinary Laboratory Services

Veterinary laboratory services include disease diagnosis, quality assurance of animal production inputs and products, and participation in collaborative research with research institutions. Laboratories provide for confirmatory diagnosis of diseases. Veterinary laboratory services are provided by public and private service organisations. Public veterinary laboratories are mainly under the national government but some counties are operating what were previously district laboratories. The national laboratories are being improved continuously to attain the appropriate biosafety levels.

The national veterinary diagnostic and quality control laboratory infrastructure includes two national laboratories, namely: Central Veterinary Laboratories (CVL) located in Kabete and the National Veterinary Quality Control Laboratory, Embakasi. In addition, there are six regional referral laboratories located in Nakuru, Kericho, Karatina, Mariakani, Garissa, and Eldoret that serve several counties.

There are no veterinary laboratories in the northern Kenya apart from Garissa where most of the livestock are and where most people depend on livestock for their livelihood. Private veterinary laboratory service providers are very few and are found only in major towns. A number of private laboratories have been accredited unlike the public ones which are not accredited. In addition, most of these laboratories are not equipped to the required international standards. Awareness of the need for utilization of the laboratory facilities is low among the animal value chain actors. Veterinary laboratories are regulated under the Veterinary Surgeons and Veterinary Paraprofessionals Act of 2011.

1.6.2 Veterinary Public Health

Veterinary Public Health (VPH) is a component of public health that is devoted to the application of professional veterinary skills, knowledge and resources for the protection and improvement of human health and animal health. The VPH concerns include animal based food safety; feed safety; food defense, reduction and prevention of antimicrobial resistance in humans arising from consumption of animal products and prevention and control of zoonoses. Reduction of drug residues and contaminants is a critical function of the veterinary medicines regulation is essential for food safety, human health, animal health and animal welfare.

The VPH component of veterinary services include inspection and certification of foods of animal origin; integration of standards in food safety; approval of plants processing animal products, by products and other outlets of foods derived from animals; antimicrobial resistance surveillance, reduction and prevention of drug residues and contaminants in foods of animal origin and prevention and control of food borne diseases and zoonoses.

The current delivery of VPH services is limited to meat and meat products. Meat inspection services are governed by the Meat Control Act, Cap 356 of the Laws of Kenya, which outlines explicit codes of inspection for cattle, goats, sheep, pigs and poultry meat. The codes of inspection for camel, rabbit and donkey meat and other animal species products have not been finalised. Food safety inspection requires to be progressively expanded to cover all animal products. The Veterinary Authority has taken over most meat inspection services in the country except in a few slaughterhouses in the ASAL counties that are still under the Ministry of Health, requiring systematic takeover.

Food defense refers to activities that are associated with protecting food supplies from deliberate or intentional acts of contamination or

tampering. During production, there is an overriding need to minimise the risk of biological, chemical and physical contamination entering the food chain ascertained by meat hygiene, milk hygiene and fish hygiene among others. Environmental protection includes: waste management, disposal of animal byproducts, impact of medicines and range of activities linked to vectors, water, wildlife and use of animal monitors. Food originating from animals is especially vulnerable to tampering since its nature easily supports microbial growth. The lack of capacity for establishments dealing in such foods to assess hazards posed by potential acts of sabotage or terrorism and institute proportional protective measures is a major challenge in veterinary public health in the country.

1.6.3 Breeding Services

In order to improve animal genetic resources, the country has implemented a number of breeding programmes and applied a range of breeding technologies. The programmes include National Dairy Cattle Breeding Programme, which involves progeny testing, contract mating, recording services for milk and Artificial Insemination (AI) delivery services and the Kenya Beef Recording Scheme that registers beef cattle and record data on the beef herd performance to inform beef improvement activities. Others are the Sheep and Goat Development Programme, which among other objectives, aims at enhancing the productivity of sheep and goats and raising their wool and meat output to further reduce pressure on beef and beef products.

A number of breeding technologies are used in the country in addition to natural mating. AI is fairly advanced while Embryo Transfer and the use of sexed semen are gradually gaining acceptance among farmers. It is desirable to develop capacity in Kenya for new breeding technology such as; ovary (ova) harvesting, in vitro fertilisation and sexing of semen and other technologies. Although AI services were negatively affected by privatisation in the 1990s, many private service providers are successfully operating and 488,924 inseminations were accomplished from 2010-2012. During the same period, 1,773,723 doses of semen were produced by the Kenya Animal Genetics Resource Centre (KAGRC) and another 692,150 doses and 460 embryos imported by 20 private companies and individual farmers (MALF & L ,2017). Other species of animals need to be included in the AI services and breeding programmes such as horses, companion animals, fish among others. Currently, these services are available for small ruminants, poultry and pigs, although on a small scale.

The country has two major centres for production of semen i.e. the Kenya Animal Genetics Resource Centre (KAGRC), Kabete and the Agricultural Development Corporation (ADC) Centre in Kitale which have inadequate support systems in the field. For instance, liquid nitrogen is not readily available in the counties requiring actors who source it directly from Nairobi. Routine screening is carried out for breeding diseases such as Leptospirosis, Brucellosis, Vibrosis, Trichomoniasis, among others. Conservation of indigenous genetic resources remains a challenge requiring strategic interventions. The range of semen produced does not cover most animal species.

1.6.4 Quality Assurance related to Animal and Animal Products

Quality assurance refer to the process of ensuring compliance with set operating standards and guaranteeing safety of animal products. Application and domestication of international standards are expected to be adopted by actors along animal value chains. For instance, the codes of practice for quality assurance of milk and meat products and the control of transboundary diseases, among others, are in place. However, standards for numerous animal products are yet to be developed. Nonetheless, enforcement and compliance with these standards particularly regarding the prevention, control and eradication of animal and aquatic diseases, food and feed safety is weak. In addition, certification of fish and fish products requires further strengthening.

1.6.5 Animal Resources

Improvement of veterinary services through conducive policy, institutional and legal environment and developing appropriate delivery strategies is expected to stimulate and enhance animal production and productivity. The National Census of 2019 established Kenya's animal resource base as 2.2 million dairy cattle, 559,000 dairy beef, 13 million indigenous cattle, 19.3 million sheep, 28 million goats, 4.6 million camels, 1.2 million donkeys, 443,000 pigs, 30.3 million indigenous chicken, 5.6 million layers, 2.9 million broilers, 561,000 rabbits, 1.2 million beehives and an undetermined number of companion, game and aquatic animals (KNBS, 2019).

Food animals include cattle, sheep, goats, pigs, poultry, rabbits, camels, donkeys, bees, fish, other aquatic animals and some species of emerging livestock. They provide human beings with animal derived proteins, carbohydrates, fats and minerals. Animal by-products are also currently considered as products providing dressing, manure, fertilizers, feedstuffs, ornaments, musical instruments, adhesives, beddings, medicines,

perfumes and polish among others. Animal products are also marketed thus earning income and contributing to the national economy.

Working animals such as horses, donkeys, oxen and camels provide draught power for human movement and commerce in many parts of the country. The honey bees produce honey for human food; honey is also a component of certain medicines. Moreover, in the process of gathering nectar and pollen, bees pollinate plants. This simple act is responsible for the propagation of virtually all plant species, including forests and other vegetation.

1.6.5.1 Meat

Kenya's red meat producing farm animals include cattle, sheep, goats and camels and to a small extent farmed game. Beef has the capacity to earn the country more foreign exchange than any other single agricultural commodity which is not the case at the moment. Beef cattle breeds comprise Boran, 40 per cent, Zebu, 50 per cent, and the remaining 10 per cent are other breeds such as Sahiwal, Hereford, Charolais, Simmental and Red Poll. The meat sheep breeds include Dorper, Blackhead Persian, Red Maasai and 10 per cent wool sheep breeds such as Merino, Romney Marsh and Corriedale. Meat goats mainly consist of the Small East African breed, 50 per cent, and Galla, 20 per cent. Four breeds of camels are reared: the Somali camel, Rendille/Gabra, Turkana and the Pakistan type. The bulk of red meat supply comes from the ASALs but a small proportion of beef supply comes from dairy herds. The pig industry has enormous potential providing a critical source of meat and other pig products.

The number of livestock slaughtered in the country has been increasing over time due to a growing human population and rising demand for food of animal origin. The number of cattle and calves slaughtered rose by 7.4 per cent from 2,590.0 thousand heads in 2017 to 2,781.7 thousand in 2018. Similarly, the total number of goats and sheep delivered to slaughter houses increased by 11.3 per cent to stand at 10,247.6 thousand heads during the review period. The same trend was witnessed in the number of pigs slaughtered that increased by 7.8 per cent from 360.1 thousand heads in 2017 to 388.2 thousand in 2018 (KNBS, 2019)

Most of the meat is consumed locally with small quantities being exported to Tanzania, Uganda, Somalia, South Sudan and the United Arab Emirates. Annually, 5,000 MT of meat and meat products are certified for export and about 2,000 MT imported. White meat, which includes poultry and pig meat, accounts for about 19 per cent of the meat

consumed in the country. The current per capita meat consumption is estimated at 10.8 kg of red meat and 1.1 kg of white meat. These estimates are expected to change in relation to the country's economic growth and variations in personal income.

1.6.5.2 Milk

The major dairy cattle breeds include Friesian, 60 per cent, Ayrshire, 20 per cent, Guernsey, 5 per cent, and Jersey, 3 per cent. The rest of the cattle population consists of cross and dual-purpose breeds. These breeds produce milk for local consumption and export, particularly to the Eastern and Central African region. The level of development of dairy goats and camel production is low hence there is need for intervention to increase their milk contribution to the economy. The main dairy goat breeds are Toggenburg, Saanen and German Alpine.

Smallholder farmers account for 70 per cent of the total milk production in Kenya. Only 20% of the milk produced is processed which was estimated at 634.3 million litres in 2018 (KNBS, 2019). Kenya has an average annual per capita milk consumption of 98 and 110 litres in rural and urban areas respectively. This is projected to increase to an average of 220 litres with a national milk demand of 12.7 billion litres in 2030. The Veterinary Policy will provide for effective observance of sanitary measures in production and processing.

1.6.5.3 Fisheries

The total fish output increased from 135.1 thousand tonnes in 2017 to 148.3 thousand tonnes in 2018 (KNBS, 2019). Fresh water fish increased from 111.8 thousand tonnes in 2017 to 124.1 thousand tonnes in 2018. Lake Victoria accounted for 66.1 per cent of the total fish landed with an output of 98.2 thousand tonnes in 2018. Marine fish landed increased by 4.1 per cent to 24.2 thousand tonnes. The total value of fish output rose by 4.5 per cent to KSh. 24.0 billion in 2018 of which fresh water sources accounted for 81% amounting to KSh. 19.4 billion.

The low share of marine fish landing is attributed to lack of appropriate technology and inadequate facilities necessary for fishing in deep waters. Other factors that affect fish include fish diseases and parasites. Fish and other aquatic animal products are traded in the domestic markets and are also exported largely to the European Union and Israel. Veterinary Services are expected to safeguard fish health for increased productivity and consequent improved livelihoods, food and nutrition security.

1.6.5.4 Honey

Veterinary input is critical in safe honey production and certification for trade. The honey industry produces honey, propolis, beeswax, and bee pollen for utilisation as food, industrial raw materials and trade. Bees pollinate plants without which growth of crops and forests would be greatly hampered. More than 80 per cent of honey producers use traditional log hives. The use of Kenya Top Bar hives, Langstroth hives and other new technologies is on the rise. Honey production is gradually on the rise particularly in the ASALs where pasture and water for animals are scarce. Beekeeping contributes to incomes as well as food and nutrition security. Honey and beeswax production was estimated at 20,500 MT and 2,500 MT respectively in 2018 (FAOSTAT, 2018) at 25,600 MT in 2016, (MoALF. 2015). The potential for honey production is estimated at 100,000 MT and 10,000 MT for beeswax annually but this level has not been realised because of bee diseases and pests and poor apiculture practices.

1.6.5.5 Rabbits

Rabbit population in Kenya is estimated at 561,000 (KNBS, 2019). Rabbits are found mainly in Central, Western and Rift Valley regions. Commercial rearing of rabbits is a relatively new industry in the country but various institutions are working towards development of the enterprise. Kenya has only recorded exports of rabbit meat to Sudan over the period 2000–2010 with the highest export value being KES 0.49 million in 2008. Rabbit health focus is now growing in importance.

1.6.5.6 Donkeys and Horses

Donkeys provide transport for people and goods and are often used in small scale agricultural systems for light tillage, seeding and weeding of crops. Despite their valuable contributions to human society, research and development in donkey use has been minimal. They have been given less consideration than other species of livestock and their welfare is often neglected. A number of factors explain why donkeys have low status. They are usually the cheapest, often the only affordable, work animals and therefore tend to be associated with the poor. In contrast to cattle and camels which are usually kept for their milk and meat as well as work, hides that are cured for leather, bride price and dung that has a number of uses; donkeys are mainly used for work even though, some communities consume their meat and milk and use their hides. They are mostly owned by men but usually used by women and the youth.

