



REPUBLIC OF KENYA

SECTOR PLAN FOR AGRICULTURE AND LIVESTOCK

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STATEMENT BY THE CABINET SECRETARY THE NATIONAL TREASURY AND PLANNING

Kenya's long term development blue-print, Kenya Vision 2030, is in its third implementation phase under the Third Medium Term Plan (MTP III) 2018-2022. A total of 28 MTP III Sector Plans have concurrently been prepared through 25 MTP Working Groups and three (3) Thematic Working Groups. The Plans provides in detail policies, programmes and projects to be implemented in each sector for the period 2018-2022. The Plans also incorporate policies, programmes and projects necessary for the effective implementation of the "Big Four" initiatives namely: industrialization, manufacturing and agro-processing; affordable housing; food and nutrition security; and universal health care. Ongoing flagship projects and other priority programmes and projects carried forward from the previous Medium Term Plans will also be implemented. The Sector Plans have also mainstreamed key priorities outlined in the Manifesto of the Jubilee Government.

The MTP III and the Sector Plans have been prepared through a participatory and inclusive process involving representatives from the government, development partners, private sector, Civil Society, NGOs, organizations representing vulnerable groups, faith-based organizations and professional associations, among others and in line with the constitutional requirements.

The Sector Plans detail specific programmes and projects for implementation during the plan period, 2018-2022. The programmes and projects outlined in these plans will be implemented in close consultation and collaboration with county governments and in line with the Fourth Schedule of the Constitution. The Public Private Partnerships (PPPs) framework will be the vehicle through which the private sector will contribute to the implementation of programmes and projects highlighted in the plans.

The County Integrated Development Plans, County Spatial Plans and Ministries, Departments and Agencies (MDAs) Strategic Plans (2018-2022) will be aligned to the MTP III and the National Spatial Plan. Implementation of these plans will also be linked to the Results-Based Management Framework through Performance Contracts and Staff Performance Appraisal System.

A robust monitoring and evaluation framework will be put in place. In this regard, National Integrated Monitoring and Evaluation System (NIMES), County Integrated Monitoring and Evaluation System (CIMES) and the electronic Project Monitoring Information System (e-ProMIS) will be fully integrated with other governmental financial systems. This will ensure effective tracking of implementation of programmes and projects and also boost Public Investment Management.

In conclusion, I would like to appreciate the respective Cabinet Secretaries, Chief Administrative Secretaries, Principal Secretaries, staff in the MDAs and all those involved in the preparation of the Sector Plans for their valuable inputs. In addition, I commend staff from State Department for Planning led by Principal Secretary, Planning for the effective coordination of the MTP III preparation process.



Henry Rotich, EGH
Cabinet Secretary,
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FOREWORD

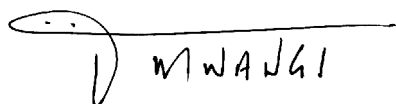
I am pleased to present to you the Agriculture Sector Plan for the Third Medium Term Plan (MTP III, 2018-2022). The Plan gives a focused road-map for addressing the medium-term objectives of the Kenya Vision 2030 and the “Big Four” Agenda in the next five years. The Plan details succinctly how food and nutrition security will be achieved in the medium term. It also defines appropriate strategies to achieve Kenya's commitment to the regional and global development agenda.

It is notable that the Agriculture Sector is a major contributor to the economy and remains high on the national development agenda in terms of food and nutrition security, income generation, employment creation and export earnings. However, for the country to reap maximum benefits, the sector has to be fundamentally transformed to make it modern, commercial and competitive. Such circumstances demand collective and concerted efforts to turn around the sector and with it the overall national economy as envisioned in the Kenya Vision 2030. The Agriculture Sector Transformation and Growth Strategy (ASTGS) anchor this aspiration.

The strategies embraced under the Second Medium Term Plan (MTP II, 2013 - 2017) greatly improved the sector's performance. Despite the efforts, the sector continues to experience various challenges in realizing its full potential, particularly in meeting the policy aspirations on food and nutrition security, improved livelihoods and income generation. The current Plan is greatly informed by the challenges faced and lessons learnt from the implementation of MTP II in order to realize the goals of our national economic growth and development.

About 80 percent of the country's population live in the rural areas and derive their livelihood from agriculture and related activities. This means that, for any strategy to successfully address poverty and food insecurity, it must give priority to the development of agricultural sector. It is therefore, critical to accord high priority to activities aimed at improving crops and livestock. This will safeguard real farm incomes, and ensure availability and access to quality food. In this spirit, the private sector is expected to act as a catalyst for renewed growth while the government will continue to provide the requisite enabling environment.

When fully implemented, this Plan will propel the agriculture sector and national economic development to a higher sustainable path as envisioned in the Kenya Vision 2030. To this end, I am committed to ensure full implementation of the Plan.



Hon. Mwangi Kiunjuri, EGH
Cabinet Secretary
Ministry of Agriculture, Livestock, Fisheries and Irrigation

PREFACE

Agriculture contributes directly to over a quarter of the Gross Domestic Product (GDP) and provides a source of livelihood to the majority of Kenyans. It also contributes about 26 per cent indirectly to GDP through linkages with other sectors such as agro-based manufacturing, transport, wholesale and retail trade. The sector therefore, has a definite role in Kenya's progress towards being a newly industrializing middle-income country providing a high quality of life to all its citizens in a clean and secure environment by the year 2030.

The sector's average growth rate during the second Medium Term Plan period (2013-2017); was 5.1 per cent. Over this period crops and livestock production directly contributed an average of 27.3 percent of the national GDP and thus agriculture remained the dominant sector in our economic growth. However, there were many challenges and some emerging issues that hindered higher growth rate. In this regard, the Plan has outlined strategies to address such constraints.


During the third Medium Term Plan period (2018 – 2022), agriculture is expected to grow at a rate of 7 percent up from 5.1 percent in the previous period. The broad agricultural policy objectives include attainment and maintenance of food security; production of raw materials for industries; creation of gainful employment; management and conservation of natural resources; and produce agricultural commodities for export and import substitution. To achieve these objectives, the predominantly smallholder driven agricultural sector must be transformed to market-oriented agribusinesses besides supporting the farming households.

We acknowledge that the desired growth of agriculture sector will be achieved through support, cooperation and collaboration of stakeholders who include the National and County Governments; Farmers and pastoralists; private sector and development partners; among others.

Finally, we highly appreciate the leadership, support and guidance of the Cabinet Secretary, Ministry of Agriculture, Livestock, Fisheries and Irrigation, Hon. Mwangi Kiunjuri, EGH, MGH in the development of this Plan. We acknowledge the National Treasury and Planning for their technical support in finalizing this plan as well as the commitment demonstrated by the Sector Working Group (SWG) under the leadership of its Secretariat Head, Mr. Samuel Gicheru (Deputy Chief Economist).



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Table of Contents

STATEMENT BY THE CABINET SECRETARY THE NATIONAL TREASURY AND PLANNING	iii
FOREWORD	iv
PREFACE	v
EXECUTIVE SUMMARY	vii
1.0 INTRODUCTION	1
2.0 SITUATION ANALYSIS	2
2.1 OVERVIEW	2
2.2 FLAGSHIP PROJECTS	2
2.3. OTHER PROGRAMMES AND PROJECTS	3
3.0 EMERGING ISSUES, CHALLENGES AND LESSONS LEARNT	10
3.1. EMERGING ISSUES	10
3.2. CHALLENGES	10
3.3. LESSONS LEARNT	11
4.0 PROGRAMMES AND PROJECTS FOR 2018-2022	12
4.1. FLAGSHIP PROJECTS	12
4.2. THE BIG FOUR PROGRAMMES	12
4.3 OTHER PROGRAMMES AND PROJECTS	13
5.0 POLICY, LEGAL AND INSTITUTIONAL REFORMS	25
6.0 MONITORING AND EVALUATION	27
ANNEX I: IMPLEMENTATION MATRIX	28
ANNEX II: MONITORING AND EVALUATION MATRIX	47

EXECUTIVE SUMMARY

Kenya Vision 2030 identifies agriculture as one of the key sectors under the economic pillar expected to drive the economy to the projected 10 percent economic growth annually. It has also been identified as one of the sectors that will drive the “Big Four” agenda aimed at achieving 100% food and nutrition security over the next five years.

The Kenyan economy is agriculture based, with the sector contributing directly to over a quarter of the Gross Domestic Product (GDP) and provides a source of livelihood to majority of Kenyans. The Sector average growth rate during the MTP II was 5.1 per cent contributing an average of 27.3 percent of the GDP. Presently, only 16% of agricultural exports are processed. The Government envisions to process at least 50% of Kenya agricultural output as outlined in the “Big Four” Agenda.

Priority programmes with clear strategies have now been set for implementation within the third Medium Term Plan period (2018 – 2022). It is therefore, expected that the agriculture sector will grow at a rate of 7 percent over this period. The priority programmes and projects are geared towards transforming the sector to enable achievement of food security, employment creation, higher incomes and poverty reduction. The strategies identified will be through four pillars which include agro-polis, commercial irrigated agriculture, Small and Micro Enterprises (SME) and branding.

Preparation of the Agriculture Sector Plan was guided by the Constitution and in particular Article 6 (2), on devolution and access to services; Article 187, on cooperation between national and county governments; and the Fourth Schedule. Further, the Sector Plan is mainly informed by Kenya Vision 2030; regional and global development agenda such as the Comprehensive Africa Agricultural Development Programme (CAADP), Agenda 2063 of the African Union (AU) and 2030 Agenda on Sustainable Development.

The following issues emerged during implementation of the Second Medium Term Plan: negative impacts of climate change that affected production and productivity; multiplicity of taxes that reduced the net farm incomes; and making agribusiness a source of mass employment. The Sector also encountered a number of challenges including: over-subdivision of agricultural land into uneconomical units; low application of modern technology and innovation; inadequate legal and policy frameworks; low and declining soil fertility; resource use conflict; pests and diseases; inadequate quality control systems; multiplicity of taxes; limited capital and access to affordable credit; inadequate market access and marketing infrastructure; inadequate storage and processing facilities; and poor infrastructure. The sector has learnt some lessons during the implementation process of its programmes and projects in the MTP II period. Over time, it has become more evident that there is need to enhance linkages and build stronger collaboration with all the stakeholders; monitoring and evaluation need to be strengthened as well as evidence based policy planning.

During the third MTP period (2018-2022), the Sector will implement two flagship projects; (Disease free zones and Fertilizer lost reduction strategy) under Vision 2030 and the Big Four Agenda on food and nutrition security. Other priority programmes and projects to be implemented over the same period geared towards sustainable food and nutrition security include: livestock productivity improvement programme; enterprise diversification programme; market access and product development programme; agricultural insurance programme; livestock assets securing project; youth in modern agriculture programme; disease and pest control;

agricultural technology development programme; climate smart agriculture; capacity building programme; agricultural research project; policy, legal and institutional reforms; Urban and Peri-urban Agriculture Project; and consolidated geographic information system project.