Horses can be used for transport; to draw farm implements for land preparation and harrowing and to drive water pumps for irrigation. In Kenya, horses are mainly used for horse racing, polo playing and show jumping. The monetary value of good sporting horses has no upper limit and breeding these types of horses is good business. Horses are also great family pets and can give their owners much pleasure with their gentle and trusting nature. Kept with cattle, horses keep the latter healthy as they eat all the grass left over by cattle, usually near piles of cow dung, which includes all internal parasite eggs and larvae deposited with the dung. Being a non-ruminant, most of these worms cannot develop in the horse' gut and therefore die. Conversely, cattle can eat grass near horse' droppings. Hence when kept together, horses and cattle reduce each other's parasite burden, need much less deworming and stay much healthier.

1.6.5.7 Companion Animals

Companion animals or pets are usually kept for company but the sentimental value has economic benefits. The most popular pets in Kenya are dogs and cats, but people also keep rodents such as gerbils, hamsters, chinchillas, fancy rats and guinea pigs; avian pets, such as canaries, parakeets and parrots; reptile pets, such as turtles, lizards and snakes; aquatic pets such as tropical fish and frogs and arthropod pets such as tarantulas and hermit crabs.

The keeping of animals as pets raises concerns in regard to animal welfare and transmission of zoonoses. In particular, confined housing, nutrition, health care and breeding may not be optimal. Poorly kept pets are a health risk to household members as they can harbour pests and diseases that can cross over to people. If the pets get into contact with animals beyond the home as often happens in developing countries, the risks increase.

1.6.5.8 Emerging Livestock

Emerging livestock include ostriches, crocodiles, quails, guinea fowls, snakes, ants, snails, frogs and chameleons. They are largely unexploited either due to inadequate information to support their production, lack of sufficient marketing channels, inadequate policy and legal framework or socio cultural beliefs that hinder their utilisation. Ostrich and crocodile farming are major enterprises in this Sector due to current awareness of their immense potential in the global market. In 2018, ostriches numbered approximately 27,200 and are mainly kept for meat, eggs, skins, feathers and eggshells (KNBS, 2019). Ostrich farmers are concentrated in the ASALs. Crocodiles are reared mainly for their skins and meat.

1.6.5.9 Wildlife

The country has 22 National Parks, 28 National Reserves, 6 Marine Parks and Reserves and 4 National Sanctuaries holding different species of wildlife including lions, elephants, turtles, giraffes, buffaloes, elands, wildebeests, leopards, rhinos and zebras. These animals and other species in the wild support the tourism industry whose earnings rose from KSh 119.9 billion in 2017 to KSh 157.4 billion in 2018 (KNBS, 2019). Many species of wild animals carry certain diseases that afflict farm animals, for this reason, they are key to animal disease control programmes.

The contribution of wildlife to the country's meat supply is negligible, accounting for less than 1 per cent of the total meat consumed. A few licensed dealers, particularly hotels and restaurants, supply game meat. Kenya restricts marketing and export of game meat due to fears that its full-scale promotion can encourage poaching.

1.6.5.10 Hides and Skins

Hides and skins are important products that arise from slaughter of animals. They are usually processed into leather and other products prior to export. The bulk of conventional leather production is accounted for by cattle hides (70 per cent), sheep skins (20 per cent) and goat skins (10 per cent). Other less significant sources of leather include calf, lamb and kid skins, fish skins, buffalo hides, ostrich skins, crocodile, and pig skins. A total of 2.6 million hides valued at KSh 792 and 7.5 million skins valued at KSh 486 million were produced in 2016, (MOALF, 2017). Kenya has a thriving tanning industry of 14 functional tanneries with an installed capacity of tanning 3.3 million hides and 8.3 million skins. Products from tanneries include wet blue and tanned leather. The country exported 23,141.6 tonnes of leather in 2018 (KNBS, 2019). Kenya also manufactures varied leather goods including footwear, handbags and belts. Most of these are exported to Uganda, Tanzania, COMESA, United States of America and the European Union.

1.6.6 Performance of Veterinary Services (PVS) Report

The World Organization for Animal Health (OIE) experts carried out a Performance Analysis of Kenyan Veterinary Services in 2019 and produced a report identifying development priorities implementable in 5 core pillars.

1.6.6.1 Development Priorities

The main priorities identified were closely related to the overall growth of the animal resources through respective industries with a focus on the

Livestock Policy which aims to increase food security and sustainable income for rural communities, as well as to increase competitiveness and access to foreign markets. The priority is translated in the animal health components, which consist of a poverty reduction strategy and a market oriented strategy to establish disease free zones or compartments for trade sensitive cattle diseases (FMD and CBPP mainly) in order to export beef to high value markets by 2030. The veterinary public health priorities aimed to strengthen the control of Veterinary Services over meat inspection services countrywide. The main priority consisted of strengthening the veterinary public health controls and impacts over non-meat commodities, such as milk, eggs, honey as well as meat products from non-traditional or emerging farmed animal species, such as ostriches, rabbits and snails. Critical for the Veterinary Services was the need to maintain the chain of command between the national government arm and the county government veterinary services following devolution of the services.

1.6.6.2 Pillars in the Delivery of Veterinary Services

Five pillars were identified in the delivery of Veterinary Services in Kenya.

First Pillar

Strengthening competencies for international trade comprising critical competencies that include: quarantine and border security, identification and traceability (for animals, and for animal products), international certification, equivalence agreements, transparency, zoning and compartmentalisation.

Second Pillar

Strengthening competencies for animal health is important focusing on: epidemio-surveillance (passive and active), early detection and emergency response, disease prevention, control and eradication and animal welfare.

Third Pillar

Strengthening competencies for veterinary public health is important through focus on: food safety (animals and animal products), veterinary products and residue testing. There was need in strengthening compliance with international standards, not just in the beef sector, but in all food producing sectors, and in particular the dairy sector, exercising effective administrative control and implementation of quality standards for most aspects of the regulation of veterinary medicines and veterinary

biologicals.” To this end, strengthening the autonomous Veterinary Medicines Directorate was identified as critical. In terms of residues, there was need to combine the private sector driven, self-regulated residue testing for a limited number of products to a public sector driven “comprehensive residue testing programme for all animal products for export and domestic use”.

Fourth Pillar

The veterinary laboratory diagnosis capacities needed to be improved in order to ensure that diseases of zoonotic or economic importance not present in the country, but known to exist in the region and/or that could enter the country, can be correctly diagnosed.

Fifth Pillar

Strengthening competencies for general management and regulatory services with main improvements focusing on Veterinary practice and organisation in risk analysis and the management of emerging issues, as well as enhancing capacity of the Kenya Veterinary Board was recommended.

1.6.7 Institutional and Legal Framework

1.6.7.1 Institutional Framework

The institutions expected to perform leading roles in implementation of the Veterinary Policy include: National government through the relevant ministry and its technical departments and the County governments responsible for veterinary services; governmental agencies such as the Kenya Veterinary Board (KVB), Kenya Dairy Board (KDB), the Kenya Meat Commission (KMC), Kenya Animal Genetic Resources Centre (KAGRC), Kenya Veterinary Vaccines Production Institute (KEVEVAPI), Kenya Cooperative Creameries (KCC), Kenya Leather Development Council (KLDC), Kenya Bureau of Standards (KEBs), Kenya Tsetse and Trypanosomiasis Eradication Council (KENTTEC), Research and Training institutions among others. Other private sector institutions expected to implement the Policy include the Kenya Veterinary Association among others.

The key mandate of these institutions range from regulation, coordination of intercounty activities, facilitation of service delivery, production and distribution of inputs, and capacity building. However, most of the institutions lack the capacity to carry out their mandates effectively.

1.6.7.2 Legal Framework

Veterinary Services are guided by several laws. Key among them are; Animal Diseases Act, Cap 364; Veterinary Surgeons and Veterinary Paraprofessionals (VSVP) Act, No 29 of 2011; Meat Control Act, Cap 356; Prevention of Cruelty to Animals Act, Cap 360; Branding of Stock Act, Cap 357; Stock and Produce Theft, Cap 355; Pest Control Products Act, Cap 346; Fertilizer and Animal Foodstuffs Act, Cap 345; Rabies Act, Cap 365; Hides, Skins and Leather Trade Act, Cap 359; Cattle Cleansing Act, Cap 358; Dairy Industry Act, Cap 336; Kenya Meat Commission Act, Cap 363 ; Public Health Act, Cap 242; Food, Drugs and Chemical Substances Act, Cap 254; Standards Act, Cap 496; Food, Drugs and Chemical Substances Act, Cap 254; Stock Traders Licensing Act Cap 498; Pharmacy and Poisons Act, Cap 244 whose functions are now undertaken by the Veterinary Medicines Directorate as provided for by the Veterinary Medicines Directorate Regulations, 2015 of the VSVP Act.

Enforcement of these laws is weak and there is need to review and update the laws in order to address contemporary challenges and achieve conformity with the Constitution and relevant international treaties ratified by Kenya.

1.6.8 Policy Situation

Development of the animal resource industries is guided by policies in the Agricultural Sector, Human Health Sector and biodiversity policies as well as other policy instruments with direct impacts although from different sectors. However, there is no specific policy on Veterinary Services. The Agricultural Sector Development Strategy (ASDS) 2010–2020, aimed at ensuring food and nutritional security and transforming agriculture into a modern and commercially viable sector. The targeted areas included improving animal health and quality assurance services to increase productivity; reducing losses along the value chain; promoting local and export trade and enhancing food safety.

The ASDS 2010 was reviewed to create the current Agriculture Sector Transformation and Growth Strategy (ASTGS) implementing the Agricultural Policy. The ASTGS prioritizes three anchors to drive the 10-year transformation, with initial specific targets set by the end of 2023:

- Anchor 1: Increasing small-scale farmer, pastoralist and fisherfolk incomes through raising average annual small-scale farmer incomes to directly benefit ~3.3 million Kenyan farming households.

- Anchor 2: Increasing agricultural output and value addition by expanding agricultural GDP and growing contribution of agro-processing to GDP.
- Anchor 3: Increasing household food resilience by reducing the number of food insecure Kenyans in the ASAL regions to zero while reducing the cost of food and improving nutrition to protect households against shocks whether environmental or fiscal.

The National Livestock Policy (2008) reviewed in 2020 addresses challenges in the entire Livestock Sector value chains with emphasis on livestock breeding, nutrition and feeding, marketing, research and extension with a product and livestock specific focus. The Veterinary Policy utilises the animal health, welfare and food safety considerations and focus on a wider range of animals including livestock, aquatic and companion animals and wildlife while focus in the Livestock Policy is on domestic animals. The Policy incorporates aquatic and wildlife health, animal resources' statistics and genetic engineering among other areas of concern in the animal resource industries.

The Health Policy (2012-2030) recognises the need for collaboration with other sectors whose functions impact on human health. This is to be achieved by adopting "One Health Approach". The Veterinary Policy expounds on "One Health" that espouses inter disciplinary cooperation for successful intervention in matters that affect human, animal and environmental health. In this regard, the Veterinary and Health policies need to synergize in relation to human and animal health with a focus on zoonoses and food safety among other areas of mutual concern and provide for competence based regulation of food safety along the farm to fork continuum.

The Fisheries Policy recognises the impact of sanitary and phytosanitary standards imposed by major export destinations that can limit Kenya's international trade in fish and fishery products. The Veterinary Authority is responsible for live fish export or import certification and works in collaboration with the State Department responsible for Fisheries and related agencies to mainstream sanitary measures in the fish value chain. In addition, the Veterinary Policy provides for the health and safety issues for all other aquatic animals.

According to the Wildlife Policy, wildlife diseases and health impact wildlife conservation and rural livelihoods. Most of Kenya's wildlife is found in the ASALs hence the interaction between livestock and wildlife,

exposing both to transmission of diseases. Disease transmission has implications for wildlife management, public health, food security, livestock development and rural livelihoods. Many animal diseases, including zoonotic diseases, affect both wildlife and livestock. Affected animals are also likely to infect human beings. This calls for a collaborative mechanism between the wildlife and veterinary authorities.

The Forestry Policy identifies livestock keeping as the main economic activity of the ASALs. Due to population pressure in the high and medium potential areas, there is migration into the dry land areas resulting in depletion of grazing lands; the forest resource and tree cover leading to degradation. Forests are home to wildlife and insects, for this reason, they play a key role in animal disease dynamics as some of the forest based animals act as carriers of livestock diseases and certain insects are disease vectors. The Veterinary Policy provides for a collaboration framework to address these problems.

The National Environment Policy highlights the effects of overgrazing in the ASALs. In the rain-fed areas, especially where zero grazing is practiced, the main issue in livestock production is waste management, including disposal that can result in environmental pollution. In urban areas, disposal of effluents from abattoirs, butcheries, tanneries and other establishments that process livestock products is a major problem. The Veterinary Policy provides for collaboration between the environmental and animal resource agencies for sustainable development of the animal resource industries.

1.6.9 Rationale for the Policy

There is potential for the animal resource industries to perform better especially with the improvement in animal health, animal welfare and increased access to markets. Veterinary Services are central to the achievement of desired animal health status, increased animal production, improved animal welfare, food safety and trade in animals and animal products. These factors have created a need to develop linkages and mechanisms for effective and efficient delivery of services under the devolved system of government. Aquatic, domestic and wild animal resources are critical for most livelihoods and the national economy.

The Veterinary Policy aligns the animal health, production, welfare, food safety and trade issues in the animal resource industries in Kenya to the Constitution, the International Treaties ratified by Kenya including the Regional Economic Communities' Agreements. The alignment aims at

ensuring that Kenyans receive benefits from constitutional guarantees in animal products while trading in high value international markets to improve incomes from animal resources. This is to be accomplished through an innovative, commercially oriented farm animal industries while protecting the health and welfare of companion, wildlife and aquatic animals.

The WTO mandated OIE to develop animal health standards that enforce the SPS Protocol. In Kenya, animal health, welfare and production are governed by more than 24 laws, which need to be reviewed. This policy will inform the review and consolidation of veterinary laws in line with international, regional and national guidelines. It is documented that over 70 per cent of emerging pathogens that afflict human beings originate from animals, both wild and domesticated. The importance of the “One Health Approach” as the key to success in achieving global health and food security goals does not need to be gainsaid thus the Veterinary Policy institutionalizes the approach.

Climate change effects lead to spread of diseases and vectors beyond their traditional agro ecological zones and emergence of hitherto unknown or dormant diseases. These developments necessitate new policy approaches to the management of diseases. Innovative animal health, production and breeding technologies together with changing consumer preferences and elaborate requirements for international trade in animals and related products demand a review of the relevant legal framework that will be supported by the Veterinary Policy.

Animal health, production, welfare, food safety, marketing and trade are integral to the development of the animal resource industries that is afflicted by many challenges. This Policy provides a framework for efficient exploitation of animal resources through interventions that are expected to increase profitability and improve sustainability of the animal resource industries. In order to harness the inherent benefits of animals, focus will be on each animal species, including emerging livestock.

The Veterinary Policy recognises the important roles of the private sector in the animal resource industries. These roles are bound to increase and the Policy, therefore, outlines mechanisms for linkages with different non state actors including, nongovernmental organisations, community based organisations, and development partners, to advance their participation in development of specified components of the animal resource industries.

1.6.10 Scope of the Policy

The Veterinary Policy is anchored on the need to enhance the contribution of the animal resource industries to food and nutrition security and wealth creation without compromising the environment. It takes into consideration all animal related aspects, including health, production, welfare, trade, training, medicines, research and safety of foods of animal origin, animal based products and feeds in line with international best practices. Veterinary governance and regulation of the profession are accorded due consideration. The Policy covers animal species including: livestock, wildlife, companion, aquatic and animals for research, diagnostics and experimental purposes.

The Policy provides synergy and focus among the actors in the animal resource industries as they perform their respective roles. It builds linkages and provides mechanisms for liaison with organisations and institutions whose functions directly or indirectly impact the animal resource industries. It also provides a background to the animal resource industries and a situational analysis on all aspects of animal health, production, welfare, food safety and trade issues locally, regionally and internationally as well as identifying the challenges, stating objectives to be met and the guiding principles. Further, the Policy identifies areas of intervention by proposing relevant policy statements which shall form the basis of generation of activities to implement it. Finally the policy provides its framework of implementation considering the legal and institutional framework, monitoring and evaluation and the mechanisms of financing.

CHAPTER TWO : CHALLENGES, OBJECTIVES AND PRINCIPLES OF THE POLICY

2.1 CHALLENGES

The animal resources industries face a number of challenges, which include:

1. Inadequate policy direction on the management of animal diseases, food and feed safety, animal emergencies, animal welfare, marketing and trade in animals and animal products.
2. Inadequate capacity to carry out animal health, welfare and food safety services, especially in the ASALs, hence contributing to poor delivery of veterinary services and quality assurance of inputs and animal products. It also leads to poor compliance with sanitary measures and affects access to domestic and high-value international markets.
3. Low animal productivity due to poor genetics, inadequate uptake of modern breeding technologies, a weak infrastructure for animal production, animal diseases burden and inadequate extension services.
4. Poor infrastructure affecting guarantees for food safety essential for marketing and trade in animals and animal products.
5. Minimal processing and little value addition of animals and animal products.
6. Low competitiveness of products in the local and international markets due to high cost of animal production inputs and low adoption of economies of scale.
7. Inadequate regulatory framework for veterinary pharmaceuticals leading to poor quality of medicines and misuse of veterinary medicines thus posing risks to human, animal health and the environment.
8. Under development of the animal resources industries characterised by limited demand driven research, under exploited animal resources, weak research extension linkages, outbreaks of animal diseases and inadequate market access.
9. Changes in the governance and institutional structures related to the chain of command arising from the devolution of veterinary services.

10. Shortages of human, physical and financial resources for the successful execution of veterinary services.
11. Prevalence of transboundary animal diseases that affect trade and the emergence of zoonotic diseases.
12. Effects of climate change, competition for land between animals and humans, land tenure system and other cross cutting issues that curtail development of the animal resource industries.
13. Limited and in some cases lack of provision for record keeping, data and information management at the farm, county and national levels.
14. Inadequate coordination and harmonisation of activities related to service provision between the public and the private sector.
15. Inadequate incentives for private sector investments in the animal resources industries.

2.2 OBJECTIVES OF THE POLICY

The goal of the policy is to safeguard animal health and welfare, increase animal production and productivity and promote trade in animals and animal products for sustainable food security, food safety, public health and economic development. The specific objectives are to:

1. Improve management of animal diseases, animal emergencies and animal welfare.
2. Guarantee safety of all foods and products of animal origin and control zoonotic diseases to safeguard public and environmental health.
3. Improve marketing and trade in animals and animal products through compliance with sanitary requirements along the animal value chains.
4. Strengthen the epidemio surveillance system to enable early warning, detection and timely response to disease threats and outbreaks and provide information for decision making.
5. Improve provision of safe and effective veterinary pharmaceuticals and biologicals.
6. Provide an enabling environment for the private sector to effectively participate in delivery of veterinary services.

7. Ensure safety and quality of inputs in the animal health and production value chain.
8. Provide for relevant breeding programmes, conserve animal genetic resources, biological diversity and regulate biotechnology in the development of animal resources.
9. Provide marketing infrastructure for animal resources, enhance value addition and improve efficiency along the animal value chains through veterinary related interventions.
10. Enhance research, training and capacity development in the animal resource industries.
11. Establish effective and efficient governance systems for the provision of veterinary services.
12. Provide an efficient and effective veterinary infrastructure that will ensure compliance with national and international acceptable service delivery standards.
13. Enhance consultation and cooperation between national and county governments in the delivery of veterinary services.
14. Strengthen participation in international standard setting forums for the veterinary domain.
15. Integrate environmental protection and climate change mitigation and adaptation measures, and other cross cutting issues relevant to veterinary services.
16. To provide a framework for disaster preparedness and response.
17. Promote and support innovativeness and innovations along the animal value chains.

2.3 PRINCIPLES OF THE POLICY

Animal resources in Kenya will be utilised sustainably for the benefit of human and animal welfare through the support of Veterinary Services in accordance with the following principles:

1. A veterinary service that is compliant with international standards.
2. Protection and promotion of animal, human and environmental health.
3. Investment and innovation in animal resources industries.
4. Conservation of animal genetic resources.
5. Enhancement of food security, livelihoods and economic gains from animal resources.
6. Mainstreaming animal welfare in all interventions.

CHAPTER THREE : POLICY STATEMENTS

3.1 ANIMAL HEALTH

Major challenges in animal health include frequent occurrence of transboundary animal diseases, emerging and re-emerging diseases, production diseases, and animal emergencies. Contingency plans and standardized manuals have been developed only for a few diseases due to inadequacy of resources.

Objective: To improve management of animal diseases and ensure compliance with sanitary requirements along the animal value chains.

3.1.1 Domestic Animal Health

Animal health services are critical for prevention, control and eradication of diseases that adversely impact the productivity, quality and marketability of animals and animal products. Infectious and contagious diseases that spread fast and cause heavy economic losses require prompt attention. Some of these diseases are notifiable such as Foot and Mouth Disease (FMD), Contagious Bovine Pleuropneumonia (CBPP), African Swine Fever (ASF), New Castle Disease (NCD) and Peste de Petits Ruminants (PPR). Their transboundary nature requires cross border cooperation to ensure effective control. East Coast Fever (ECF), Trypanosomiasis and Rift Valley Fever (RVF) are some important vectorborne diseases transmitted by ticks, tsetse-flies and mosquitoes respectively.

The key competencies to be strengthened in animal health include epidemio surveillance (passive and active); early detection and emergency response; disease prevention, control and eradication, and animal welfare. Active and passive surveillance will be broadened to include all priority and trade sensitive diseases.

The National and County Governments will:

1. Protect and ensure sustainable utilization of public land set aside for establishment of quarantine stations, holding grounds, outspans, veterinary farms (efficacy trial centres), veterinary investigation laboratories, and other veterinary institutional lands.
2. Collaborate in the implementation of national programs such as disease free zoning or compartmentalization.

The National Government will:

1. Develop strategies, protocols and contingency plans for control and eradication of animal diseases, vectors and parasites.
2. Co-ordinate emergency responses.
3. Implement strategies in the management of transboundary animal diseases.
4. Enforce domestic animal health standards to safeguard public health and safe domestic and international trade in aquatic animals and their products
5. Exercise the responsibility for certification of domestic animals and their products.
6. Provide for mechanisms to eliminate spread of domestic animal diseases via inter county and international trade.
7. Provide a framework for public private partnership for effective delivery of veterinary services.
8. Regulate provision of animal health services.
9. Develop compensation mechanisms to aid disease control and eradication.

The County Governments will:

1. Co-ordinate and enforce disease control, animal health mitigation measures and management of transboundary animal diseases.
2. Implement measures for control of animal diseases and pests.
3. Carry out regular and targeted surveillance for animal diseases and pests.
4. Support private sector animal health service providers through technology transfer and sharing disease control measures.
5. Enhance animal vaccination coverage to attain optimal levels and implement national standards in the control of livestock movement.
6. Implement national disease control policies and strategies.
7. Provide data and report disease outbreaks to the Competent Authority.

3.1.2 Aquatic Health

Aquatic animals such as fish and other sea foods are important sources of protein and their products significantly contribute to food security. The demand for animal proteins is constantly increasing in the face of shrinking land sizes thus proteins derived from aquaculture can provide an important alternative to those obtained from terrestrial animals. However, disease outbreaks in aquatic animals, when undetected, can cause extensive losses. Fish farming is increasingly gaining importance as a source of food and income but poor fish health constitutes one of the major constraints to its development. Science based aquatic animal welfare standards in transport of live fish and fish capture for human consumption and require sanitary enforcement. Important is drug residue levels.

The National Government will:

1. Develop strategies, protocols and contingency plans for the delivery of aquatic animal health and welfare.
2. Regulate provision of aquatic animal health services and establish dedicated unit for veterinary services in the fisheries services.
3. Enforce aquatic health standards to safeguard public health and trade in aquatic animals and their products.
4. Exercise the responsibility for trade certification of aquatic animals and their products.
5. Provide for mechanisms to eliminate spread of aquatic animal diseases via inter county, transboundary and international trade.
6. Provide a framework for public private partnership for effective delivery of aquatic animal health services.
7. Protect the aquatic environment.

The County Governments will:

1. Adhere to standards for the improvement of aquatic animal health, welfare, public health and safe domestic and international trade in aquatic animals and animal products.
2. Control diseases of aquatic animals through early detection, reporting and response.
3. Collaborate in risk assessment for domestic and international trade in aquatic animals and animal products.

4. Develop mechanisms for provision of aquatic animal health services and implementation of national and county programs.
5. Provide data and report disease outbreaks to the Competent Authority.

3.1.3 Wildlife Health

Wildlife resources are essential to the tourism industry in Kenya. They also provide valuable products, food, medicines and are used for research. Changes in land use including human expansion into new geographic areas and the intensification of production to meet increasing needs for animal proteins have altered the equilibrium between domestic animals and wildlife. These changes have affected public, wildlife, companion animals and livestock health and their relationship to the environment. Over 60 per cent of pathogens affecting humans are of animal origin and over 70% of emerging zoonotic diseases can be traced to animals including wildlife. Uncontrolled movement of wildlife may contribute to livestock disease outbreaks; threaten livestock production; affect international trade, rural livelihoods and native wildlife populations and adversely impact environments.

The National Government will:

1. Provide for development and implementation of strategies, protocols and contingency plans for the improvement of wildlife health and welfare.
2. Provide for implementation of early detection, reporting and control of wildlife diseases.
3. Regulate the provision of wildlife health and welfare services.
4. Coordinate risk management approaches at the interface of wildlife, domestic animals and human ecosystems through enhanced cross sector consultation and cooperation.
5. Provide local and international health certification of wildlife and wildlife products.
6. Provide a framework for public private partnership for effective delivery of wildlife health and welfare services.