The Sector Plan is structured into seven chapters: Chapter One gives the introduction of the Agriculture Sector highlighting past performance and proposed way forward. Chapter Two presents the situation analysis of the sector programmes and projects; and also gives some production trends over the Second Medium Term Plan (MTP II), 2013 - 2017. Chapter Three provides the emerging issues, lessons learnt and challenges and this greatly informs the sector plan priorities and strategies. Chapter Four outlines programmes and projects to be implemented in the five-year period (2018 - 2022). Chapter Five covers policy, legal and institutional reforms. Chapter Six is on monitoring and evaluation and emphasis the need for sector M&E framework. The Plans has two annexures: Annex I provides the implementation matrix which provides details on the flagship and proposed programmes including indicative budget over the Plan period, while Annex II contains the indicative Monitoring and Evaluation Matrix.

ABBREVIATIONS

ADC	Agriculture Development Corporation
AFA	Agriculture and Food Authority
ASTGS	Agriculture Sector Transformation and Growth Strategy
CAADP	Comprehensive Africa Agricultural Development Programme
CBPP	Contagious Bovine Pleuropneumonia
CCPP	Contagious Caprine Pleuropneumonia
CGs	County Governments
DFZ	Disease Free Zones
DP	Development Partner
DRSLP	Drought Resilience Sustainable Livelihood
ECF	East Coast Fever
IGS	Intergovernmental Secretariat
ITWGs	Intergovernmental Thematic Working Groups
JASCCM	Joint Agricultural Sector Consultation and Coordination Mechanism
KAGRC	Kenya Animal Genetics Resource Centre
KALRO	Kenya Agricultural and Livestock Research Organization
KCC	Kenya Cooperative Creameries
KENTRADE	Kenya National Trade Agency
KENTTEC	Kenya Trypanosomiasis and Tsetse Eradication Council
KEVEVAPI	Kenya Veterinary Vaccines Production Institute
KMC	Kenya Meat Commission
KNBS	Kenya National Bureau of Statistics
KVB	Kenya Veterinary Board
LEZ	Livestock Export Zone
M&E	Monitoring and Evaluation
MOAI	Ministry of Agriculture and Irrigation
NCIP	Northern Corridor Integration Projects
NCPB	National Cereals and Produce Board
PCPB	Pest Control Products Board
RPLP	Regional Pastoral Livelihood Resilience Program
SATREPS	Science and Technology Research Programme Support
SDCD	State Department for Crops Development
SDGs	Sustainable Development Goals
SDL	State Department for Livestock
SFRTF	Strategic Food Reserve Trust Fund

1.0 INTRODUCTION

1.1 Overview

Kenya Vision 2030 identifies agriculture as one of the key sectors under the Economic Pillar expected to drive the economy to the projected 10 percent economic growth annually. It has also been identified as one of the sectors that will drive the “Big Four” agenda aimed at achieving 100% food and nutrition security over the next five years. The sector is therefore central to the achievement of Vision 2030 goal of “a globally competitive and prosperous country with a high quality of life by 2030”. The sector contribution to achievement of this goal will be through promotion of an innovative, commercially oriented and modern agriculture. The sector is also expected to deliver on Kenya’s regional and global commitments such as the Comprehensive Africa Agricultural Development Programme (CAADP), the Africa Agenda 2063 and the Sustainable Development Goals (SDGs).

The Agriculture and Livestock Sector contributes on average 27% to GDP, the largest share of any of the real sectors. The Sector provides critical supportive linkages to other sectors and provides a source of livelihood to the majority of Kenyans. It also contributes about 26 per cent indirectly to GDP through linkages with other sectors such as agro-based manufacturing, transport, wholesale and retail trade. In addition, it contributes approximately 75% of industrial raw materials, 65% of export earnings and 60% of the total employment.

The Sector average growth rate during the MTP II was 5.1 per cent. Presently, only 16% of agricultural exports are processed. The Government envisages to process at least 50% of Kenya agricultural output as outlined in the “Big Four” agenda. The strategies towards this will be through four pillars which include Agro-Polis, Commercial irrigated agriculture, 1000 SME companies and branding.

Kenya’s agriculture is predominantly small-scale farming mainly in the medium and high-potential areas which constitute 16% of the total land mass. The remaining 84% of the land is mainly under extensive livestock production and marginal crop production. About 60 per cent of the country’s livestock herd is found in the Arid and Semi-Arid Lands (ASAL) which is a major source of beef in the country.

During the third Medium Term Plan period (2018 – 2022) agriculture is projected to grow at a rate of 7 percent as a result of various measures to be implemented. Some of the key measures to achieve this target are: increasing production and productivity, disease and pest control, crop and livestock insurance, post-harvest management and market development, natural resource management, increased investment in the sector, strengthening institutions, policies and systems, increasing youth and women participation in modern agriculture, implementation of regional and international protocols and commitments as envisaged in the Draft Agriculture Sector Transformation and Growth Strategy (ASTGS).

Further, the Sector will continue with the implementation of two flagship projects of disease-free zones and fertilizer cost reduction strategy as envisaged in the Vision 2030 among other planned programmes and projects. This will result to food security, employment creation, income generation, and increased export earnings.

2.0 SITUATION ANALYSIS

2.1 Overview

Over the Second Medium Term Plan period (2013-2017); crops and livestock production directly contributed an average of 27.3 percent of the national GDP. According to the Economic Survey 2018; contribution to GDP by crops and livestock consistently improved from 24.3 percent in 2013 to 30.4 percent in 2016 and declined slightly to 29.8 in 2017, thus making it the dominant sector. The value of crop and livestock productions as well as support activities to agriculture, rose steadily from Kshs. 755,865 million in 2013 to Kshs. 893,263 in 2017.

During the review period, the Sector implemented various projects and programmes including three flagship projects. Below is an analysis of the status of implementation of these projects and programmes as well as the trends in production of major crop and livestock products over the MTP II period.

2.2 Flagship Projects

2.1.1 The Fertilizer Cost Reduction Strategy

The Fertilizer Cost Reduction flagship project was implemented during this period. Under the fertilizer cost reduction strategy the main work revolved around bulk procurement and fertilizer blending.

Bulk Procurement: During the second MTP II period, 615,121 Metric Tonnes (MT) of various types of fertilizer were procured to support price stabilization mechanism. Since inception of the subsidy programme in 2008, a total of 1,019,920MT of various types of fertilizers have been procured and sold to farmers at subsidized prices. Under this programme market prices for DAP reduced from Kshs. 6,500 in 2008 to Kshs. 3,100 while CAN market price dropped from Kshs. 3,000 in 2008 to Kshs. 2,600 in 2017.

Fertilizer blending: During the period under review, the government identified Toyota Tsusho Corporation as a strategic partner for fertiliser blending through Public Private Partnership (PPP). There are currently three fertilizer blending companies in the country i.e. Athi River Mining Company, MEA Limited and Toyota Tsusho Corporation.

2.1.2 Establishment of Livestock Disease Free Zones (DFZ)

The Sector initiated establishment of the coastal area DFZ covering Bachuma, Kurawa and Miritini to facilitate access of livestock and livestock products to local, regional and international markets. Survey and design for Bachuma Livestock Export Zone (LEZ) was completed. Phase I of the project was initiated and constructed to 60% while tenders for design of Kurawa and Miritini export quarantine stations were awarded.

2.1.3 Implementation of the Consolidated Agricultural Reform Legislations

Key policy, legal and institutional reforms undertaken included: the enactment of the Agriculture and Food Act 2013 (revised 2015), Crops Act (2013), and Kenya Agricultural and Livestock Research Act (2013), which operationalized Agriculture Food Authority (AFA) and the Kenya Agricultural and Livestock Research Organization (KALRO).

Several policies and strategies were initiated and are at different levels of completion. They include: the overarching Agriculture Policy, National Agricultural Mechanization Policy, Urban and Peri-Urban Policy, Agro Chemical Industry Policy, Organic Agriculture Policy, Sugar Industry Policy, Crops Insurance Policy, Cereals Policy, National Agricultural Soils Management Policy, National Livestock Policy, Veterinary Policy, Beekeeping Policy, Poultry Policy, Dairy Industry Policy, Camel Development Policy, National Agricultural Marketing Strategy, Climate Smart Agriculture Strategy, Oil and Nuts Crops Strategy, Tsetse and Trypanosomiasis Eradication Strategy. The bills that were developed include the Warehouse Receipts System Bill, Tsetse Bill, Dairy Industry Bill.

In addition, disease and pest control contingency plans and strategies for management of diseases of economic importance such as Foot and Mouth Disease (FMD), Peste des Petits Ruminants (PPR), Rift Valley Fever and Contagious Bovine Pleuropneumonia (CBPP) were developed. Further, standards and residue plans for veterinary public health and codes of inspection for conventional and non-conventional animal products were developed. In addition, the Veterinary Medicines Act 2012 was enacted, while the Veterinary Medicines and Drug Council was established and operationalized.

2.3. Other Programmes And Projects

The Sector also implemented the following programmes and projects.

2.3.1. Agricultural Development along Lamu Port –South Sudan – Ethiopia Transport Corridor

2.3.1.1. Transport (LAPSSSET) corridor

The Sector developed and submitted the Master plan to LAPSSSET Committee for implementation.

National Agricultural Sector Extension Programme (NASEP)

During period under review, draft Extension Guidelines and Standards were developed. Agri-Business Development Programme.

2.3.1.2. Agricultural Trade

The Sector collaborated with other sectors in promoting national, regional and international agricultural trade by participating in bilateral and multilateral trade agreements (12 MOUs and 3 agreements), meetings on development and review of international protocols, conventions and their domestication. The Sector adopted and implemented international food safety standards and improved physical market infrastructure by constructing 39 markets.

2.3.1.3. Market Information

The sector provided an average of 315 daily market information releases annually through daily newspapers, e-mails, phone calls and office visits. In addition; an automated Market Information System (MIS) was acquired and operationalised to improve collection, processing and dissemination of market information on real time basis.

2.3.1.4. Market Infrastructure Guidelines

The Sector developed Model Guidelines for Market Infrastructure Development. The guidelines are expected to support enactment of subsidiary legislation under the Crops and AFA Acts on markets development.

2.3.1.5. Regional e-Soko

The Sector has developed a concept note and strategy for provision of e-services (e-Soko) for enhanced regional integration for the Northern Corridor Integration Projects (NCIP) as directed by the Heads of States of all Partner States during the 13th Summit of NCIP held in Kampala, Uganda, 2016. Regional e-Soko is one of the services identified for implementation due to its positive impact to the majority of Northern Corridor citizens who depend on agriculture.

2.3.1.6. Grain Drying and Storage Facilities

The Sector spearheaded the development of community-based grain drying and storage facilities so as to address grain quality issues with a view to limit quality deterioration (post-harvest losses and aflatoxin contamination) and enhance grain marketing. A total of thirty six (36) mobile grain driers were procured and distributed to the thirty six (36) sub-counties in the main grain production regions. Further, a total of thirteen (13) community-based grain storage facilities were constructed in 10 counties.

2.3.1.7. Livestock Marketing Value addition and processing

In order to improve value addition and marketing, the sector procured 49 milk coolers with annual capacity of 50 million litres to improve milk marketing and reduce post-harvest losses. These were distributed to 21 Counties namely; Vihiga, Meru, Nyandarua, Nakuru, Bomet, Kakamega, Transzoia, Makueni, Embu, Kirinyaga, Tharaka Nithi, Elgeyo-Marakwet, Nyeri, Baringo, Samburu, Narok, Kajiado, West Pokot, Uasin-Gishu, Nandi and Nyamira.

During the MTP II period, the Sector constructed and handed-over to county governments 4 export slaughter houses in Isiolo, Garissa, Wajir and West Pokot. Poultry processing equipment were installed in Bungoma and Kiambu counties. A total of 6 tanneries and 17 mini slaughterhouses were constructed and handed over to counties. In addition, 6 milk processing facilities and 5 animal feed manufacturing facilities were inspected and licensed to ensure compliance with required standards. Standards for quality control of hides, skins, leather and leather products and food safety were developed.

2.3.2. Improvement of Livestock breeds

To address livestock breeding, various approaches were used:

2.3.2.1. Semen production

The production of semen by Kenya Animal Genetics Resource Center (KAGRC) increased from 500,000 doses in 2013 to 1,200,000 doses in 2017. This was as a result of increased number of breeding bulls, investment in semen production infrastructure and improved efficiency in semen processing.

2.3.2.2. Installation of Liquid Nitrogen Plants

Six (6) Liquid Nitrogen Plants were established to increase production, preservation and conservation of animal genetic materials to livestock farmers. The plants were established in Eldoret, Bomet, Meru, Nyahururu, Kirinyaga and KAGRC headquarters in Nairobi. Plants in Bomet, Kirinyaga and Nairobi were completed while Meru, Eldoret, Nyahururu were at 85 % completion. The cost of delivery of A.I services has also significantly reduced by 50% from Kshs 1,000 to Kshs 500 per service.

2.3.2.3. Provision of Breeding Material

Farm infrastructure development was undertaken in the 13 livestock farms and stations to improve their capacity to avail quality breeding stock. A total of 600 cattle, 2,680 rabbits and 2,100 sheep and goats were produced and distributed to farmers in the country.

2.3.2.4. Development of a bull station at ADC Sabwani

The Sector developed a second bull station at ADC Sabwani in Trans-Nzoia County with an annual capacity to produce 1.2 million doses of semen and is at 95% completion level.

2.3.2.5. Training of Artificial Inseminators

The Sector trained 619 inseminators (463 for cattle and 156 for goats) to offer Artificial Insemination services. The activity is intended to enhance the skills among the youth to make them employable in both the public and the private sector, increase livestock productivity, and improve food security and income to animal value chain actors.

2.3.2.6. Bee bulking

A total of four (4) bee bulking sites were established in Matuga, Marimanti, Kimose and Macalder to multiply bee colonies for bee farmers.

2.3.3. Disease and pest control

The Sector underscores the importance of livestock disease control through vaccination and hence upgraded the facilities of Kenya Veterinary Vaccine Production Institute (KEVEVAPI) to produce affordable and quality vaccines through efficient and effective technologies. The sector developed purified oil-based FMD vaccines which confer longer immunity of up to one year with a shelf life of up to two years. The production of oil-based Foot and Mouth Disease vaccine reduced the cost of vaccination by over 50 per cent (i.e. from Kshs.100 to Kshs. 50 per dose).

Vaccines production increased from 30 to 40 million doses of various vaccines per year within the MTP II period. During the same period, a total of 135 million doses of assorted vaccines for animal disease control have been produced. Further, thermo-tolerant I-2 Newcastle disease vaccine was developed.

The Sector through PCPB has been actively involved in trade facilitation through the national electronic single window system under KENTRADE for processing of import/export permits for pesticides. During the MTP

period, the number of registered pest control products increased from 915 products to over 1,290 in and the pesticide premises inspection increased from 5,000 premises to over 7,000.

To eradicate tsetse and trypanosomiasis, various interventions were carried out in five tsetse belts zones covering Lake Victoria basin, Lake Bogoria Basin, Meru/Mwea regions and Coast–Galana Kulalu. The suppression of tsetse and trypanosomiasis in some of these areas led to the start of diversified economic activities like dairy farming of exotic cows and crop production in Bungoma and tourism in Ruma. Through these efforts, Kenya maintains a zero status of sleeping sickness.

2.3.4. Accelerated Agricultural Inputs Access Programme

2.3.4.1. Traditional High Value Crop Project

A total of 5,781 MT of assorted drought tolerant crop seeds, 18,515,379 sweet potato vines and 18,512,110 cassava cuttings all valued at KSh 1.4 billion were distributed to 2.5 million farmers in various sub-counties.

2.3.4.2. Rice Promotion Project

A total of 70MT of seed was procured to promote production among small scale farmers. Five rice mills were procured for farmers groups. The project trained 150 extension officers and conducted 8 rice entrepreneur training sessions for farmers groups. Two projects (Rice MAPP and SATREPS) were developed and Rice Development Strategy revised.

2.3.4.3. Agriculture Mechanization

A total of seventy two (72) tractors, sixteen (16) combine harvesters, fifty two (52) reapers and twenty two (22) threshers were distributed to rice farmers' organizations to increase mechanization in rice farming.

2.3.4.4. Kenya Cereal Enhancement Programme

The Sector operationalized the e-voucher scheme to facilitate access to agricultural inputs to vulnerable subsistence cereal farmers. During the MTP II period 23,622 farmers accessed the e-voucher inputs. The scheme is operated in partnership with Equity Bank and agro-dealers under PPP arrangement.

2.3.5. Strategic Food Reserve Trust Fund (SFRTF)

The Strategic Food Reserve Trust Fund (SFRTF) was established as a successor of the Strategic Grain Reserve (SGR) in 2015 through Legal Notice No. 15 of 2015. The fund is comprised of foodstuff and cash, the shift to a Strategic Food Reserve is meant to facilitate the stocking of critical foodstuffs such as maize, beans, rice, fish, powdered milk and corned beef. During the MTP II period the SFRTF comprised of 1.5 million bags of maize; 1,289 MT of powder milk; and Kshs. 4 billion in cash.

2.3.6. Revitalizing of the Coconut Industry Programme

This Programme aimed at revitalizing the coconut industry within the traditional coconut growing areas and other potential parts of Kenya to create wealth and employment. During the review period 696 nursery operators were trained and there are currently 29,120 marked mother plants. In addition, 14 coconut product standards were developed in conjunction with the Kenya Bureau of Standards.

2.3.7. Agricultural Insurance Programmes

The Government has adopted the concept of agricultural insurance solutions through a Public Private Partnership covering both crops and Livestock Insurance.

2.3.7.1. Crop Insurance Project

The overall objective of the Crop Insurance project is to manage risks and losses amongst smallholder farmers, increase productivity in agriculture through improved access to credit and higher yielding technology such as use of certified seed and fertilizers. This support the transition from subsistence to commercially oriented agriculture.

One thousand farmers procured insurance cover in the pilot phase which covered three counties of Bungoma, Embu and Nakuru. The project coverage has since expanded to 10 counties. The sector formalized the formation of insurance pool of 7 insurance companies as an underwriter for the programme. 400 county staff have been trained on crop insurance implementation and 100,000 farmers in 10 counties sensitized. The project procured yield estimation (crop-cutting) equipment for use in the 10 counties. The Sector developed data management ICT system and a draft Agricultural Insurance Policy was also developed.

2.3.7.2. Kenya Livestock Insurance Programme

To minimize risks emanating from drought-related disasters and build resilience of pastoralists for enhanced and sustainable food security, the livestock insurance program for ASAL areas was rolled out. This covered 14,000 households in Turkana, Wajir, Isiolo, Marsabit, Mandera and Tana River Counties. A total of 70,000 tropical livestock units (TLUs) valued at Kshs. 1 billion were insured. In addition, 12,000 households were paid a total of Ksh 215 million as compensation for the 2016/17 drought.

2.3.8. Internship Programme

A total of 572 interns in animal health certificate, diploma and degree were recruited and posted to various counties. The programme was initiated under the Veterinary and Para-professionals Act of 2015.

2.3.9. Climate Smart Agriculture

Climate Smart Agriculture involves promoting sustainable production systems that enhance resilience and reduce emission of greenhouse gases for enhanced food and nutritional security and improved livelihoods.

Kenya developed and submitted the Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC). The Sector developed and launched the Kenya Climate Smart Agriculture Strategy (KCSAS) 2017-2026.

2.4. Sector Production Trends

2.4.1. Food Crops

There was general improvement in production of the main cereals namely maize, wheat and rice. Maize production averaged 40 million 90 kg bags annually which is just enough to satisfy the national consumption.

Production of rice decreased from 125,256 tonnes in 2013 to 118,150 in 2016. This was due to prolonged dry spell in 2016 which reduced water availability in irrigation schemes. Wheat production increased from 194,500 tonnes in 2013 to 222,400 tonnes in 2016 which is barely 14% of the country's consumption estimated at 1.6 million tonnes.

2.4.1.1. Industrial Crops

Tea remained a major foreign exchange earner in the country at Ksh.124.5 billion in 2016, a 19% increase from the 2013 figure of Ksh.104.6 billion. Tea production increased by 9.3% from 432,400 tonnes in 2013 to 473,000 tonnes in 2016 before slightly declining to 439,800 tonnes in 2017. Coffee production increased by 15.8% from 39,800 tonnes in 2013 to 46,100 tonnes in 2016, earning the country Ksh 21.3 billion, up from Ksh 16.3 billion in 2013. In 2017, coffee production declined to 40,800 tonnes. This increase is partly attributed to the government effort to revitalize the sub sector including provision of subsidized fertilizer. Production of sugarcane averaged 6.8 million tonnes within the MTP II period with a peak of 7.09 million tonnes in 2016, a 6.3% increase from the 2013 figure of 6.67 million tonnes. This reflected dividends of the continued government support to the sub sector. Sugar production on the other hand increased from 600,200 tonnes in 2013 to 639,700 tonnes in 2016 against the current demand of 850,000 tonnes.

2.4.1.2. Horticulture

The horticulture sub-sector comprising of cut-flowers, vegetables, fruits, nuts, herbs and spices remained pivotal to Kenya's export drive. The volume of exported horticultural products increased by 42.2% from 213,900 tonnes in 2013 to 304,100 in 2017. The value of horticultural exports increased by 37.8% to Ksh.115.3 billion in 2017 compared to Ksh. 83.7 billion in 2013.

2.4.1.3. Dairy Industry

Milk production increased from 4.7 billion litres in 2013 to 5.3 billion litres 2016 annually. The annual intake by processors rose from 523 million litres in 2013 to over 650 million in 2016, representing about 24% increase. The increase is attributed to increased farmer prices from an average of KSH 26 per litre in 2013 to about KSH 35 per litre in 2015, enhanced milk promotion and reforms initiated by Government of Kenya.

2.4.1.4. Beef Industry

Cattle is the main source of red meat accounting for approximately 77 percent of Kenya's ruminant off take for slaughter. The total beef production has been on the increase from 296,765 MT in 2013 to over 520,000 MT in 2016. During the same period consumption increased from 414,093 MT in 2013 to over 452,000 MT in 2016.

2.4.2. Agriculture Research

The overall objective of Kenya Agricultural and Livestock Research Organization (KALRO) is to conduct and promote agricultural research in crops, livestock and natural resources. Some of the key achievements include: development of vaccines for control of Newcastle, East Coast Fever (ECF), Contagious Bovine Pleuropneumonia (CBPP) and Contagious Caprine Pleuropneumonia (CCPP) diseases; animal health diagnostic kits; medicated urea-molasses blocks for livestock; 15 fodder varieties; four improved fodder grasses; improved indigenous chicken breeds, improved poultry feeds; introduction of 421 varieties of

different crops; development of crop suitability maps; installation of 12,000 drip irrigation kits; provision of 2,700 improved Sahiwal and Boran bulls and 1,000 heifers of Boran-Friesian crosses.