The County Governments will:

1. Implement the national policies and strategies in safeguarding wildlife health and welfare.
2. Provide for the management and control of wildlife diseases.
3. Provide data and report disease outbreaks to the Competent Authority.

3.1.4 Epidemiological Surveillance

Data on disease is necessary for planning. The country has regional and international obligations in terms of disease reporting to facilitate trade. It is necessary to put in place an elaborate animal disease surveillance system that provides early warning and detection of exotic and emerging diseases and an accurate description of the animal health situation in the country. Modern geo referencing and information as well as communication technology are useful in supporting the conduct of disease surveillance in the country. Farmers' reports and clinical diagnosis constitute passive surveillance that supports planned disease investigation.

Objective: To collect and disseminate accurate data for effective and timely management of animal diseases and conditions.

The National and County Governments will:

1. Strengthen the epidemiological surveillance system to integrate terrestrial and aquatic animal health information and improved utilization of veterinary laboratories.
2. Support participation of private animal health service providers in epidemiological surveillance.
3. Strengthen participation of the public in disease surveillance and reporting.

The National Government will:

1. Develop a national epidemiological surveillance framework and guidelines.
2. Coordinate and conduct regular epidemiological surveillance.
3. Collate and share surveillance data.
4. Report to the international, continental and regional levels on the overall disease status.
5. Develop national capacity for epidemiological surveillance.

The County Governments will:

1. Conduct surveillance in partnership with private practitioners and the public.
2. Report occurrence of disease and related matters of veterinary importance to the Competent Authority.

3.2 VETERINARY LABORATORY SERVICES

Disease diagnosis and quality assurance of inputs and products cannot be achieved without competent, efficient, accessible and cost effective laboratory services. These services are provided by both public and private laboratories. However, the linkage between the public and private laboratories is weak and needs strengthening. Further, there is need to reorganize the laboratory network and improve capacity and infrastructure for optimal and quality services. The veterinary laboratory diagnosis capacities should be improved to ensure that diseases of zoonotic or economic importance not present in the country, but known to exist in the region and/or that could enter the country can be correctly diagnosed.

Objective: To provide efficient, quality, accessible and cost effective veterinary laboratory services.

The National Government will:

1. Provide for veterinary laboratory standards and a veterinary laboratory framework that serves both public and private laboratory service providers.
2. Enhance capacity of public veterinary laboratories to provide quality, efficient and competent laboratory services in line with national and international standards.
3. Improve laboratory infrastructural capacity.
4. Establish national and regional referral laboratory networks to increase access to laboratory services.
5. Provide for improvement of the capacity of the public diagnostic, research and quality assurance laboratories for animal inputs and products.
6. Regulate veterinary laboratories and provide for accreditation of public and private veterinary laboratories.

The County Governments will:

1. Enhance use of laboratory diagnostic services.
2. Provide for county laboratory services.
3. Enhance capacity of county public veterinary laboratories to provide quality services.

3.3 VETERINARY PUBLIC HEALTH

The Veterinary Public Health (VPH) concerns include diagnosis, surveillance, epidemiology, control, prevention and elimination of zoonoses; food protection; management of health aspects of laboratory animal facilities and diagnostic laboratories; biomedical research; health education and extension; protection of the environment and production and control of biological products and medical devices. Other VPH concerns include antimicrobial resistance; certification of foods of animal origin; strengthening compliance with international food standards and management of public health emergencies.

Objective: To safeguard public health in order to enhance domestic and international trade in animals and animal products.

3.3.1 Food Safety

Food safety is a public health priority that involves handling, preparation and storage of food in a manner that prevents contamination by potentially harmful substances. Food can transmit diseases from animals to humans, among humans and serve as growth media for microorganisms that cause food poisoning. Over 60 per cent of new infectious diseases affecting humans are caused by bacteria, viruses and other pathogens that originate from animals. Many of these diseases are frequently related to improper handling of infected domestic and wild animals during production, at slaughter premises and in food markets. Globalization of food production and trade increases the likelihood of international incidents involving contaminated food.

Key global food safety concerns include spread of microbiological hazards such as *Salmonella* and *Escherichia coli*; chemical food contaminants; drug residues in food; capacity to assess new food technologies, such as genetically modified food and unavailability of strong food safety systems in some countries to ensure a safe global food chain. In reference to residues, there is need to embrace the testing of all relevant animal products for use locally or internationally. Developing procedures in accordance with the World Organization for Animal Health (OIE) Code in respect of on farm disease control measures targeting products of animal origin such as meat, dairy products, poultry products, venison products, hides and skins, animal waste, and others, are important. Inadequate capacity for tracking food from farm to fork to enable traceability and authentication of foodstuffs and reinforce consumer confidence and aid trade in food products has been a major

challenge. Overall food safety standards are based on the Codex Alimentarius Commission Standards.

The National Government will:

1. Provide for implementation of standards on safety of foods of animal origin.
2. Develop protocols for quality assurance of all foods of animal origin.
3. Develop and implement a residue monitoring plan for relevant animal products.
4. Establish a mechanism for regulation and enforcement of standards in food safety for products of animal origin for consumer protection.
5. Enforce compliance with food safety and food defense standards.
6. Provide for certification of products of animal origin through inspection and related services.
7. Provide a mechanism for designation of export, national and county abattoirs and provide for the various services in each of the categories.
8. Develop guidelines and conduct antimicrobial resistance surveillance.
9. Provide for data and information management for food safety surveillance and feedback to counties.

The County Governments will:

1. Implement appropriate sanitary measures in food safety surveillance in animal value chains.
2. Implement food safety standards.
3. Provide inspection services in county abattoirs.
4. Promote food traceability.
5. Implement strategies for elimination of residues in food of animal origin and prudent use of antimicrobials in food animals.

3.3.2 Value Addition

Veterinary services are essential to the safety of value added products. Animal resources industries players have inadequate knowledge and

competency of sanitary measures. This leads to safety and quality concerns for animal products during value addition. Domestic processing and other value addition techniques create additional economic returns, more varieties for different markets, more employment, extended shelf life and better utilisation of animal products. The Kenya Vision 2030 has identified benefits of this intervention. However, growth of the animal resource industries has been hindered by releasing primary or unprocessed products to the market. This has led to low returns and problems of maintaining and extending shelf life of primary products. In turn, this has reduced the farmers' capacity to raise healthy animals that fetch better market prices.

The national government will provide and enforce standards for quality assurance of value added animal products.

The county governments will implement standards to guarantee the safety of value added animal products along the animal resource industries value chains to improve access to domestic and international markets.

3.3.3 Zoonotic Diseases

Zoonotic diseases are those that affect human beings and animals. In fact, many human diseases originate from animals. Control of zoonotic diseases is important in safeguarding public health. Vaccination of animals against zoonotic diseases such as Rabies, Anthrax, and RVF is the main approach used in control of these diseases.

There is no formal structure for collaboration and regular information exchange between animal and human health sectors for management of zoonotic diseases and other animal based threats to public health. The common approach of providing resources that enhance operational inter sectoral public health plans for prevention, early detection and response to zoonotic disease events including surveillance, field and laboratory operations, communication, capacity building across ministries, disciplines and funding programs has been inadequate. This uncoordinated approach has resulted in little preparedness in response to zoonotic diseases and other animal based threats to public health. Consequently animal and human health, livelihoods and trade are compromised.

The National and County Governments will:

1. Establish “One Health Approach” collaborative platforms, in partnership with stakeholders, for managing zoonotic disease events and other animal based hazards to public health.
2. Support national programs to control zoonoses.

The National Government will:

1. Develop strategies and mechanisms for effective collaboration in management of zoonotic diseases.
2. Mobilise resources for effective control of zoonoses.
3. Review and develop appropriate legislative framework for control of zoonotic diseases.
4. Coordinate management of trans county and transboundary zoonotic diseases.

The County Governments will:

1. Implement the strategies and policies for zoonotic disease control.
2. Manage zoonotic diseases in collaboration with other stakeholders.

3.4 ANIMAL PRODUCTION AND PRODUCTIVITY

The health of animals is important for optimal production and productivity. Animal production and productivity are influenced by a wide range of factors, including genetic resources, inputs such as feed and fodder, as well as diseases. The animal resource industries experiences high mortalities, low growth rates of food animals and low mature weights compounded by diminishing farm sizes, inappropriate animal production systems, scarce and poor quality feeds and limited access to information. The country experiences a high prevalence of management and transboundary animal diseases, which reduce productivity thus causing massive losses.

3.4.1 Genetic Resources and Breeding

Veterinary Services are critical for genetic improvement and fertility management in livestock, companion animals, aquatic and wild animals. This is in addition to providing expertise, training and guidance to clients in the application of breeding technologies, and undertaking applied research in livestock breeding and genetics. These actions guarantee production of high quality livestock and other animal’s semen, embryos and other genetic materials. Management of breeding diseases and

breeding for disease tolerant breeds of animals are important contributions to the growth of the animal resources industries.

Objective: To develop the animal resources industries by providing and conserving safe and healthy genetic resources through modern breeding technologies.

The National Government will:

1. Support development and review of breeding programmes for animal resources such as cattle, sheep, goats, camels, poultry, bees, pigs, donkeys, horses, dogs, aquatic animals and farmed wildlife.
2. Develop guidelines and standards on breeding methods and practices to safeguard animal health and welfare.
3. Regulate the veterinary components in breeding including standardisation, inspection and approval of hatcheries, breed multiplication farms, Artificial Insemination and other breeding technologies.
4. Provide for artificial insemination and other appropriate breeding technologies and improvement of animal resource genetics.
5. Provide for the conservation of beneficial genetic resources of veterinary importance.

The County Governments will:

1. Promote and implement breeding programmes for animals including cattle, sheep, goats, camels, poultry, bees, pigs, donkeys, horses, dogs, aquatic animals and farmed wildlife.
2. Support and promote provision of Artificial Insemination and other breeding technologies.

Both levels of government will support research and innovation to improve the quality of animals and animal products in order to enhance their competitiveness in the local, regional and international markets.

3.4.2 Animal Feeds, Fodder and Other Inputs

Inputs of veterinary importance include feeds, fodder, veterinary medicines, feed supplements, and genetic materials. Quality assurance of inputs is critical in safeguarding the health, welfare and performance of the animal, safeguarding the health of consumers and protecting the environment. Commercial feed production depends on crop harvests and ingredients including premixes constituted from diverse sources. However, substandard feeds and fodder remain a major challenge in the

animal resource industries. The poor quality adversely affects growth, reproduction and productivity of animals.

Objective: To improve the quality and safety of inputs such as animal feeds for optimum production and productivity.

The National Government will:

1. Develop and enforce standards for production and distribution of safe animal feeds.
2. Establish a mechanism and provide for regulation of animal feeds manufacture, quality assurance, distribution and safe use including registration and approval of establishments and the provision of health requirements for relevant operations.

The County Governments will:

1. Enforce compliance with standards in the production and composition of safe animal feeds.
2. Ensure that all feed manufacturers are registered and approved to safeguard human health, animal health and welfare.
3. Ensure safety of stored animal feed reserves.
4. Support the implementation of strategies for reduction of production costs including subsidies across the entire animal resources industries value chain in inputs especially feeds.

3.4.3 Animal Diseases affecting Productivity

Animal diseases are important in animal productivity. These include external and internal parasites, vectorborne diseases, Foot and Mouth Disease, New Castle Disease and Mastitis. These diseases cause massive economic losses whenever they occur.

Objective: To minimize the impact of diseases on animal productivity.

The National Government will develop strategies, guidelines and support their implementation for control of diseases impacting animal productivity.

The County Governments will domesticate and implement national strategies and guidelines and establish mechanisms for control of production diseases.

3.5 VETERINARY PHARMACEUTICALS

The animal resource industries relies on medicines, chemicals and medical appliances for the prevention, control and management of animal diseases, many of which are transmissible to human beings. Appropriate use of medicines in animals is internationally guided by the OIE to guarantee animal welfare and animal food safety that are important aspects in local and international trade in animals and animal products. The East African Community Sanitary and Phytosanitary (EAC SPS) protocol endorsed by Kenya in 2016 anticipates the Minister in charge of livestock matters to provide for effective regulation of veterinary medicines. The OIE provides standards for regulation of veterinary medicines globally to facilitate access to international animal and animal products markets. Some of the standards are aimed at reducing violative drug residues in animal products and protecting human health. The Livestock Sector is negatively affected by ineffective regulation that has led to misuse of drugs and increased antimicrobial resistance that pose a threat to human and animal health.

Objective: To provide an institutional framework for provision of effective, safe use and disposal of veterinary pharmaceuticals and biologicals.

The National Government will:

1. Domestic international veterinary pharmaceutical standards to safeguard human health and animal welfare.
2. Provide for effective regulation of production, quality assurance, import and export, marketing, sale and safe use of veterinary pharmaceuticals, poisons, pesticides and ethno-veterinary medicines.
3. Develop an institutional framework to provide for the separation of the management of human and veterinary medicines regulation with appropriate linkages to facilitate effective administrative mechanisms for the control and implementation of quality standards, and regulation of veterinary medicines and biologicals.