2.4.3. Devolution

The Sector transferred the devolved agricultural functions as stipulated in Schedule IV of the Constitution. The Sector is thus focused on its core functions of creating an enabling environment for agricultural development through development of policies, regulatory frameworks and standards; capacity building for County Governments; research; development of management information systems and provision of vital statistics; and monitoring and evaluation.

The Sector in collaboration with the county governments established a framework for coordination and engagement within the sector. The framework comprises of the intergovernmental forum (IGF) on agriculture, Livestock and Fisheries for policy direction; the Intergovernmental Secretariat (IGS) for implementation of the forum resolutions and four Intergovernmental Thematic Working Groups (ITWGs). In addition, the ITWG operationalized are: Policy, Legislation and Standards; Projects and Inputs; Food Security Extension and Capacity Building; Monitoring, Evaluation and Communication. The sector in collaboration with county government developed a draft Joint Agricultural Sector Consultation and Coordination Mechanism (JASCCM).

3.0 EMERGING ISSUES, CHALLENGES AND LESSONS LEARNT

3.1. Emerging Issues

- Impacts of climate change: During the review period the performance of the sector was seriously affected by impacts of climate change manifesting itself in the following forms: frequent and severe droughts and floods that have devastating consequence on the environment, society and the wider economy; reduced productivity in rain fed agriculture, high food prices, pests outbreaks and disease epidemics, drying of rivers and wetlands (leading to reduction of water for agriculture), loss of livestock, crop failures, pasture and forage depletion among others. This calls for various adaptation and mitigation measures;
- Multiplicity of taxes: Producers are subjected to multiple taxes both at national levels and at county level in form of levies of taxes. This has contributed to a reduction of the net farm incomes; and
- Making agribusiness a source of mass employment.

3.2. Challenges

- Land Sub- Division and fragmentation: There has been over-subdivision of land into uneconomic units in some parts of the country. In some parts of the country large parcels of land are in possession of large scale farm holders and have remains unutilized or underutilized;
- Low application of modern technology and innovation: Many farmers lack adequate capital to adopt new technology or apply recent innovations in agricultural research. Although Kenya has a well-developed agricultural research infrastructure, inadequate research-extension-farmer linkages and inadequate demand-driven research has led to low agricultural productivity;
- Inadequate legal and policy frameworks: The sector has made strides in consolidating agriculture legislations; however, there are still gaps in the implementation of the legal and policy frameworks;
- Low and declining soil fertility: Poor farming methods and continuous cultivation has led to rapid depletion of soil nutrients, declining yields and environmental degradation;
- Resource use conflict: Agriculture relies heavily on finite resources which are competitively sought by actors pursuing different interests. Due to scarcity, resource-use conflicts are bound to arise. The sector has been experiencing frequent conflict between neighboring communities due to cattle rustling, livestock and wildlife encroachment to the private farms in search of pasture during dry spells;
- Pests and diseases: Prevalence of diseases and pests, pre-harvest and post-harvest losses occasioned by pests, diseases and lack of proper handling and storage facilities continue to be high. This causes heavy losses through deaths, reduced productivity and loss of markets for products;
- Climate change: Climate change results to reduced productivity, pests outbreaks and disease epidemics, drying of rivers and wetlands, loss of livestock and crop failures, pasture and forage depletion among others. Pastoral and marginal agricultural areas are particularly vulnerable to the impacts of climate change, as extended period of droughts erodes livelihoods opportunities and community resilience;
- Inadequate quality control systems: The export of agricultural products has faced restrictions due to poor packaging, damage during transportation, poor handling, contamination and infection due to lack of a code of conduct for exporters and quality control;

- Limited capital and access to affordable credit: Agricultural production is considered highly risky by the formal banking sector, thus little attention is given to smallholder producers;
- Inadequate market access and marketing infrastructure: Agriculture marketing information and infrastructure are poorly organized. The domestic market lacks an effective marketing information system and infrastructure. In addition, the dependence on a few external market outlets makes agriculture exports very vulnerable to changes in the demand of agriculture products and unexpected non-trade barriers by foreign markets;
- Inadequate storage and processing facilities: Inadequate storage facilities constrain marketability of perishable goods such as dairy products, beef, fruits and vegetables as well as marketability of durable produce;
- High cost, adulteration, low and inappropriate application of key inputs: The cost of key inputs such as seeds, agro-chemicals, feeds and other animal health inputs has remained high making them unaffordable by many producers and increasing the cost of production. In addition, cases of counterfeits and adulteration of agricultural inputs have been reported. This results in low application of quality inputs leading to reduced productivity;
- Poor infrastructure: Underdeveloped rural roads and other key physical infrastructure have led to high transport costs for agricultural products to the markets as well as farm inputs. In addition, electricity cost in Kenya is still high and in some areas are not connected thus constraining investment in cold storage facilities, irrigation, and agro-processing;
- HIV/AIDS: The rapid spread and the corresponding deaths have resulted in the loss of productive agriculture personnel and base for sustained farming knowledge and diversion of investible resources to the treatment of the diseases;
- Gender inequalities: These inequalities exist at household level in terms of access to and control over productive resources; and in agriculture value chains (participation at processing, marketing, trade and in agricultural service delivery. This continues to impact negatively on household food security, sector performance and overall economic growth; and
- Aging Population: The agriculture sector is predominantly run by the old population with very few youth getting involved. There is therefore need for interventions that target the orientation of the youth to attract them in the sector.

3.3. Lessons Learnt

- With the devolved system of governance, a closer collaboration between the National and County governments is required on the issues of capacity building and policy development and implementation;
- There is need to continue with the efforts to enhance linkages and build stronger collaboration with all the stakeholders; particularly between the National and County Governments in order to ensure sustainable food security and efficient service delivery;
- Monitoring and evaluation should be strengthened through development and implementation of a comprehensive framework to ensure effective and efficient utilization of resources for timely achievement of the desired results; data and information sharing; and
- It is necessary to adopt an evidence based policy planning that would inform on impacts of policies.

4.0 PROGRAMMES AND PROJECTS FOR 2018-2022

4.1. Flagship Projects

4.1.1. Fertilizer Cost Reduction Programme

The programme will address issues of access, affordability, suitability and impact on productivity. The Sector intends to: subsidize 300,000MT of assorted fertilizer annually; coordinate soil analysis in beneficiary regions; monitor and evaluate the impact of the subsidy programme on crop production and productivity.

The government in collaboration with the private investors will explore local manufacturing of ammonia, urea, DAP and NPK fertilizers. Additional private investors for local blending and distribution of subsidized fertilizer will be brought on board. The Sector will also collaborate with county governments in the distribution of fertilizer and monitoring and evaluation of its impact.

4.1.2. Disease Free Zone Development

During the MTP III the Sector will complete construction of Bachuma Export Zone and start construction works of Miritini and Kurawa Export Quarantine Stations. The national and county governments in collaboration with the private sector will support enforcement of Sanitary and Phyto-Sanitary Standards (SPS) requirements. This will facilitate market access of livestock and livestock products and promote trade at local, regional and international markets.

4.2. The Big Four Programmes

4.2.1 Food and Nutrition Security Programme

The Government will focus on new and innovative initiatives that will drive food and nutrition security over the next five years by supporting enhanced large scale production, small holder productivity and agro-processing and reduction in food prices.

4.2.2 Enhancing large scale production

The programme focuses on putting an additional 700, 000 acres under maize, potatoes, rice, cotton, aquaculture and feeds production through PPP. This will involve utilizing and leasing out public and institutional land to private investors for increased production. Further, there will be soil liming to improve soil fertility and increase agricultural productivity; forming Agriculture and Irrigation Sector Working Group to provide coordination for Irrigated Agriculture; and offering post-harvest technologies incentives to reduce post-harvest losses from 20% to 15% through waving of duty on cereal drying equipment, grain silos, fishing and aquaculture equipment and feed.

4.2.3 Drive small scale holder productivity and agro-processing

The programme will focus on establishment of 1000 targeted production level SMEs using performance based incentive model, establishment of commercialized food systems for livestock, fish, poultry and piggery to revolutionize feed regime and traceability of animals and establishment of East Africa's premier food hub secure investors to construct a Shipyard and increase domestic fishing fleet by 68 vessels in the coast.

4.2.4 Reduction in cost of food:

This will involve contracting farmers for Strategic Food Reserve, redesigning subsidy model to maximize impact by focusing on specific farmers, securing investment through PPP in post-harvest handling and market distribution as well as elimination of multiple levies across counties.

4.3 Other Programmes and Projects

4.3.1 Food and Nutrition Security

4.3.1.1. Rice Development Project

This will address challenges in the rice subsector in order for the country to produce an additional 70,000 MT of rice annually. The current annual production is 150,000 MT against consumption of 540,000 MT. A total of 250 MT of seed will be procured for farmers. There will be capacity building of extension officers and entrepreneurs along the rice value chain in collaboration with the county governments and other stakeholders. Training will cover mechanization, agro processing and on farm water harvesting technologies in upland rice production. Extension officers in irrigation schemes will also be trained on technologies developed through rice research for up scaling production, productivity and marketing. The project will also facilitate procurement of milling machines for farmers groups; access to market infrastructure and information; and coordination of stakeholders in the rice sub sector. In addition, the project will promote the purchase of rice from farmers into the strategic food reserve.

4.3.1.2. Irish Potato Support Project

During the MTP II, the Government supported potato production with the main focus being on capacity development for the production of certified seeds. The focus in the MTP III will be on increasing accessibility of certified seeds, enhancing research on potato and improving postharvest handling. The Agricultural Development Corporation (ADC) will be supported to produce basic seed potato for multiplication by seed growers, while KALRO will be funded to enhance research and variety development. In collaboration with county governments, capacity building of extension officers on new and superior varieties and certified seeds will be supported.

4.3.1.3. Strategic Food Reserve Trust Fund (SFRTF)

The objective of the SFRTF is to provide a strategic food reserve in physical stock and cash equivalent to stabilize food supply and prices in the country. The Strategic Food Reserve is meant to facilitate the stocking of critical foodstuffs such as maize, beans, rice, fish, powdered milk and corned beef under the management of the Strategic Food Reserve Oversight Board. The SFRTF aims at maintaining at least 4 million x 90 Kg bags of maize in physical stock and its cash equivalent; 40,000 x 90 Kg bags of beans; 13,000 MT of rice; 10,000 MT of powdered milk; 5,000 MT of corned beef.

The Government will establish a Food Acquisition Programme in order to create demand and stable market prices for products from small-scale farmers who will be encouraged to form cooperatives in maize, wheat and potatoes. Under the programme, the Government will buy 50% of its food requirements from small holder farmers.

4.3.1.16. Nutrition Security Project

This project aims at full implementation of National Food and Nutrition Security Policy. It will encompass enhancement of food production and capacity building on value addition and utilization of a variety of food crops, adoption of nutrition sensitive agriculture programming, action plans and tracking nutrition indicators. In addition the National Food and Nutrition Security Council will be established. The Sector will ensure that safe and high quality food is available to all Kenyans at all times by creating public awareness on relevant issues and by setting, promoting and enforcing appropriate guidelines, code of practice, standards and regulatory framework. The Sector will protect vulnerable population by developing capacities for early warning and emergency management.

4.3.1.17. Agricultural Inputs Access Project

The programme aims to improve access to farming inputs composed mainly of fertilizers and high-quality seeds in targeted value chains – maize, sorghum, millet, and related pulses. The project will allow eligible smallholder farmers to access farm inputs comprising seeds, fertilizers, and small equipment, as well as other goods and services through an e-payment system managed by a financial institution.

4.3.1.18. Farmer Registration Project

Kenya has not conducted a census of agriculture since independence. The current production data and statistics has inconsistencies that have not been resolved over time. However, plans are underway to integrate an agriculture module during the Population and Housing Census that will be conducted by the Kenya National Bureau of Statistics in 2019. This will generate the National sampling frame to be used during future agricultural surveys.

The Sector will mobilize resources and implement the Strategic Plan for improvement of Agriculture and Rural Statistics (SPARS_KEN) which aims at registration of farmers and enterprises in the 47 Counties. The registration details will include farmers' names/gender, location, enterprises undertaken, farm machinery and scale of operation which will be either large scale, medium scale or small scale. Land use pattern, use of farm inputs and agro-ecological zone will also be captured.

4.3.1.19. Small Holder Dairy Commercialization Project

The project aims at improving the financial returns of market oriented production and trade activities by smallholder dairy operators, enabling more rural households and creating employment opportunities in the dairy industry. The Sector in collaboration with county governments and development partners will build the capacity of smallholder dairy producers, processors and traders. During the medium term period, SDCP will scale-up its outreach to 600 new Dairy Groups, corresponding to 15,000 small dairy farmers'. In addition 200 small-scale milk traders and 200 operators/processors will be targeted for support. Through their attachment to a household, it is expected that the benefits of the programme will reach out to about 100,000 households.

4.3.2. Livestock Productivity

4.3.2.1. Semen Production (KAGRC/ADC)

There is high demand by farmers for superior animal breeds that produce quality milk and meat and contribute to food and nutritional security. Kenya Animal Genetic Resources Centre (KAGRC) is mandated to engage in strategic semen production to improve livestock productivity. KAGRC has an annual processing capacity of 1,200,000 doses of semen. This is inadequate to meet the current national demand of 2,000,000 doses and a growing export market. The increased demand for milk and milk products is driven by the country's increasing population and changes in dietary habits. This means the Government will need to embark on aggressive dairy farming to overcome a looming milk shortage by investing in "animal seed" (semen) to improve productivity. This project aims to facilitate improved access to quality semen and liquid nitrogen for preservation and conservation throughout the value chain leading to improved dairy and beef breeds for increased milk, meat, hides skin for local consumption and for export.

4.3.2.2. Livestock feed production

The project will involve establishment of a strategic feed reserve for livestock for use during drought and feed shortages. The project activities will include: seed production; establishment, harvesting and conservation of pasture/fodder to increase feed availability. Initially fodder establishment will be Rhodes grass for hay production but later expanded to include fodder sorghum (Columbus & Sudan grass). Fodder conservation and storage will be undertaken by construction, expansion and rehabilitation of storage facilities and supporting commercial fodder production and conservation enterprises (SMEs).

The SDL and KALRO will conduct research, develop, upscale and avail novel technologies in feed production and preservation. This project will be implemented in livestock holding grounds, training institutions, KALRO farms and Livestock farms including ADC. It will be implemented in consultation with respective county governments and where possible a Public Private Partnership (PPP) will be encouraged within a given framework.

4.3.2.3. Establishment of feed lots in strategic sites

The project will promote development of 6 pilot feedlots namely Isiolo, West Pokot, Kajido, Taita Taveta, Tana River and Wajir to support food security and agro processing by providing raw material in the meat and leather processing facilities. These facilities will be developed in consultation with respective county governments and where possible a Public Private Partnership (PPP) will be encouraged within a given framework. This will be actualised by stocking 5 million bales of hay and 100 MT of pasture seeds.

4.3.2.4. Research and promotion of technologies for Management of Maize Lethal Necrotic Diseases (MLND)

Management of Maize Lethal Necrotic Diseases (MLND) is a viral disease that emerged recently and is devastating maize production throughout the country. The impact of this disease is catastrophic and almost getting to an epidemic. The project aims at the generation of technologies and management practices for control of (MLND). This will contribute to increased food and nutrition security.

4.3.2.5. Research and promotion of technologies for Management of Fall Armyworm

The Fall Armyworm is a recently emerged pest which is devastating the maize sub-sector, pastures and fodder. Due to its feeding habits the pest is proving difficult to control through conventional methods. The project will generate and promote novel technologies and management practices for the control of the pest. This will contribute to increased food and nutrition security.

4.3.2.6. Integrated Agricultural Research for Development

This is a GOK/USAID funded project. It focuses on research on crop development, livestock production, natural resources and soil management.

4.3.2.7. Promotion of Commercial Chicken Production

Chicken production contributes to food and nutrition security, and income generation. The improved KALRO indigenous chicken are in high demand across the country as they mature much faster, are resistant to diseases and produce more eggs and meat than the local chicken. The rearing of the improved *kienyenji* chicken is also very attractive to youth and women due to its low initial investment, quick returns and ease of management.

The Project which is a partnership between KALRO and KAGRC, aims at producing 2 million day old chicks per year and also reduce the waiting period from 8 months to 1 month. The central indigenous poultry research and development facility at KALRO Naivasha will be expanded and other regional sites developed at KALRO Kakamega, Katumani, Embu and Mtwapa and KAGRC regional offices to meet the increased demand. The project will be undertaken in collaboration with the KALRO, KAGRC, SDL and the County Governments. The project will promote development of commercial poultry enterprises on Public Private Partnership arrangements.

4.3.2.8. Promotion of Pig production

This project will promote development of commercial pig enterprises on Public Private Partnership arrangements in livestock and KALRO farms and institutions and individual farms. Commercial pig production rearing enterprises (SMEs) will be supported.

4.3.2.9. Promotion of Rabbit production.

The project will focus on Conservation and multiplication of genetic material and avail quality breeding stock to rabbit farmers. This will lead to increased farm productivity, incomes and improved livelihoods for the pig keepers.

4.3.2.10. Support to Breeding and Multiplication of stocks in Research farms (10 sheep and Goats and 5 Cattle)

One of the major challenges facing most livestock keepers is availability of quality breeding stock for dairy, beef, sheep and goats. Through this project, SDL in Collaboration with KALRO will undertake livestock breeds research, genetic conservation and multiplication. The farmers will be provided with quality livestock breeding stock at subsidized cost and this will go along in boosting food and nutrition security in the country.

4.3.2.11. Production of Corned Beef

At the moment the (SFR) includes powdered milk as the only product of animal origin. There is need for inclusion of corned beef which is a complete meal in the SFR ration. Kenya Meat Commission will be facilitated to produce and supply 160 metric tons of corned beef to the Strategic Food Reserves Programme.

4.3.2.12. Multiplication of Bees colonies

The project will focus on setting up of five (5) bee bulking sites for collection and multiplication of bee colonies and supply to farmers. 75% of plants are pollinated by insects (mainly bees). Without pollination, the national food and nutrition security is threatened. The declining population of bees as a result of frequent spraying of insecticides on crops in farmland and land degradation interferes with bee habitat. The project aims at building bee colonies by selection, capturing and multiplication of sentinel bee colonies. The bee colonies will be distributed to bee keepers to improve pollination of crops and honey production for food and nutrition security.

4.3.2.13. Pastoral Resilience Building Program

In improving livelihoods of pastoral communities in ASAL areas, the Sector is implementing two projects supported by development partners. These are Drought Resilience Sustainable Livelihood (DRSLP) and Regional Pastoral Livelihood Resilience Program (RPLP). DRSLP supports small-scale irrigation schemes, livestock market development, pasture and water development and animal health. The RPLP seeks to enhance livelihood resilience of pastoral and agro-pastoral communities in cross border drought prone areas and improve the capacity of the counties to respond promptly and effectively to eligible crisis or emergencies. Implementation of these projects will continue being done in collaboration with the county governments.

4.3.3. Enterprise Diversification Programme

4.3.3.1. Traditional High Value Crops project

The project aims at improving farmers' access to quality seeds and planting materials of drought tolerant traditional high value crops in the arid and semi-arid areas. This will be done through up scaling seed bulking and distribution in identified institutions and farmer groups. The Sector intends to provide 672 MT of high value crop seeds.

4.3.3.2. Miraa Farmers Livelihood Improvement Project

Miraa is mainly grown in Meru, Tharaka Nithi and Embu Counties. This programme focuses on improving production and marketing of the miraa crop while supporting farmers to venture into additional enterprises to improve their livelihoods. The crop will be promoted through international Trade Fairs in order to reclaim the lost market and open new ones. Trade in the domestic market will be supported through removal of restrictions and awareness creation among the public on the status of the crop. A database of miraa farmers will be established through farmer registration. Other key activities will be support to establishment of marketing sheds; establishment of Miraa Research Institute to develop appropriate technologies and; capacity building of farmers and extension staff.

A Directorate on Miraa will be established under AFA and regulations will be developed and gazetted to support

the growth and transformation of the sub-sector. AFA, in collaboration with KEBS will develop and enforce Miraa Standards and Codes of Practice.

4.3.3.3. Revitalization of Industrial Crops

Revitalization of Industrial Crops Programme: (Cotton, Coffee, Pyrethrum, Tea, Sugar and Oil and Nuts crops)- Currently, industrial crops sub-sector experiencing various challenges that include among others low productivity, high cost of production, underutilization of the processing capacities, low products ranges, reduced areas under production, inefficient farmers organization and regulatory framework. Revitalization will entail; strengthening of farmers organization structures, rehabilitation of the coffee factories, promotion of value additions and products diversification, improved productivity, reduced cost of production and efficient processing technology, upgrading of Nairobi Coffee Exchange, increased quality supplies of raw materials, provisions of quality seedlings to farmers, replanting of high yielding tea clones and enabling regulatory frameworks.

4.3.3.4. Livestock Value Chain Support Project

This is a GOK/Poland Government supported program aimed at supporting development of cold chain facilities for milk, establishment of milk testing and disease diagnostic laboratories, support to food security and agro processing through milk bulking, value addition and processing.

4.3.4. Market Access and Product Development Programme

This programme is geared towards enhancing market access by providing enabling environment through policy, legislations and regulations, model guidelines for improved market infrastructure access to information. The Sector will participate in development of trade agreements and domesticate conventions and protocols to which Kenya is signatory.

4.3.4.1. Commodity Exchange and e-Soko

The Sector will develop structured commodity markets (WRS, Commodity Exchange and e-Soko) and provide guidelines and technical support for physical market infrastructure development. The Sector will also develop programs to promote agricultural commodities to strategic and emerging markets and develop a value addition strategy.

4.3.4.2. Livestock Marketing Infrastructure

To enhance market access and competitiveness of Kenya's animal based products, 10 relevant international standards will be developed and adopted. In addition, 50 strategic holding grounds and out spans will be rehabilitated to improve livestock marketing infrastructure. In order to access expanding international markets the sector will implement sanitary interventions to satisfy the growing demand for high-quality livestock products and by-products. In addition, Kenya will engage bilateral and multilateral partners to increase market outlets. In order to improve productivity and increase returns for the farmers the government in partnership with the private sector will add value to hides, skins and leather. The KMC factory will be upgraded to provide a ready market for pastoralists. This will involve renovating the cattle bleeding and cattle processing areas, acquisition and installation of a boiler, refrigeration & cold room facilities, rendering plant, vacuum packaging machine and electrical installations.