The County Governments will:

Promote and enforce the appropriate use and disposal of veterinary pharmaceuticals, poisons, pesticides and ethno veterinary medicines, according to the regulations.

3.6 ANIMAL WELFARE AND PROTECTION

Animal welfare and protection is an integral part of animal health and production and manifests in physical and psychological wellbeing, better performance, and improved market access, safe and mutually beneficial companionship. Animal welfare embraces five freedoms of animals namely; freedom from hunger, thirst and malnutrition; freedom from fear and distress; freedom from physical and thermal discomfort; freedom from pain, injury and disease and freedom to express normal patterns of behaviour. Though communities in Kenya uphold the freedom from pain, injury and diseases of animals, there is a general low awareness, recognition and compliance with the other four freedoms, especially in the area of feeding, transportation and certain cultural sports. Non conformity to animal welfare standards can be a barrier to international trade in animals and animal products. Laboratory animal welfare is becoming increasingly important in research and must be observed in all research activities.

Objective: To mainstream animal welfare issues in the value chains within the animal resource industries and ensure compliance with standards.

The National Government will:

1. Develop policies, strategies, guidelines, laws and standards for animal protection and welfare.
2. Provide for regulation of animal welfare based on national guidelines and international standards.
3. Provide an enabling environment for the private sector and members of the public being involved in animal welfare.
4. Ensure protection of all animal species.

The County Governments will:

1. Promote animal welfare through creation of awareness and implementation of national Standards.
2. Develop appropriate legislation based on national guidelines.
3. Provide animal welfare and control services including, control of stray animals and licensing of companion animals.
4. Provide for facilities, for accommodation, care and proper disposal of animal carcasses.

3.7 TRADE AND SANITARY MEASURES

Trade and sanitary measures are important for strengthening trade and guaranteeing market access. The activities include: quarantine and border security, identification and traceability for animals & animal products , international certification, equivalence agreements, transparency, zoning and compartmentalization. The country has taken certain measures to promote market access namely the establishment of Disease Free Zones (DFZ) and compartments to facilitate access to international markets and improve negotiations of bilateral equivalence agreements with other countries.

The World Trade Organization Sanitary and Phytosanitary (WTO-SPS) Agreement recognises the important linkage between health and international trade. These sanitary and phytosanitary measures invariably take the form of quarantines or food safety requirements and recognise the OIE standards as the international standards for trade in animals and animal products. Application of sanitary measures follows a farm to fork chain that is necessary for access to local and high value international markets. However, low compliance by actors along the value chain is a challenge due to inadequate capacity in the measures, which leads to safety concerns.

Objective: To improve compliance with sanitary measures and enhance local, regional and international trade in animals and animal products.

The National Government will:

1. Domestic international standards on trade.
2. Ensure certification of all animals and animal products in accordance with set standards and enforce compliance.
3. Provide for participation of all stakeholders in formulation of international standards of animal trade.
4. Support capacity development for compliance with sanitary measures and quality assurance at all levels in animal value chains.
5. Strengthen national enquiry points and notification authority in line with the WTO-SPS Agreement.
6. Promote access to profitable markets for animals and animal products.

The County Governments will:

1. Enhance awareness of sanitary measures along animal value chains.
2. Enforce standards necessary for trade in animals and animal products.
3. Implement food defense and food safety measures for animal products.

The National and County Governments will:

1. Provide infrastructural development for compliance with sanitary measures.
2. Develop strategies for the eradication of animal diseases including disease free zoning and compartmentalization.

3.7.1 Marketing Infrastructure

Regional and international markets are not fully exploited due to inability to meet SPS Measures and other bilateral trade requirements. Marketing of animals and animal products is essential for the growth and sustainability of the animal resource industries. Marketing chains are distorted with many players who aim at maximizing profits at the expense of producers. Producer groups on the other hand, have access to credit, improve on their powers of negotiation and entrepreneurship, maximize on the economies of scale, encourage adherence to sanitary measures and reach agreements and contracts on the supply of animals and animal products to markets. The private sector plays a leading role in marketing while the government provides regulatory services and an enabling environment. Farmer cooperatives and associations have attempted to streamline marketing channels but they are few and concentrate on a limited range of animals and animal products. The imposition of multiple levies and other forms of taxation across counties increases costs and reduces competitiveness of animal products locally and internationally.

Objective: To make marketing infrastructure and operations for various animals and animal products development comply with national and international standards.

The National and County Governments will:

1. Provide an enabling environment for private sector investments in marketing infrastructure.

2. Continually monitor, evaluate, harmonize and regulate levies, taxes and any charges on animals and animal products in order to ensure a favourable trading environment.

The National Government will:

1. Develop and enforce standards and regulations for the marketing infrastructure to enable compliance with sanitary and phytosanitary measures along the marketing value chains.
2. Provide mechanisms for the private sector to access lucrative markets.

The County Governments will:

1. Provide for an efficient marketing infrastructure and operations for different animal species and animal products development.
2. Support the organization of producers, processors and marketers into viable groups that can access credit, improve on their powers of negotiation and entrepreneurship, maximize on the economies of scale and reach agreements and contracts on the supply of animals and animal products to markets.
3. Provide for tailor made mechanisms and products to support marketing.

3.7.2 Animal Identification and Traceability

Animal registration, identification and traceability is an important tool in production, breeding, census planning, disease surveillance, food safety, certification, food defense assurance, productivity improvement and facilitation of access to local and export markets. The OIE has standards on animal identification and traceability at individual animal and herd levels. The Kenyan law provides for identification through hot iron branding (Branding of Stock Act, Cap 357). The need to trace animal products in the entire food chain and initiatives to implement modern identification and traceability systems of farm animals provide a review basis for this law.

Objective: To establish and maintain appropriate animal identification and traceability systems for improved performance of the animal resource industries.

The National and County Government will ensure that only identified animals can access markets.

The National Government will:

1. Establish a regulatory framework for animal identification and traceability.
2. Develop strategies, guidelines and procedures for identification and traceability.
3. Coordinate establishment of animal identification and traceability mechanisms.
4. Establish a national animal identification database.

The County Governments will:

1. Promote application of identification and traceability measures in compliance with national guidelines and international standards.
2. Enforce animal identification and traceability measures.
3. Provide animal identification and traceability data to the national government.

3.7.3 Livestock Theft

Livestock theft poses a challenge to animal health and welfare. The vice is a source of disease spread due to the uncontrolled movement of animals that it occasions. It is a complex challenge requiring a multisectoral approach. Marketing and trade in animals and animal products are hampered by rampant insecurity. Animal identification will provide a useful deterrent to livestock theft by providing a scientific tool for recovery of any stolen animals. Appropriate animal identification and traceability strategies, guidelines and procedures will greatly enhance security and support livelihoods.

Objective: To minimise the spread of livestock diseases arising from uncontrolled animal movement associated with livestock theft and mitigate the same.

The National and County Governments will:

1. Support and provide resources for multi agency approaches comprising of relevant disciplines and expertise for sustainable response to livestock theft.
2. Support introduction of modern measures of animal identification, tracking and traceability to combat livestock theft.

3. Ensure cross border coordination of disease control programmes to mitigate incidences of disease spread through uncontrolled movement of animals.
4. Support peace building initiatives and promote national cohesion to prevent insecurity in livestock production areas.

3.8 BIOSECURITY

Biosecurity is a set of preventive measures designed to reduce the risk of transmission of infection agents, emerging invasive species and toxic living organisms. Biological materials and toxins can be used for illicit or malicious purposes such as bioterrorism. Biosecurity measures are normally put in place to detect and prevent loss or theft of these agents. In veterinary services, biological materials and toxins are usually used in laboratories, animal and manufacturing facilities and in the field, thus making them a potential biosecurity risk to workers, the public and the wider environment.

Objective: To provide biosecurity in establishments that handle animal hazards.

The National and County Governments will:

1. Provide mechanisms for implementing biosecurity risk management in the animal resource industries.
2. Improve infrastructure in relevant facilities to ensure biosecurity.

The National Government will:

1. Develop biosecurity standards and protocols and implement biosecurity risk management.
2. Provide capacity building on biosecurity and bio preparedness.
3. Strengthen biosecurity legislation in collaboration with stakeholders.

3.9 ANIMAL RESOURCES' STATISTICS, INFORMATION AND COMMUNICATION

Effective animal health and food safety interventions depend on the collection, analysis, storage and communication of accurate data and information. The animal resource industries's potential for reducing poverty and contributing to economic growth has remained largely untapped due to lack of accurate data necessary for planning and budgeting. The contribution of the sector to national wealth remains underestimated leading to inadequate financing. Research and

development of animal resources require up to date data that should be easily retrievable. Transparency and quality information management are issues of national, regional and global strategic significance. Communication capacities in veterinary services enable precise response to national and international demands in compliance with set Standards, Guidelines and Recommendations. Trade in animals and animal products calls for accountability of veterinary services towards the public and other stakeholders.

Objective: To develop and maintain accurate, effective and efficient information management systems

The National and County Governments will:

1. Develop effective communication strategies with a focus on stakeholders and the public.
2. Ensure continuous access to human, technical and financial resources in order to manage the animal resource industries information and communication system.

The National Government will:

1. Establish a national database for the animal resource industries.
2. Ensure that periodic censuses are conducted to establish the population of various animal species for planning purposes.
3. Determine the animal resources' contribution to the national economy and livelihoods.
4. Establish a science based information management system in the respective animal resource industries.
5. Develop and implement a communication strategy for the animal resource industries.

The County Governments will:

1. Support collection, collating, storage and analysis of data and information, and timely reporting to relevant government agencies and other stakeholders in the animal resource industries.
2. Provide mechanisms for incentives for animal owners and stakeholders to keep appropriate records.
3. Develop a county-specific communication strategy for veterinary services.

3.10 RESEARCH AND DEVELOPMENT

Animal related research, education and extension programmes are continually changing to address emerging challenges and opportunities brought about by rapidly advancing technologies, evolving consumer demands and the need to make positive contributions to human, animal and environmental health. Efficient, science based animal research translates into affordable and high quality food for the nation and surplus for trade. Animal related research programmes embrace multi disciplinary approaches and integrate education and extension. These programmes focus on activities that are economically sound, socially acceptable and environmentally advantageous. Animal research programmes encompass a balance of disciplines including animal health; animal breeding, genetics and genomics; animal reproduction; animal production, animal welfare, animal products, value addition, marketing and trade; animal use to counteract terrorism and trade in prohibited substances; animal use in security; aquaculture and apiculture.

Animal research and development is mainly undertaken by universities and international, regional and national research institutions. Home grown research is important for present and future development of animal resources which are currently under researched. More than 80 per cent of Kenya is Arid and Semi Arid (ASAL) and is suitable for animal production necessitating a need for dry land development based research. The linkages with extension, farmers, implementers and policy makers remain inadequate. Laboratory or experimental animals are important for research but care and use of laboratory animals for research, testing and teaching is uncoordinated and does not always follow established standards.

Objective: To strengthen relevant research especially programmes geared to demand driven research in animal health, welfare and food safety to enhance development of the animal resources industries.

The National and County Governments will:

1. Support demand driven research on animals and animal products.
2. Facilitate dissemination of research findings and technological innovations through various agencies including non state actors.

The National Government will:

1. Establish a focused research institution to address the requirements of the animal resources industries'including livestock and companion animals.

2. Develop strategies and regulations that influence research in animal health, welfare and food safety.
3. Promote participation in inclusive research agenda setting and promote collaborative linkages.
4. Develop regulations on the scope, care and use of animals in research.

3.10.1 Genetic Engineering

Genetic engineering refers to technologies that alter the genetic makeup of organisms such as animals, plants and bacteria through genetic modification techniques to confer greater resistance to diseases, increase productivity, improve hardiness and feed efficiency. Genetic modification can increase yields of meat, eggs and milk and improve animal health and disease diagnostic methods. Genetically Modified Organisms (GMOs) constitute a source of genetically modified foods and are widely used in biological and medical research, production of pharmaceutical drugs and experimental medicine. There is broad scientific consensus that food and other products derived from GMOs pose no greater risk to human health than conventional ones. However, GMOs may adversely impact human health through transfer of antibiotic resistance markers, increased allergic reactions and other unknown effects. Potential environmental impacts include unintended transgenic transfer through cross pollination, unknown effects on other organisms and loss of biodiversity.

Objective: To support the utilization of safe genetic engineering technologies for enhanced development in the animal resources industries.

The National and County Governments, in partnership with relevant agencies, will promote research on GMOs and appropriate uptake of genetic engineering to enhance animal production and related services. It will also help in responding to other challenges in the animal resource industry while protecting human and animal health and welfare in addition, to environmental health.

3.11 EXTENSION SERVICES

Extension service is a critical factor in addressing animal health to improve animal production and productivity necessary for transforming traditional animal practices into viable commercial enterprises. It serves the role of transferring knowledge and technologies to stakeholders and involves dissemination of information on animal production, health and

welfare, food safety, value addition and trade. The service provides information aimed at improving productivity of animals in order to increase farmers' incomes, enhance their standards of living, promote household food security and reduce poverty by maintaining healthy animals. For many years, extension services were dominated by the Government. However, due to the decline in budgetary support and the need to engage non state actors, community based organisations, nongovernmental organisations, the private sector and individual consultancy groups are now offering these services.

Objective: To strengthen delivery of appropriate, cost effective and accessible information on veterinary innovations and knowledge in animal health and food safety.

The National Government will:

1. Provide guidelines and standards for delivery of appropriate, cost effective and accessible information on veterinary innovations and knowledge in animal health and food safety.
2. Provide for an appropriate regulatory framework for provision of extension services in animal health, welfare and food safety.
3. Develop and disseminate information packages that are aimed at public education and awareness creation.

The County Governments will:

1. Provide for extension services including modern extension delivery channels including employing ICT in the animal health, welfare and food safety.
2. Ensure that there are adequate resources to support extension service delivery.
3. Ensure compliance with the set standards and monitor and evaluate extension service providers.

3.12 CAPACITY BUILDING

Capacity building for effective delivery of Veterinary Services includes development of institutions, infrastructure, human and financial resources. Day one competencies and continuing education is pivotal in achieving a large number of targets. Abiding by standards on day one competencies and institutionalizing continuing education systems or continuous professional development programmes needs to be developed by the veterinary authorities at both levels of government in collaboration with Kenya Veterinary Board (KVB). Training of animal

keepers and other other value chain actors is accomplished through extension services. Students receive pre service training in middle level colleges and tertiary education institutions including universities. Graduates are involved in a mandatory internship which is a prescribed period of compulsory hands on training for animal health professionals. It is a legal requirement to practice only after graduation from an approved training institution. This is aimed at integrating the knowledge received by the graduates during their college studies with clinical work. However, quacks still practice unnoticed in remote areas that require attention of regulators and policy makers.

Objective: To continuously develop adequate capacities for delivery of quality veterinary services and related support services to better serve the animal resources industries.

The National and County Governments will:

1. Mainstream continuous professional development in the animal resources industries.
2. Strengthen internship programs for veterinary surgeons and veterinary paraprofessionals to enhance their training for better service delivery to the animal resources industries.
3. Support the development of capacity building facilities.
4. Implement capacity building strategies and programs.

The National Government will;

1. Provide for and regulate training to improve skills, knowledge and aptitude of professionals in the animal resources industries.
2. Continuously develop and review the scope, management, financing, coordination and monitoring of internship.
3. Develop institutional capacities of county governments and relevant agencies in the delivery of veterinary services.
4. Develop strategies for capacity building initiatives including internship.

The County Governments will:

1. Support the training of extension service providers and animal keepers and other value chain actors.
2. Implement national and develop own strategies for capacity building initiatives including internship

3.13 VETERINARY GOVERNANCE

Good governance in veterinary services entails measures for checks and balances in the management systems and command structure, the rule of law and participation of all stakeholders in decision making and management processes. Veterinary Services are classified as a global public good for which the Veterinary Authority takes primary responsibility with regard to good governance and service delivery in accordance with national and international standards and public expectations. The governance must be within an effective, structured national legislative framework supported by appropriate financial and human resources. The establishment of good governance of veterinary services, based on a close partnership between the public and private sectors falls within the responsibility of the government. Effective governance of veterinary services contributes to “public goods” such as food security, public health and alleviation of poverty. Considering that Kenya ratified the WTO’s SPS Treaty where the competence of the Veterinary Services is maintained through a clear command structure, the services at the county shall be technically linked to the national services with matrix reporting and feedback system veterinary events. The current numbers of personnel at National and County levels are not based on a needs assessment, but are influenced by the political and administrative breakdown of government structures. The human resource capacity of the competent veterinary authority is aging and requires appropriate succession planning.

The number of professionals and paraprofessionals in the ASALs are sub optimal encouraging the use of inadequately trained community members.

Objective: To ensure existence of an appropriate governance structure for effective and efficient delivery of veterinary services countrywide.

The National and County Governments will:

1. Strengthen veterinary governance through provision of adequate human, material and financial resources for effective delivery of Veterinary Services in public and private sectors.
2. Prioritise development of an effective consultation and cooperation mechanism in line with national laws as well as international treaties ratified by Kenya.

3. Provide an enabling environment for the private sector to operate in delivery of animal health, production, welfare and food safety services.
4. Recruit and distribute qualified human resources for the effective delivery of animal health and food safety services and in particular in the ASALs.
5. Ensure that the technical heads of Veterinary Services at County and National levels are registered Veterinary Surgeons capable of realtime reporting of disease events.

The National Government will:

1. Provide institutional and legislative frameworks for the improvement in the delivery of Veterinary Services.
2. Ensure that Veterinary Services have the authority and the capability to carry out their functions through establishment of an appropriate command structure.
3. Provide guidelines for optimal human resource capacity for service delivery.
4. Develop mechanisms for delegation of specific aspects in the delivery of veterinary services by the Competent Authority to the private sector, individuals, nongovernmental organizations and other governmental agencies.

3.14 REGULATION OF THE VETERINARY PRACTICE

The foundation of a viable and competitive animal resource industries is in the quality of animal health and welfare services. Poor quality services result in unmitigated animal health and welfare concerns: low animal productivity, disincentives among producers and traders, residues and contaminants in products and eventual access barriers in the local and export markets. KVB plays a critical role in regulating the veterinary practice necessary for the improvement of service delivery and other critical competencies. Professional competencies of veterinary professionals and paraprofessionals can be further strengthened through updating, international harmonisation and or evaluation. The Board is expected to develop and implement an evaluation programme for veterinary professionals and paraprofessionals under their jurisdiction and to strengthen collaboration and oversight over the respective veterinary educational establishments in Kenya. This is subject to legal provisions, regarding uniform training standards and general curriculum

development, and in the case of veterinary professionals, required day one competencies. Kenya has a widely recognised veterinary training and a large number of veterinary surgeons and veterinary paraprofessionals that are adequate to offer services to the animal resource industries. However, weak regulation, inadequate monitoring and supervision of service providers have resulted in abuse of the veterinary practice as well as misuse of veterinary medicines.

Objective: To strengthen regulation of veterinary practice and ensure effective and efficient performance of the veterinary practice.

The National and County Governments will:

1. Provide an enabling environment to support the activities of the Veterinary Statutory body and the professional associations.
2. Ensure that only one veterinary statutory body regulates the practice in animal health, animal welfare, food safety and related training for all cadres of service providers in Kenya in line with international standards.

The National Government will:

1. Strengthen the sole veterinary statutory body to fully execute its mandate and enhance its autonomy and capacity.
2. Ensure that practitioners in animal health attain the minimum qualifications including that for community based animal health workers to attain, at least, a certificate qualification in animal health from an institution recognised by the veterinary statutory body.
3. Support effective regulation of the practices, procedures, operations, activities and programs in veterinary services.
4. Ensure regulation of training in veterinary courses is undertaken by the veterinary statutory body to accord with international standards.

3.15 OCCUPATIONAL SAFETY AND HEALTH

Occupational safety and health standards and requirements protect the safety, health and welfare of workers, customers and other people who may be affected by the workplace environment. The goals of occupational safety and health plans include fostering a safe and healthy working environment. Delivery of veterinary services involves a number of occupational risks including diseases, injuries and a hostile working environment. Safety of veterinarians, veterinary paraprofessionals, leather development personnel, zoologists in veterinary services and

veterinary laboratory personnel working in the sector therefore needs to be taken into consideration.

Objective: To mainstream and strengthen occupational safety and health provisions in animal health, welfare and food safety services.

The National and County Governments will promote compliance with occupational safety and health requirements to protect veterinarians, veterinary paraprofessionals, leather development personnel, zoologists in veterinary services, veterinary laboratory personnel, clients seeking veterinary services and other relevant personnel from risks at work. They will further provide for mitigation measures.

3.16 VETERINARY SERVICES' INFRASTRUCTURE

Appropriate infrastructure is necessary for optimum animal health, production, food safety and trade related services. This includes suitable establishments, premises, animal inspection and disease management structures, sale yards, loading ramps, border control facilities, slaughter and processing plants and laboratories. Many stakeholders are involved in infrastructure development but need harmonisation and targeting in order to support efficient animal production, movement and trade. Animal health, food safety and food defense related infrastructure are standardized under the OIE and Codex Alimentarius Commission (CAC) systems and therefore require official inspection and approval.

Animal enterprises depend on good roads, railways, airports, border posts, harbors and telecommunication infrastructure for optimal performance. Bitumen roads and railway lines cover only a small section of the country and do not extend to vast animal production areas especially the ASALs. The infrastructure is not adequate for efficient trade in animal commodities. ICT network is fairly widespread except in the ASALs while there is generally low internet connectivity in the country. This has made it difficult for appropriate information management that is necessary for vibrant animal production. The 21st Century is highly dependent on ICT for development. ICT has given rise to the phenomenon of the global village where information exchange is easily conducted among nations of the world. Animal resources' development priorities that directly benefit from ICT include disease surveillance, extension services, research, training, marketing and trade.

Objective: To improve delivery of veterinary services through appropriate infrastructure development.

The National and County Governments will:

1. Support improvements and development of infrastructure in partnership with stakeholders for optimum animal health, production, welfare, food safety and trade.
2. Promote the use of ICT in disease surveillance, reporting, traceability, general animal health, production and welfare.
3. Ensure that the veterinary infrastructure including laboratories, farms and relevant institutions serve their original intended use.
4. Provide mechanisms for the uptake of equalization fund.

The National Government will:

1. Provide for development of physical infrastructure including training institutions, laboratories and quarantine farms.
2. Provide for development and approval of appropriate infrastructure for animal inspection and quarantine.
3. Support the development of veterinary related infrastructure in the ASALs.

The County Governments will facilitate the development and management of veterinary infrastructure such as animal markets, abattoirs, pounds and vector control facilities.

3.17 ANIMAL INSURANCE

Animal insurance covers livestock, companion animal, wildlife and aquatic animals. The health status of an animal is the major criteria for eligibility to insurance cover. The veterinary services will play a crucial role in assessing the animal health risk and mitigating adverse health effects through procedures such as vaccination and herd health practice. The animal resource industries in Kenya faces many challenges, natural and manmade, which have curtailed investment in the industry due to risks. Providing animal owners with insurance is one way of effectively protecting them from risks.

Objective : To improve animal health risk management to mitigate losses and leverage on the economic value of the animal resources.

The National and County Governments will:

1. Support animal insurance to increase investment in animal resources.

1. Provide an enabling environment for affordable credit provision.
2. Provide mechanisms to assess animal health risks and mitigate adverse health effects.
3. Provide financial resources for the delivery of veterinary services.

The National Government will:

1. Develop mechanisms for extending affordable credit to animal based enterprises.
2. Encourage the private sector groups such as cooperative societies, farmer organisations, Non Governmental Organizations (NGOs) and Community Based Organizations (CBOs) to advance credit to animal resource industries value chain players.
3. Provide financial resources for the delivery of Veterinary Services
4. In collaboration with financial service providers, support development of innovative financial / credit products that meet needs of Veterinary Services

The National and County Governments will:

Objective: To improve animal health risk management in order to increase provision of credit in the animal resource industries and provide support for the delivery of Veterinary Services.

Financing Veterinary Services is important for the development of the animal resource industries. Veterinary Services guarantees the health of animals and the intrinsic value of animal is pegged on its health status. The mainstream financial institutions view livestock enterprises as risky and therefore provide expensive credit that is beyond the reach of the needy small-scale farmer. Demand for collateral for such loans precludes many of the small scale farmers from accessing loans particularly in the ASALs where land tenure is mainly communal.

3.18 FINANCIAL SERVICES

The County Governments will strengthen risk management strategies and develop tailor made programs to mitigate losses and leverage on the economic value of the animal resources.

The National Government will provide an enabling environment to encourage investment in animal insurance.

2. Provide mechanisms to assess animal health risks and mitigate adverse health effects

The County Governments will:

1. Develop or support programs geared towards availing credit packages appropriate for individuals or groups involved in the animal resource industries value chain.
2. Ensure budget allocation for delivery of veterinary services.

3.19 CROSSCUTTING ISSUES

Crosscutting issues encompass aspects that impact the animal resource industries directly or indirectly but are not limited to animal resources. They include environment, climate change and disasters, gender and pro poor measures, youth, credit facilities and land.

3.19.1 Environment, Climate Change and Disasters

Climate change refers to the gradual variation in parameters such as temperature and rainfall over time. Ruminating animals produce methane which, like carbon dioxide, is a potent greenhouse gas that contributes to climate change. Disasters like drought and massive flooding displace communities and contribute to the spread of vector borne, contagious and infectious diseases like FMD, RVF, Nairobi Sheep Disease, Bluetongue and Lumpy Skin Disease (LSD) . Drought and floods also lead to wind or water erosion of top soils and destabilize the range environment.