4.3.4.3. Sanitary and Phyto-sanitary standards Improvement

This will entail improvement of policy, legal and institutional environment to enhance compliance to standards and procedures. These will involve: regulation of all matters relating to plant protection; seeds and plant varieties; pest control products; administration and enforcement of sanitary, phyto-sanitary and food safety measures. The Sector will ensure implementation and enforcement of national bio-safety regulations on the introduction and use of genetically or living modified species of plants, insects and micro-organisms, plant products and other related species. It will also undertake registration of pest control products and regulation of import and export of pest control products, plants and plant materials.

The Government will ensure safe, quality and efficacious pest control products are availed to users, enhance compliance of pest control products to set standards while facilitating trade. This will be done through; enhancing analytical capacity in pesticide formulation, establishing a residue laboratory at PCPB focusing on pesticide residues for agricultural commodities and enhancing provision of information on safety to pesticide through a review of labelling regulations in line with Global Harmonized System (GHS) of Classification and labelling of chemicals.

The Government will domesticate international standards on trade in order improve compliance with sanitary measures for enhancing domestic and international trade in animals and animal products; ensure certification of all animals and animal products in accordance with set standards and enforce compliance; provide for participation in formulation of international standards; support capacity development for compliance with sanitary measures and quality assurance at all levels in animal value chains; strengthen national enquiry points and notification authority in line with the WTO-SPS agreements; promote access to profitable markets for animals and animal products. In collaboration with development partners and county governments, the Ministry will construct 8 export slaughterhouses.

4.3.4.4. Promotion of Agricultural Market Information

An automated Market Information System (MIS) that is able to process, analyse, archive, publish and disseminate real time agricultural market information will be developed. This will help to expand and improve the capacity of the existing information system in terms of number of commodities, markets covered and ability to process large volumes of data.

The Sector will also set up a comprehensive National Agricultural Market Information System with links to the regional e-Soko system. Regional e-Soko is an e-service that will enable access to latest agriculture market information and services across the Northern Corridor Integration Projects (NCIP) region. Partner States have identified the need to develop and deploy a regional e-Soko as a major component in the Information Strategy to provide sufficient agricultural information to value chain players to improve agricultural production, processing and marketing across the NCIP region and abroad. The sector has initiated development of a National e-Soko concept to facilitate integration of the national e-Soko into the regional e-Soko.

4.3.4.4. Implementation of Regional, Bilateral and Multilateral Agreements and Commitments

The Government will engage in negotiation, adoption, domestication and implementation of trade agreements, protocols and standards to improve regional and international trade.

4.3.4.5. Standard Market Access Project

The main purpose of the project is to strengthen the legal framework, including food standards, and institutional infrastructure for testing and certification of plant and animal-based products. This will enhance market access and competitiveness of Kenya's animal and plant based products, through greater adoption of relevant international standards and improved regulation and enforcement in the country.

The project addresses three main areas of strategic importance: i) the development of standards and products quality regulations so that Kenya has an updated legislative framework for plant and animal based products; ii) build institutional capacity to provide appropriate certifications regarding standards and conformity in collaboration with the Kenya Bureau of Standards (KEBS) and the Kenya Plant Health Inspectorate Services (KEPHIS) through support to staff training, technical assistance, laboratory equipment and support to consultation processes; iii) provide grants to Business Membership Organizations to help them meet the standards set for products in regional and international trade.

4.3.4.6. Livestock Value Chain Support Project

The project will support development of cold chain facilities for milk bulking and processing, establishment of milk testing and disease diagnostic laboratories, development of multiple-ovulation and embryo transfer and animal feed processing facilities, liquid nitrogen plants and grain storage, mobile grain driers and milling plants. The project will be implemented jointly with the county governments through support by development partners.

4.3.5. Agricultural Insurance Programme

The Government has adopted the concept of agricultural insurance solutions through a Public Private Partnership covering both crops and livestock insurance. The programme targets 45 counties excluding Nairobi and Mombasa.

4.3.5.1. Crop Insurance project

The objective of the Crop Insurance Project is to manage risks and losses amongst smallholder farmers, increase crop productivity through improved access to credit and higher yielding technology such as use of certified seed and fertilizers and support the transition from subsistence to commercially oriented farming. During the MTP III period, the project will be expanded to cover 31 counties.

4.3.5.2. Livestock Insurance Programme

The Livestock Insurance Programme will be expanded to cover 500,000 households (2.5 million TLUs) in 14 ASAL counties. This will enhance the capacities of pastoral communities and stakeholders on the use of insurance products for reduction of weather related risks and rebuilding of livelihood support systems in drought prone areas.

4.3.6. Livestock Assets Securing Project

The Sector has vast pieces of land used by the institutions for delivering on their functions. Some of these are four Livestock breeding and research stations, nine sheep and goat breeding stations, Regional Pastoral

Training Centres, Four Veterinary Efficacy trial Centres, Animal Health Training Institutions, Dairy Training Institute, Meat Training School, Kiboko zoological station, National Bee Keeping Institute and Regional Veterinary Investigation Laboratories. These institutions occupy parcels of land but with no legitimate title deeds. This has occasioned frequent encroachment and illegal sub-division by the respective county government. The ministry will embark on acquisition of titles for these facilities to secure them.

4.3.7. Youth in Modern Agriculture Programme

The overall objective of this project is to create sustainable and gainful self-employment for the youth through participatory engagement in agriculture for increased productivity, income generation and poverty reduction. This programme aims to train 25,000 pupils in 100 primary schools and 1,500 Youth out of school in agricultural skills and engaging them in modern agriculture. In addition, the sector will offer incentives and build capacity of youth in terms of skills improvement, market guarantees, and scholarships for youth to agribusiness and distribution of equipment to youth for production (green houses, water pumps, open drip kits, fish ponds, poultry units and pasture for fattening), incubation training and equipping the incubation centres, processing and value addition. Further, the sector will offer scholarships for youth in agribusiness.

4.3.8. Disease and Pest Control

Capacity will be built to enable the establishment of plant health management clinics that will offer diagnoses and recommendations services on prevalent and emerging pests and diseases arising due to climate change.

The Sector will develop 10 livestock disease control strategies and contingency plans, expand tsetse belt control areas from 5 to 8 through suppression of tsetse flies and build capacity of farmers to utilize the reclaimed land. In addition, annual vaccines production will be increased from 40 million to 100 million doses; boost Border Inspection Post (BIP) capacity to prevent entry into the country of Trans-boundary diseases; rehabilitate and equip 11 laboratories, refurbish and equip 4 efficacy trial centres; carry out epidemiological surveillance of animal diseases and undertake inspection of animals and approval of premises such as hatcheries, breeding centres, quarantine stations; certification of animal products; approval of processing facilities and enforcement of disease control measures.

The Sector will provide plant protection services through monitoring, surveillance and control of trans-boundary pests (*Quelea Quelea*, Armyworm, Fall Armyworm & Locusts). In collaboration with international organizations and county governments, the sector will carry out *Quelea* colony surveys and control operations; installation and servicing of armyworm traps; conducting locust surveys and controlling 100% of locust outbreaks and training county staff. Surveillance and monitoring of emerging pests and diseases will also be undertaken by carrying out national surveys on Maize Lethal Necrosis Disease (MLND), Potato Cyst Nematode (PCN) and *Tuta absoluta*. Training of stakeholders will be conducted and technical materials on emerging pests developed.

The Sector will conduct post registration surveillance by sampling and analyzing for quality over 350 pesticide samples annually, undertake technical evaluation of new pest control products and monitor local Biological efficacy trials for new pest control products. The sector will also adopt the use of data extrapolation and crop grouping to ensure that minor and specialty crops have some registered pest control products to manage pests. The sector will enhance and increase inspection activities through the pesticide supply chain by inspecting at least 7150 pesticide premises annually.

4.3.8.1. Development of Modular Aflasafe Plant and Laboratory (Machakos)

Aflatoxin adversely affects harvested grains quality leads to great post-harvest losses. The aflatoxin

contaminated grains is fatal to human beings and livestock if consumed. The project will generate technologies for prevention, management and control of aflatoxin to enhance food and nutrition security, reduce health risks and improve incomes.

4.3.9. Agricultural Technology Development Programme

This will entail support to agro-processing and reduction of post-harvest losses. The programme aims at improving access to modern and emerging agro-processing technologies to enhance value addition and better access to the market for agricultural products. This will be achieved through up scaling appropriate technologies for agro-processing and post-harvest handling through modernization and conversion of the 10 existing Agricultural Engineering Technology Development Centres (ATDCs) into centres of excellence. The strengthening of ATDCs will be achieved through capacity development, equipping with appropriate machinery and infrastructure development.

4.3.9.1. Agricultural Mechanization Programme

This programme will involve strengthening adoption of agricultural mechanization through supporting counties to provide affordable agricultural mechanization services to small scale farmers. This will be achieved through sourcing and distribution of 600 tractors and accessory equipment and 3,000 walking tractors to county governments. The Sector will collaborate and partner with countries of origin and the end users of the technologies in the counties.

4.3.9.2. Soil and Water Conservation Programme

Strengthening soil and water conservation is a national priority. A nationwide programme on soil and water conservation will be implemented to address loss of soil nutrients through soil erosion, and to conserve the little available moisture in the soils for sustainable crop production in the emerging environment of climate change. The programme will entail capacity building of staff in the 47 counties.

4.3.10. Climate Smart Agriculture

The country's agriculture is predominantly rain-fed and therefore vulnerable to climate change particularly changes in temperature regimes and precipitation patterns, and extreme weather events. This leads to, among others, unsustainable land and agricultural water management.

To address the effects of climate change on agricultural systems, the Sector will develop and implement strategies for early warning, early preparedness and response. The Sector will also build the capacity of stakeholders on improved Climate Smart Agriculture (CSA) technologies and practices; identify and promote suitable crop insurance products as a means of climate risk transfer; Develop and maintain a database inventory for CSA and promote integrated soil and water management. Techniques for effective and efficient agricultural water use, including rain water harvesting, on farm water harvesting and waste water management will be promoted.

The Sector will mainstream sustainable natural resource management to reduce emissions as a co-benefit through promotion of agro forestry. In addition, techniques and innovations that either use fuel efficiently or green energy along agricultural value chains will be promoted. Further, capacity of agricultural sector stakeholders on Measuring, Reporting and Verification (MRV) processes for GHG emissions will be developed.

4.3.11. Capacity Building Programme

4.3.11.1. Training;

To enhance the capacity of training institutions, the sector will expand facilities at the Bukura Agricultural College, the Kenya School of Agriculture, Animal Health Industry Training Institute (AHITIs), Meat Training Institute (MTI), Dairy Training Institute (DTI) and other training institutions. Griftu Pastoral Training Institute and National Bee keeping Institute will be up graded to offer certificate and diploma courses. This will increase access to pre-service and in-service courses for agricultural personnel. Kenya School of Government (KSG) will also be engaged and supported to provide evidence based policy planning trainings.

4.3.11.2. Gender mainstreaming;

The sector will enhance gender mainstreaming in all its projects, programmes and budgeting. It will facilitate integration of gender balance in human resource policies and practices; and engender the work place with appropriate gender responsive facilities. The sector will also generate gender disaggregated data; develop, promote and disseminate gender friendly agricultural technologies along the value chains to enhance sector growth and food security. Further, the sector will upscale the Gender Mainstreaming Package (GMP) developed during the MTP II.