Land and water are components of the environment that constitute important factors of animal production, health and processing of animal products. Overgrazing results in vegetation loss accompanied by land degradation that can lead to desertification in the long term. Various types of wastes are generated along different animal value chains including animal health care wastes such as chemicals, sharp objects like needles and broken glass bottles, used media and pathological wastes from laboratories, expired medicines and veterinary biologicals. Animal production wastes encompass, among others, urogenital and gastrointestinal discharges, remnants of feeds, particularly roughages and components of abandoned animal housing structures. Processing of animal products in establishments like slaughterhouses, tanneries, dairies and feed manufacturing plants generate a wide range of wastes that need to be properly managed to prevent environmental pollution.

Objective: To mainstream and adopt use of environmental best management practices in the animal resource industries to safeguard animal health and welfare related disasters.

The National and County Governments will:

1. Ensure protection of the environment and conservation of natural resources.
2. Provide for effective and sustainable waste disposal mechanisms, along the animal value chains, backed by a suitable legal framework.
3. Ensure coordination of disaster response initiatives and preparedness.

The National Government will:

1. Develop and implement, in collaboration with stakeholders, strategies for early warning, preparedness and rapid response to mitigate disasters that affect animal health and welfare.
2. Develop and implement, in collaboration with stakeholders, appropriate measures to respond to disasters in the animal resource industries.

The County Governments will:

1. Mainstream, in the animal resource industries, in collaboration with stakeholders, early warning, preparedness and rapid response to mitigate disasters that affect animals.
2. Promote measures in collaboration with stakeholders, to address losses that arise from natural and manmade disasters that have an impact on animal resources.

3.19.2 Animal Resources and Gender, Youth and Persons with Disabilities

Women contribute approximately 60-80 per cent of the labour force in the animal resource industries and work longer hours than men yet they have limited access to and almost no control over land and other factors of production. The level of poverty in Kenya is estimated to be 36.1 per cent. Whereas both men and women are affected, women, because of various factors that include cultural disadvantages, are particularly vulnerable, (KNBS, 2018). Exploitation of animal resources partly addresses the problem of poverty, but poverty in itself, can hinder entry and investment in the animal resource industries. Pro poor measures need to be instituted in the strategies for the development of animal resources to encourage uptake of animal based enterprises and in the process, improve livelihoods and economic stability.

The youth form 60 per cent of the labour force but many of them have not been absorbed in the job market owing to the country's low economic growth rate. They have remained at the periphery of the country's development affairs and their status has not been accorded due recognition.

Persons with disabilities represent approximately 10 per cent of the world's population and 80 per cent of them live in developing countries. Arising from this recognition, all organisations and institutions are expected to provide a supportive environment for their personal wellbeing and professional advancement while mainstreaming disability considerations in their plans.

Objective: To support effective participation of women, youth and persons with disabilities (PWD's) in the delivery and utilization of Veterinary Services.

The National and County Governments, in collaboration with stakeholders, will:

1. Ensure that all strategies, programmes and projects in the animal resource industries are engendered.
2. Promote gender transformative strategies that encourage active participation of men, women, youth and PWDs in the animal resource industries.
3. Mainstream pro poor measures in plans, projects and programmes to develop the animal resource industries.
4. Ensure that the youth participate in the development of the animal resource industries programmes including production processing, marketing and access to resources.
5. Mainstream disability considerations in the animal resource industries and discourage discrimination of personnel on account of disability;
6. Support the progressive implementation of the principle that at least five per cent of animal resource industries personnel in appointive posts are persons with disabilities.

3.19.3 Land

Land is essential for development of animal resources. Land is classified into three categories i.e. communal, government and privately owned land. Increasing human population has prompted continuous land

subdivision into uneconomic units that are unsuitable for animal enterprises. Reduced land areas restrict animal movements in search of pastures thus contributing to degradation, soil erosion, siltation of waterways and recurrent flooding.

Objective: To ensure the utilization of appropriate land use systems for the development of suitable enterprise in the animal resources industries.

The National and County Governments will:

1. Ensure that animal owners maximize on suitable enterprises through utilization of appropriate land use systems.
2. Support rehabilitation of degraded lands and promotion of suitable animal production systems for specific agro ecological zones with animal health and welfare considerations.
3. Prioritise protection of land set aside for veterinary services.

3.19.4 Human Wildlife Conflicts

As human population expands and the effects of climate change present new challenges, human wildlife conflicts have become frequent in communities that border national parks and game reserves. The conflicts take various forms including; competition for water and pastures, predator menace, animal disease outbreaks and pests, human encroachment, poaching, hunting and poisoning. Peaceful coexistence with wildlife has come under serious threat as government interventions are viewed as inadequate or unsatisfactory.

Objective: To manage human wildlife interface conflicts in order to facilitate stable coexistence.

The National and County Governments will:

1. In collaboration with relevant institutions, support development and implementation of appropriate measures to mitigate domestic animals wildlife disease interface conflicts in communities that border national parks and game reserves.
2. In collaboration with relevant institutions, develop mechanisms for adequate compensation where domestic animals wildlife disease interfaces result in injury to or loss of animals.

3.19.5 Integrity and Ethics

Professionalism and integrity, as emphasized in chapter six of the Constitution of Kenya, are key to delivery of quality services to all stakeholders in the animal resource industries. Corruption limits

equitable access to resources, impedes growth of the industries and discourages local and foreign investors.

Objective: To uphold integrity and ethics, at all times, in the animal resource industries and to develop and maintain zero tolerance to corruption in the animal resource industries.

The National and County Governments will:

1. Ensure that service providers in the animal resource industries uphold the professional code of integrity and ethics in service delivery to all stakeholders.
2. Provide for establishment of systems to discourage the practice of corruption in the animal resource industries through professional regulatory bodies and institutionalization of appropriate anticorruption measures.

3.19.6 HIV/ AIDS and other Debilitating Diseases

The animal resource industries has not been spared from debilitating diseases majority of which are preventable including the Acquired Immune Deficiency Syndrome (HIV/AIDS) and conditions associated with it such as tuberculosis and the lifestyle diseases . These debilitating diseases affects both service providers and animal producers. These diseases have had profound social and economic implications as they limit productivity of the labour force in a highly labour intensive sector. Resources, both human and financial, have been diverted to care for the sick and orphaned.

Objective: To minimise the socioeconomic impacts of debilitating diseases including the HIV/AIDS in the animal resource industries in order to realize optimum human health for increased animal production and productivity.

Both levels of governments, in collaboration with stakeholders, will continue to implement measures aimed at controlling debilitating diseases including HIV/AIDs to minimise their socioeconomic impacts and maximize resources for improved production.

3.19.7 Drug and Substance Abuse

Drug and substance abuse affect workers making them unable to carry out their duties. The vice is related to petty crime where victims become corrupt and steal in order to access money for buying drugs. Both levels of government require institutions to develop capacities and implement measures to curb the vice within their organisations.

Objective: To eliminate drug and substance abuse from the animal resource industries.

Both levels of governments will mainstream relevant policies and build capacity of veterinary institutions to prevent and control drug and substance abuse within their ranks.

CHAPTER FOUR : IMPLEMENTATION FRAMEWORK

The implementation framework of this Policy shall be based on the legislative interventions and enabling institutional mechanisms; public private sector partnerships; financing and investment; monitoring and evaluation and finally developing and implementing an effective communication strategy. The government in consultation with stakeholders in the animal resource industries and development partners will develop plans to guide the implementation of this Policy including the required human and financial resources at the national and county governments. The plans will provide for the reorganization, strengthening and refocusing of existing agencies and institutions and establishment of others, including providing an enabling environment for the private sector, to operationalize this Policy. Further, strategies , sub policies and action plans as appropriate will be developed to operationalize this Policy.

4.1 LEGAL FRAMEWORK

The legal framework for animal health, welfare, production, food safety and trade certification in Kenya can be grouped in three categories (Annex 3). The first category, comprising of the Acts of Parliament that are solely implemented nationally by the Veterinary Services; the second category comprising of Laws that are implemented nationally by various sectors, including Veterinary Services; third category comprising of County Laws developed by County Governments and implemented by County Veterinary Services and other county authorities. The existing veterinary laws need to be reviewed and new ones developed to address emerging challenges and to effectively serve the animal resource industries and achieve conformity with the Constitution and relevant international treaties ratified by Kenya.

4.2 INSTITUTIONAL FRAMEWORK

Institutions that will play leading roles in the implementation of this Policy include National and County Departments and Agencies responsible for or involved in animal health, welfare, production food safety and trade. The government agencies include: Kenya Veterinary Board, Kenya Dairy Board (KDB), Kenya Meat Commission (KMC), Kenya Veterinary Vaccines Production Institute (KEVEVAPI), Kenya Animal Genetics Resource Centre (KAGRC), Kenya Tsetse and Trypanosomiasis Eradication Council (KENTTEC), Veterinary Medicines Directorate, Animal Health Inspectorate Service, Kenya Agricultural and Livestock Research Organization (KALRO),

Universities, Kenya Wildlife Service (KWS) and other institutions in the animal resource industries implementing veterinary related functions.

Private institutions that will support the implementation of the policy include: financial institutions, pharmaceutical institutions, academic institutions, cooperative societies and input suppliers, among others. Relevant nongovernmental organisations include community based organisations, development partners and professional associations that will be important in the policy implementation. Collaborating institutions including International research institutions are shown in Annex 3. For the purpose of this Policy, other agencies dealing with wildlife, aquatic animals, agriculture, animal welfare and public health, standard setting bodies, international organisations, regional economic communities among others will be essential in implementation of this Policy.

4.2.1 The National Government

The National Government will be responsible for international commitments, trans county challenges, policy development and implementation, transboundary animal diseases, food safety of animal origin, quality assurance and regulation of services. National Government is also involved in implementation of activities involving disasters, national programs and strategies, animal health food safety issues crossing beyond county boundaries, regulation and other challenges. The ministry in charge of Veterinary Services will be responsible for oversight and it shall implement this Policy through its respective departments and agencies. The Veterinary Services of Kenya shall be the Competent Authority in all matters of animal health, welfare and food safety of animal origin in domestication of international standards and guiding implementation of the same. The Veterinary Services shall develop and maintain a chain of command in line with the treaties ratified by Kenya to safeguard trade and establish a food safety service to guarantee consumer protection of all foods of animal origin.

4.2.2 The County Governments

County governments will implement this Policy through the relevant departments and agencies. Individual counties will develop action plans, legislations, strategies and work plans in line with this policy. The Constitution provides for County governments to be responsible for crop and animal husbandry, livestock sale yards, County abattoirs, plant and animal disease control, fisheries, animal control and welfare. This Policy will guide the effective undertaking of these functions.

4.2.3 Intergovernmental Relations

Article 6 (2) of the Constitution provides that there will be two levels of government that are distinct and interdependent and shall conduct their mutual relations on the basis of consultation and cooperation . Article 189 1(c) further provides that governments at each level shall liaise with government at the other level for the purpose of exchanging information, coordinating policies, administration and enhancing capacity. The Fourth Schedule of the Constitution provides for County and National governments functions in the Agricultural Sector and the Intergovernmental Relations Act 2012 or any other relevant law provide for interaction and collaboration between the two levels of governments.

The Intergovernmental Relations Act provide for both levels of government to cooperate and consult on a regular basis to ensure availability of affordable quality Veterinary Services at all times. The leadership in the National and County governments will respectively take responsibility for development of annual implementation plans for this Policy. Whenever appropriate, the National and/or County governments will individually or concurrently establish institutions to address new developments in Veterinary Services.

4.2.4 Veterinary Services

Veterinary Services include animal health and production, animal welfare, veterinary public health, marketing and trade in animals and animal products. The services are categorized into public and private components with the former comprising National and County Veterinary Services. Delivery is provided by the national and the county governments and the private sector.

4.2.4.1 Public Veterinary Services

Public Veterinary Services comprise both National and County Government Veterinary Services. The National Veterinary Services mainly performs the following functions: development and review of veterinary related policies; regulation of veterinary services; veterinary certification for import and export of animals and animal products; Veterinary laboratory diagnostic services; disease surveillance in collaboration with County Veterinary Services, enforcement of food safety standards and procedures, developing and enforcing implementation of animal welfare standards and capacity building and the control of national trans boundary diseases among others. The County governments are responsible for animal disease and pest control,

livestock sale yards, county abattoirs, animal control and welfare in addition to other roles assigned in the Policy.

4.2.4.2 Private Veterinary Services

Private Veterinary Services include the following; advisory and extension services, clinical and surgical practice, herd health programs, sale of veterinary products, reproductive technology services and vaccinations among others. Public Veterinary Services can also be delegated to Private Veterinary Service providers. The private sector in the delivery of Veterinary Services faces challenges that include lack of startup capital, high cost of credit, unfair competition from quacks and non recognized practitioners, a poor clientele with variety competing essential needs and a noncommercial approach to managing animal resource industries enterprises . These are some of the factors that hamper the growth of Private Veterinary Services.