4.3.12. Agricultural Research Project

To achieve food security through increased productivity, research institutions will focus on technologies and innovations development; capacity building in research and operationalization of systems for coordination and regulation; catalyse transfer and utilization of agricultural and livestock research outputs; knowledge, information and products storage and sharing.

The Agriculture Information and Resource Centre (AIRC) will be transformed to enhance its capacity to consolidate knowledge management of agricultural research outputs, and collation of training manuals. Transforming of AIRC will help provide a platform for interaction/feedback between extension workers (public/private), researchers, farmers, and NGOs.

Research will also focus on developing and commercialization of indigenous vegetables, fruits and other crops which may be better adapted to the areas which are at risk to climatic issues. Policies and legal frameworks will be reviewed with the aim of strengthening the agriculture research agenda and making collaborations and linkages between stakeholders more effective.

4.3.13. Industrialization, Manufacturing and Agro- Processing

4.3.13.1. Leather Development

This project will focus on policy development, standards and legal framework, to improve the quality and quantity of hides and Skins for the leather industry. Build capacity of county governments on animal health, production and value addition of hides and skins.

4.3.13.2. Equipping of Tea Research and Development Plant

Kenya has traditionally been producing and marketing black tea. Tea has got a wide range of products that can be produced and commercialized. The enhanced range of products will increase the market cover for Kenyan tea leading to more agro processing and contribute to a high percentage of the GDP. The research plant will be used for conducting cutting edge research on value addition technologies or diversification of tea value added products. It will also be used as a training facility for technicians in the tea industry, food science and food engineering disciplines. The prompt completion of this plant will contribute greatly to enhanced manufacturing and agro-processing, employment and income generation.

4.3.13.3. Improvement of Sericulture Research and Development

The country has a great potential to produce natural silk which is in high demand. The silk produced will be processed to finished products for sale internationally and within the country and thus curb imports of silk materials. The project aims at generating technologies for improved silk production, agro-processing and manufacture of silk based textiles for income generation and employment creation.

4.3.13.4. Modernization of Kenya Meat Commission

The focus in this project will be upgrading of plant, equipment and machinery in order to enhance efficiency in production and capacity utilization from 28% to 80% thus increase livestock intake. In addition, process and produce better quality hides and skin due to the installation of de-hiding machine. The rejection rate is anticipated to drop from the current rate of 5% to 40% as a result of the automated machine.

5.0 POLICY, LEGAL AND INSTITUTIONAL REFORMS

The Sector will undertake the following policy, legal and institutional reforms to facilitate its growth during the MTP III period.

- i. **Agriculture Sector Strategy for Growth and Transformation:** The aim of this roll-out is to review the Agriculture Sector Development Strategy (ASDS 2010 – 2020) in order to refocus the blue print for guiding agriculture Sector growth within the context of a devolved system of Government and the current emerging challenges in the agriculture sector;
- ii. **National Agriculture Sector Extension Policy (NASEP):** Revise in line with devolution;
- iii. **National Agriculture Insurance Policy:** The Overall objective of the National Agriculture Insurance Policy is to provide a policy framework for the management of agricultural production risks among producers and increase productivity in agriculture through improved access to credit and higher yielding technology and support transition from subsistence to commercially oriented farming;
- iv. **Food Waste Management Policy:** The overall policy objective is to contribute to improved food and nutrition security through improved management of food waste along the food commodity value chains (from farm to fork). Outlined interventions will strive to identify leaks within the food value chains that lead to food wastage and also incorporate social measures for enhancing access by vulnerable groups in society to food (e.g. street people and homes);
- vi. **Fibre Crops Policy:** The objective of the Fibre Crops Policy is to provide an overall framework guiding the growth and development of the fibre crops' (e.g. Cotton, sisal, jute etc) industries for enhancing their contribution to the agriculture sector GDP. The policy will outline interventions required for ensuring that the sub-sector effectively contributes to agro-industry, improved incomes and better livelihoods for producers;
- vii. **Oil and Nut Crops Strategy:** The oil and nut crops strategy aims at enhancing the contribution of the oil and nut crops for improved food security, improved incomes and enhanced foreign exchange earnings. The strategy targets among others, improvement of edible and other industrial oil crops to Kenya's self-sufficiency in edible oil requirements. The Strategy will also target to enhance the development nut crops value chains for improved agricultural export earnings while also addressing food nutrition security;
- viii. **Roots and Tubers Crops Strategy:** This aims at improving contribution of Root and Tuber Crops to food and nutrition security as an alternative to staple food in the country;
- ix. **National Agricultural Mechanization Strategy (NAMS):** Pursuant to enactment of the National Agricultural Mechanization Policy the sector will spearhead the formulation of a national agricultural mechanization strategy and monitor its implementation by stakeholders;
- x. **National Rice Development Strategy (2018 – 2028):** The aim of the strategy is to strengthen commercialization of rice farming and move rice production, processing and marketing into public-private sector partnerships with support from development partners;
- xi. **National Agricultural Marketing Strategy:** This strategy will play a pivotal role in the commercialization of agricultural sector in Kenya. The strategy will address customer needs and desires for agricultural produce and products and give policy guidelines on how this demand can be met. The strategy will also articulate areas of support by the government to farmers in creating efficient markets that will result in increased incomes;

- xii. There are other policies and strategies that are ongoing which will be completed during the MTP III period that include: Agriculture Policy, Urban and Peri- Urban Policy, Agro Chemical Industry Policy, Organic Agriculture Policy, Sugar Industry Policy, Cereals Policy, National Agricultural Soils Management Policy and Climate Smart Agriculture Strategy. Livestock policies, bills and strategies to be finalized will include: The Sessional Paper No 2 of 2008, The National Livestock Policy, Livestock Bill, Veterinary Policy, Animal Breeding Policy and Bill, Bee Keeping Policy and Bill, Animal Feeds Policy and Bill, Poultry Policy, Camel Policy, Animal Disease Act, Veterinary Public Health Bill, Animal Welfare Bill, Animal Identification bill and Veterinary Governance Bill;
- xiii. Livestock Insurance Policy will be developed to safeguard the livelihoods of pastoralist in the ASAL areas;
- xiv. To improve food safety governance and enhance market access and competitiveness of Kenya's animal based products, the sector will develop Food Safety Policy and Protocols for Food Defence;
- xv. To spur growth in Leather industry the Ministry will develop Hides and skins, Leather and leather products Development Strategy; Standards for Quality control of hides, skins, leather and leather products and review the Hides, skins and Leather Trade Act (Cap 359);
- xvi. In addition, Beef Industry Development Strategy will be developed with its implementation framework to streamline the operation of the beef industry in the country;
- xvii. To comply with the Kenyan constitution 2010 dispensation and include food of other animal origin the sector will amend the Meat Control Act (CAP 366);
- xviii. Antimicrobial use guidelines; Development of guidelines that will assist the use of antimicrobials;
- xix. Strategy for Management of Acaricide: Acaricide resistance is one of the main reasons for the failure of performance. It is therefore necessary to come up with a strategy to ensure that the current products are used prudently to prolong their lifespan as well as come up with other measures to manage this dangerous pest to livestock;
- xx. Bee Health Regulations and Strategy: To address the quality of hive products the sector will come up with regulations and Strategy for export and import of bee products in the country;
- xxi. Operationalization of the Livestock and Livestock products development and Marketing board:: The board will regulate the livestock and livestock products development and marketing industry and co-ordinate the promotion and improvement of livestock management systems in the country for sustainable development of the livestock industry;
- xxii. Operationalization of the Veterinary Medicines Council: The council will regulate production and distribution of veterinary drugs and medicines in the country to ensure compliance with standards;
- xxiii. Other livestock strategies that will be completed during the MTP III include: Conventional and Emerging Livestock Breeding strategy, Standards for inspection of animal feedstuff, animal products, by-products and associated premises, Regulation of food safety traceability. Development of Codes of Inspection for conventional animal products. Review National vector control strategies and legal framework on pests of bees, Vector and zoological Management Strategy; and
- xxiv. Complete the review of legal framework on pest control products to address emerging issues. This will include the completion of the pending Pest Control Products Bill and revision of regulations on pest control products.

6.0 MONITORING AND EVALUATION

For successful implementation of the sector plan, the Draft M&E framework will be finalized as an integral component to ensure the plan interventions are achieved in a cost effective, coordinated and harmonized approach at both the national and county levels.

The M&E framework is expected to be consistent with the National Integrated Monitoring and Evaluation System (NIMES) and have clear Terms of Reference for relevant stakeholders in data collection, performance indicator to be monitored, evaluated and reporting at all levels. An Annual Sector Review will be conducted to assess status of implementation. The Annual Sector Review report will be shared with the public stakeholders to inform on status of implementation of the Sector Plan as well as the next steps.

ANNEX I: IMPLEMENTATION MATRIX

B2: AGRICULTURE AND LIVESTOCK

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018 2019	2019/ 2020	2020/ 2021	2021 / 22
Goal:												
Strategic Objective:												
Flagship Programme 1: Fertilizer Subsidy Programme												
Fertilizer Subsidy Programme	To improve agricultural productivity through accessible, affordable and quality fertilizers	200,000MT of assorted fertilizers subsidized annually; Improved productivity per ha; organic fertilizer factory established at Lake Olbolossat	MT of subsidized fertilizer; Yield per acre by smallholder farmers; price of 50 kg bag of fertilizer;	SDCD, CGs, PPP	2018-2022	GoK	21,500	4,300	4,300	4,300	4,300	4,300
Flagship Programme 2: Coastal Disease Free Zones Programme												
Establishment of the DFZs at Bachuma, Miritini and Kurawa	To enhance local, regional and international trade in livestock and livestock products	Adherence to SPS requirements enhanced Increased exports of livestock and livestock products	No. of sites established % increase of livestock and livestock products exported	SDCD SDL	2018-2022	GoK	2,500	500	500	500	500	500
The Big Four Programmes 1: Large scale production programme												
Additional land under production	To increase food and nutrition security	Increased food production	MT (maize, potato, rice, cotton, aquaculture) Value of feeds	SDCDSL	2018-2022	GoK	72	5	7	10	20	30
Local Blended fertilizer (50/50)	To increase food and nutrition security	Increased fertilizer production locally produced.	MT of fertilizer locally blended	SDCD	2018-2022	GoK	17,500	2,500	2,500	2,500	5,000	5,000

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Potato Seed Production	To increase food and nutrition security	New and quality varieties of potato seeds produced	MT of potatoes produced	SDCDSDL	2018- 2022	GoK	150	30	30	30	30	30
Mechanization (potato, rice)	To increase food and nutrition security	Increased production	MT of potatoes and rice produced	SDCDSDL	2018- 2022	GoK	900	450	255	60	65	70
Liming	To increase food and nutrition security	Enhanced soil fertility	Growth rate in agriculture production	SDA SDL	2018- 2022	GoK	16,500	2,500	5,000	3,000	3,000	3,000
Programme 2: Drive small holder productivity and agro-processing												
1000 SMEs	To drive smaller holder productivity and agro-processing	Increased productivity and agro-processing	No. of SMEs supported	SDCDSDL	2018- 2022	GoK	215	40	70	35	35	35
Commercialized feed systems	To drive smaller holder productivity and agro-processing	Increased livestock productivity and agro- processing	MT of feed	SDL	2018- 2022	GoK	30	10	5	5	5	5
Food Hub	To drive smaller holder productivity and agro-processing	Improved food storage	Quantity of food	SDCDSDL	2018- 2022	GoK	268	38	100	10	100	20
Sheep yard	To drive smaller holder productivity and agro-processing	Increased production of mutton	Value for mutton	SDCDSDL	2018- 2022	GoK	140	5	60	5	60	10
Potato processing factory	To drive smaller holder productivity and agro-processing	Enhanced value addition of potatoes	Value of potatoes processed	SDCDSDL	2018- 2022	GoK	1,030	200	800	10	10	10
Lake Victoria fish handling sites	To drive smaller holder productivity	Improved cold storage	Value of fish handled	SDCDSDL	2018- 2022	GoK	442.5	53	85	84.5	100	120