4.2.5 Collaborating Institutions to support Policy Implementation

4.2.5.1 Kenya Veterinary Board

The KVB is the veterinary statutory body established under the Veterinary Surgeons and Veterinary Paraprofessionals Act of 2011, to supervise and regulate the training business, practice and the employment of veterinary surgeons and the veterinary paraprofessionals in Kenya and advise government in relation to all aspects of veterinary practice, among other functions: register and license veterinary surgeons and veterinary paraprofessionals; regulate training of veterinary surgeons and veterinary paraprofessionals and to carry out inspection of Veterinary Service providers . KVB shall be supported to build its capacity to fully carry out its mandate in guaranteeing quality of delivery of Veterinary Services delivered by the National or County Governments and the Private Sector through out the Kenyan territory.

4.2.5.2 Kenya Meat Commission

The Kenya Meat Commission (KMC) was established in 1950 under the Kenya Meat Commission Act, Cap. 363, to promote the country's meat industry through the purchase and slaughter of livestock and to act as a strategic drought management agent as a buyer of last resort. The Veterinary Authority are responsible for the sanitary mandates at KMC. KMC is expected to be restructured to address the current needs of the industry.

4.2.5.3 Kenya Dairy Board

The Kenya Dairy Board (KDB) was established under the Kenya Dairy Industry Act, Cap 336 of 1958 to regulate, organize and develop an efficient dairy industry in the country. KDB performs regulatory, promotional and developmental functions in the dairy industry. However, recent developments including the Constitutional provisions have justified the need for separation of the functions so that KDB focuses on the regulatory role with regards to food safety while the developmental aspects are handled by county governments and other agencies.

4.2.5.4 Kenya Animal Genetics Resource Centre

The Kenya Animal Genetics Resource Centre (KAGRC) was created on 5th September 2011 as a State Corporation vide Legal Notice No. 110. It took up the roles of the former Central Artificial Insemination Station that was established in 1946 with the objective of controlling reproductive diseases and genetic improvement of exotic dairy cattle through collection and distribution of quality bull semen. KAGRC runs the Bull Station at Kabete for the production of bull semen. The Constitution provides for the recognition and protection of genetic resources and their use by the communities of Kenya including documentation, patenting and preservation of the country's animal genetic resources of all species. Focus is on strengthening KAGRC to produce strategic disease free animal genetic resources for distribution and support for effective regulation and conservation.

4.2.5.5 Kenya Veterinary Vaccines Production Institute

The Kenya Veterinary Vaccines Production Institute (KEVEVAPI) was established as a parastatal institution via Legal Notice No. 223 of 4th June 1990. It is currently classified as a strategic commercial state corporation. The original facility was built in 1957 as a joint venture between the Kenya Government and the Wellcome Trust foundation and currently produces 15 different types of animal vaccines.

The Institute's mandate is to produce; to market and distribute veterinary vaccines locally and externally; to undertake research in vaccine development and production; to develop and produce chemicals, media and laboratory materials for use in the production of vaccines and other veterinary products and to provide information on the suitability and effectiveness of veterinary vaccines. The institute is a strategic source for certain essential vaccines used in the East Africa region. The Policy supports capacity building of the institute to enable it address its challenges.

4.2.5.6 Kenya Tsetse and Trypanosomiasis Eradication Council (KENTTEC)

The Kenya Tsetse and Trypanosomiasis Eradication Council was established under the State Corporation Act on 27th July 2012 vide Legal Notice No. 77. It is mandated to be the agency on strategies, resource mobilization, linkages and coordination of tsetse and trypanosomiasis eradication matters in Kenya. It is the successor of Pan African Tsetse and Trypanosomiasis Eradication campaign (PATTEC) which arose from the decision (Decision AHG/Dec.156 (XXXVI) of African Heads of States and Governments to free Africa from the scourge of trypanosomiasis. The realisation of this decision will lead to economic gains and poverty alleviation through reclamation of tsetse infested environments for animal production, human habitation and wildlife based tourism. The Policy will support KENTTEC in its tsetse and Trypanosomiasis eradication efforts.

4.2.5.7 Kenya Agricultural and Livestock Research Organisation

The Kenya Agricultural and Livestock Research Organisation (KALRO) was established by the Kenya Agriculture and Research Act No.17 of 2013 and has consolidated crop and animal research and established specific research institutes to take up various aspects of animal research. The institutes include Veterinary Science Research Institute; Livestock Research Institute; Fisheries and Marine Research Institute; Arid and Range Lands Research Institute; Genetic Resources Research Centre; Biotechnology Research Institute; Beef Research Institute; Apiculture Research Institute; Dairy Research Institute; Non Ruminant Research Institute; Sheep and Goat Research Institute and Wildlife Research Institute. The Policy proposes future reform of KALRO to provide for a focused research on animal resources especially livestock and companion animals distinct from the crop research. A separate Kenya Livestock Research Organization will be established.

4.2.5.8 Public Training Institutes

Training for manpower needs is undertaken by the universities and middle level colleges. Universities are critical in the training of undergraduate and postgraduate degree manpower necessary for Veterinary Services and they include the University of Nairobi and Egerton University.

The public sector in the animal resource industries currently has four categories of training institutes offering diploma and certificate courses consisting of the Animal Health and Industry Training Institutes

(AHITIs), The Meat Training Institute (MTI), The Dairy Training Institute (DTI) and the Livestock Training Institute, Griftu Wajir. The Animal Health and Industry Training Institutes in Kabete, Nyahururu and Ndomba were established in 1963, 1979 and 1984 respectively. They were established to train in various skills for livestock technicians and categories of veterinary paraprofessionals for government veterinary and other livestock industry services. However, with the structural adjustment provisions of 1992 and rationalization of the Public Service, graduates were no longer directly absorbed by the government and ended up in the private sector.

The Meat Training Institute (MTI) at Athi River was founded as a Regional Training Centre for Meat Inspection and hygiene personnel by the Government of Kenya and the Food and Agriculture Organisation (FAO) in 1972. It was meant to train personnel for English speaking sub-Saharan African Countries before they developed their own training centres. The institute has developed training programmes for meat industry personnel in order to improve food safety standards. The MTI mandate shall be restructured to provide for training in product safety for all products of veterinary public health importance.

The Dairy Training Institute (DTI) in Naivasha was established in 1963 with the mandate of training personnel from Kenya and other countries on value addition to milk and dairy products. The graduates serve the dairy industry by offering appropriate extension services and carrying out necessary value addition to milk and dairy products including the food safety aspects.

All the Livestock Sector training institutes shall be restructured under a new legislative and institutional framework to provide for among other services training, consultancy and research services designed to serve the respective industries covering animal resources and promote national development and standards of competence and integrity. Other public and private training institutions exist for producing manpower useful for the individual animal resource industries shall be supported to continue playing the critical madate.

4.2.5.9 Kenya Leather Development Council

The Kenya Leather Development Council (KLDC) was established on 9th September 2011 as a state corporation under Cap. 446 with a mandate to oversee matters relating to the promotion, development and processing of and trade in hides, skins, leather and leather goods. The leather Industry has great potential for contributing to the National

economy through foreign exchange earnings, improvement of livelihoods, employment creation and rural development and should therefore be supported to perform even better. The Policy shall support KLDC to ensure sustainable growth of the industry.

4.2.5.10 Veterinary Medicines Directorate

The Veterinary Surgeons and Veterinary Paraprofessionals (VSVP) Act Section 39 established the Veterinary Medicines Directorate (VMD) to serve as an autonomous governmental Institution responsible for the regulation of manufacture, importation, exportation, registration, use and trade in veterinary medicines and poisons. The VMD shall provide for effective regulation and guaranteeing safe usage of veterinary medicines on the farms. Protection of animal health in order to also safeguard the human health is important in order to eliminate abuse and misuse of the veterinary medicines. This helps to prevent loss of livestock and unsafe food of animal origin due to violative drug residues which deny the country access of livestock products to the lucrative markets and endanger consumers of meat, milk and other animal products. The Pharmacy and Poisons Act Cap 244 shall be amended to facilitate the VMD operationalization to serve as a distinct and focused entity regulating veterinary medicines. The Veterinary Medicines Directorate Regulations shall be upgraded into an Act of Parliament to provide a firm foundation for veterinary medicines regulation and achieve the ultimate institutional separation of human and veterinary medicine regulation.

4.2.5.11 Animal Health Inspectorate Service

The Veterinary Surgeons and Veterinary Paraprofessionals (VSVP) Act Section 39 established the Animal Health Inspectorate Service which shall be operationalized to support the delivery of Veterinary Services in carrying out the quality assurance and any other relevant functions especially for inputs and some products in the Animal Resources Industries.

4.2.5.12 Other collaborating Institutions

In the implementation of Veterinary Policy, Kenya will collaborate with several national, regional, continental and international organisations :

4.2.5.12.1 National Institutions

The animal resource industries in Kenya involves many institutions, both private and public, in the execution of its programmes and implementation of its mandate. These institutions include but not limited

to Fisheries, Cooperatives, Ministry of Health, Kenya Medical Research Institute, Kenya Forestry Service, Kenya Wildlife Service, National Environment Management Authority, Kenya Revenue Authority, Kenya Bureau of Standards, Kenya Police, Kenya Plant Health Inspectorate Service, National Biosafety Authority, Kenya National Bureau of Statistics, insurance companies and financial institutions (Annex 3).

4.2.5.12.2 Continental and Regional Institutions

The East African Community, Inter Governmental Authority on Development, Common Market for Eastern and Southern Africa and the African Union's Inter African Bureau of Animal Resources among others are critical to the delivery of veterinary services.

4.2.5.12.3 International Organizations

International Organizations include: World Trade Organisation, World Organisation of Animal Health, Codex Alimentarius Commission, International Plant Protection Convention and the Food and Agriculture Organisation of United Nations among others. United Nations affiliated Institutions will be encouraged to support the developments in the Animal Resources Industries through the National Government's Ministry responsible for Veterinary Services to avoid duplications, build synergies and encourage accountability. Other development partners' synergies shall be enhanced through Common Programming Framework.

4.3 PUBLIC PRIVATE PARTNERSHIPS

The private sector is very important in the animal resource industries. It is responsible for most of the animal production, processing and marketing as well as the delivery of animal health and product safety measures in animals and animal product value chains respectively. The private sector is expected to self regulate and enforce industry based good practices. In the area of service provision, it is able to take up delegated "private good" services or work with the government through the public private partnership (PPP) framework.

4.4 FINANCING AND INVESTMENTS IN VETERINARY SERVICES

Veterinary Services are recognised as a "public good" through making available protection of animal health, public health, animal welfare as well as providing poverty alleviation, food security, food safety and market access. This global policy implies that the government is ultimately responsible for mobilising resources and therefore should encourage private investment, public private partnership and

collaboration with financial institutions and development partners in mobilising resources. The government has been supporting the provision of Veterinary Services through the exchequer. The Constitution stipulates that National or County governments may levy charges for services they provide to the public.

To implement this Policy and other related investments, the bigger portion of the funding will be provided to the relevant Ministries, Departments and Agencies (MDAs) by the National and County governments through the exchequer. This will be guided by the national development blue prints like the Kenya Vision 2030 and its Medium Term Plans. However, efforts will be made to mobilize technical and financial support from development partners and regional economic communities including EAC, COMESA and IGAD to realise the objectives of this Policy. Direct financing and investments by the private sector through public private partnerships (PPPs) will be critical to the successful implementation of this Policy.

4.5 MONITORING AND EVALUATION

Development in the animal resource industries will be effectively guided through close monitoring and evaluation at management and technical levels. The objective of Monitoring and Evaluation will be to ensure prudent utilisation of resources against set targets and to learn and document useful lessons for planning purposes. M&E framework is expected to utilize the relevant provisions of the National Integrated Monitoring and Evaluation Systems (NIMES) and have clear terms of reference for relevant stakeholders in data collection and reporting at all levels. There will be an Annual Review Report (ARR) on implementation of the Policy that will be presented to the Intergovernmental forums, the public and relevant stakeholders.

In addition, technical audits of the sector will establish, through risk analysis, the level of success in achieving and maintaining the desired animal health, welfare and food safety status. Instruments that will be utilised for management and technical assessment include performance contracting, compliance monitoring, quality control and evaluation of Veterinary Services. Voluntary peer reviews through tools such as the OIE based Performance of Veterinary Services Pathway for use at all levels

4.6 COMMUNICATION STRATEGY

A communication Strategy will be developed to ensure the exchange of information among the stakeholders thus: Within the national government, the national and county governments, among the county governments, between the government and the private sector, farmers, collaborators and other stakeholders in delivery of Veterinary Services.

4.7 POLICY REVIEW

The Veterinary Policy is a progressive document that outlines a framework and set of principles to guide the growth and development, legislative and institutional reforms in the animal resource industries which is multisectoral, dynamic and vibrant. Hence there will be need to review the Policy as need arises to take into consideration emerging trends in the animal resource industries. In the intervening period, contributions from stakeholders will be received, analysed and stored and will form the basis of reviews.