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Programme 3: Reduced cost of food												
SFR (Contract Farming).	To reduce food prices	Increased productivity	No. of new contracts signed	SDCDSL	2018-2022	GoK	7,005	5	1000	1500	2000	2500
Redesign subsidy model	To reduce food prices	Increased productivity.	Redesigned model	SDCDSL	2018-2022	GoK	30	10	5	5	5	5
Cold storage (potatoes)	To reduce food prices	Reduced wastage	Value of potatoes stored	SDCDSL	2018-2022	GoK	1,000	100	300	200	200	200
Cold storage (Fish)	To reduce food prices	Reduced wastage	Value of fish stored	SDCDSL	2018-2022	GoK	920	20	200	300	200	200
Enforcement of laws and regulation.	To strengthen regulation framework	Strengthened regulation framework	No. of laws enforced	SDCDSL	2018-2022	GoK	140	30	50	20	20	20
Other Priority Programmes												
Programme 1: Food Security programme												
Rice Development Project	To move the country towards self-sufficiency in rice production by 2030.	Rice production increased from the current production levels	No. of MT of rice produced	SDCDAFA, DPs, CGs	2018-2022	GoK	25,271	5,061	5,075	5,055	5,040	5,040
Irish Potato Support Project	To increase production and reduced peak season wastage	Enhanced production and food sufficiency	No. of MT of Irish potato produced	SDCD, ADC, KALRO, AFA, CGs	2018-2022	GoK	7,000	1,500	1,500	1,500	1,500	1,000
Strategic Food Reserve Trust Fund (SFRTF)	To maintain sufficient stocks of food commodities	Adequate food reserves;	Mt. of food stuff reserved and cash (Kshs) equivalent	SDCDSL, SFRFB, NCPB, New KCC, KMC	2018-2022	GoK, DPs	15,000	4,000	3,000	3,000	3,000	2,000
	Enhanced food security	5,000MT corned beef; 10,000MT powdered milk	MT. of beef and milk and cash equivalent	SDL	2018-2022	GoK	12,500	2,500	2,500	2,500	2,500	2,500

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Strategic feed reserve	To improve availability of fodder in ASAL areas	Reduced loss of livestock during drought	No. of bales of hay conserved, Tons of range pasture seeds distributed	SDL	2018- 2022	GoK	2,500	500	500	500	500	500
Irrigated Pasture Development programme	To provide adequate pasture to pastoralist during dry period	Irrigate 10000 acres of land for the production pasture	Amount of pasture produced and distributed to pastoralists	SDL	2018- 2022	GoK and PPP	1,334	1,066	1,334	1,066	1,334	1,066
Livestock Feeds Production and Promotion	To improve quality and quantity of feeds	To attain self sufficiency in production of feeds	No. Farmers trained Amount of feeds produced No of post- harvest infrastructure constructed	SDL/KALRO/AD C	2018- 2022	GoK	4,500	500	550	400	400	400
Establishment of feed lots in strategic sites	Support, to food security and agro processing by providing raw material in the meat and leather processing facilities	stocking 5 million bales of hay and 100 MT of pasture seeds in 6 pilot feedlots	No. of Feed lots established	SDL/ PPP	2018- 2022	GoK /PPP	1,200	600	270	220	150	150
Promotion of Pig production	promote development of commercial pig enterprises	Increased Food Security and income	No. of Commercial pig production rearing enterprises (SMEs) supported	SDL	2018	GoK	760	85	85	90	230	270
Promotion of Rabbit production.	Conservation and multiplication of genetic material and avail quality breeding stock to	Increased farm productivity, incomes and improved livelihoods for the pig keepers	No of breeding stocks produced and availed to farmers	SDL	2018- 2022	GoK	67	10	10	10	12	15

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)						
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22	
Pastoral Resilience Building Program	To build resilience for pastoral and agro-pastoral communities in drought prone areas To improve Natural resources management, market access and trade, livelihood support to pastoralist	Pastoralist engaging in agriculture. Construction/rehabilitation of 20 livestock sale yards and 2 hay sheds /fodder banks,	No. Of agro- pastoralist No. Of livestock facilities completed and in use No. of value chains improved	SDCD, DPs, CGs SDL, DPs, CGs	2018- 2022 2018- 2022	GoK, DPs GoK, DPs	2,300 8,500	1,100 2,500	300 2,000	300 1,878	300 1225	300 1225	
Nutrition Security Project	To enhance food production and capacity building on value addition and utilization of a variety of food crops.	Improved production and utilization of staple cereals, root/tuber crops and traditional high value foods. Food and Nutrition Security Council Established	MT of staple cereals, root/tuber crops and traditional high value foods produced and utilized National Food and Nutrition Security Council established	SDCD,	2018- 2022	GoK, DPs	1,350	270	270	270	270	270	270
Agricultural Inputs Access Project	To improve access to farm inputs for enhanced agricultural production	Increased use of fertilizer and certified seeds Cereal and grain legume yields increased,	No. of MT of fertilizer and certified seeds distributed to small scale farmers	SDCD, CGs	2018- 2022	GoK, DPs	3,000	600	600	600	600	600	600

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Farmer Registration Project	To develop a National Farmer Register disaggregated to County level	Farmers database established, Reliable information for appropriate policy formulation and capacity building captured	Database on farmers established with reliable information	MOA&I, KNBS	2018- 2022	GoK	1,650	500	1,000	50	50	50
Smallholder Dairy Commercialization Project	To develop capacities in smallholder for production and processing dairy produce	Increased productivity, access to market and finance to farmers and traders	%Increase in dairy production. % increase in sales of dairy products	SDL	2018- 2022	GoK /IFAD	4,8390	3,569	80	440	415	415
Livestock Productive Assets Securing Project	To secure Land Titles for the institutions	Institution secure title Deeds	No. Livestock institutions issued with title deeds	DVS, DLP	2018- 2022	GoK	600	150	150	150	100	50
Gender Mainstreaming	To engender policies, programmes and legal documents	Gender inclusiveness enhanced	No. of policies, projects, programmes engendered	SDCD,	2018- 2022	GoK	150	30	30	30	30	30
Programme 2: Agricultural Productivity Improvement Programme												
Semen Production	Increase semen production and preservation	Improved livestock quality	No. of doses produced and distributed	KAGRC/ADC	2018- 2022	GoK	700	100	200	200	100	100
Establishment of Liquid Nitrogen Plants	To improve access to AI services	Liquid nitrogen plants installed	No. of farmers with access and affording AI services	KAGRC/	2018- 2022	GoK	10,300	650	100	200	95	95
Support to research, breeding and Multiplication in Livestock Farms	To produce and conserve quality breeding stock germplasm	5,000 animals distributed to farmers All livestock farms equipped with machinery for efficient farm operations	No. of high breed animals bred and distributed to farmers	SDL/KALRO	2018- 2022	GoK	450	150	150	150	150	150

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Support for Improvement of Added Value to Coffee	To enhance coffee productivity and quality of the coffees	Increased coffee production	No. of MT of coffee produced	KALRO	2018- 2022	GoK	3,100	150	38	38	38	38
Programme 3: Agricultural Enterprises Diversification Programme												
Traditional High Value Crops (THVC) Programme	To improve farmers access to quality seed and planting materials of drought tolerant Traditional High Value Crops in the Arid and Semi-Arid Areas	Production and consumption of THVC in arid and semi- arid areas increased	No. of MT of high Value seed distributed	SDCD, KALRO	2018- 2022	GoK	239	56	52	47	44	40
Miraa Farmers Livelihood Improvement Project	To improve livelihoods of miraa farmers	Improved exports and export income Additional enterprises promoted Market sheds and water harvesting structures constructed	Value of Miraa exported. No. of enterprises promoted. No. of market sheds and water harvesting structures constructed	SDCD,	2018- 2022	GoK	3,500	1,000	1,000	500	500	500
		Miraa directorate established, Miraa industry regulations developed and enforced, Miraa standards and codes of practice developed and enforced	Establishment of Miraa directorate	AFA	2018- 2022	GoK	800	200	150	150	150	150
Bee Bulking Project	To improve hive productivity and livelihoods of	Increased Annual honey production from 25,000- 40,000MT.	% increase in honey production	SDL, CGs	2018- 2022	GoK	250	50	50	50	50	50

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Programme 4: Market Access and Product Development Programme												
Sanitary and Phytosanitary standards Improvement	To improve market access through policy, legal and institutional reforms to enhance compliance to standards and procedures	Enhanced and competitiveness reduced product rejections levels	Percentage in reduction of products rejections No. of polices laws and standards developed /reviewed and enforced	SDCD, SDL	2018- 2022	GoK	750	90	120	150	180	210
	To expand and improve the capacity of the system	An automated MIS disseminating real time agricultural market information developed	Establishment of an automated MIS	SDCD, DPs	2018- 2022	GoK	66	50	4	4	4	4
Promotion of Agricultural Marketing Information	To develop a web based e- Soko platform integrated to the regional e-Soko	e-soko Platform developed, Enhanced regional trade	Establishment of a web based e-soko Platform	SDCD, DPs, MoICT	2018- 2022	GoK	500	100	100	100	100	100
	Platform to study the effects of emerging marketing models, emerging markets, products and impacts of infrastructure in market access	Information sharing between the Northern corridor partner States Recommendations to address identified gaps and bottlenecks in agricultural market access implemented	Information sharing platform	SDCD,	2018- 2022	GoK	30	6	6	6	6	6
Implementation of Regional Bilateral and Multilateral Agreements and Commitments	To promote regional and international trade	Trade agreements and standards implemented, Protocols ratified	No. of trade MOUs and Agreements signed	SDCD, SDL, MFA, SDT	2018- 2022	GoK, DPs	185	37	37	37	37	37

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
	CAADP To transform the Africa agriculture and improve sector growth by 6% pa for the CAADP countries	Reduce hunger by 50% by 2025	Percentage reduction of hunger	MoALF	2018/23	GoK, DPs	500	100	100	100	100	100
Market Infrastructure Development	To develop guidelines and technical support on construction and improvement of existing physical market infrastructure and access roads	Improved access to Agricultural market	Guidelines on physical market s infrastructure and access roads constructions development	SDCD,	2018- 2022	GoK	50	10	10	10	10	10
	To facilitate livestock marketing	50 holding grounds and out spans rehabilitated	No of holding grounds and out spans rehabilitated	SDL	2018- 2022	GoK	600	150	150	150	150	0
		Completion and equipping of 6 tanneries	No of tanneries completed and equipped	SDL	2018- 2022	GoK	600	300	100	100	100	
		4 export slaughter abattoirs (houses)	No export slaughter abattoirs (houses) completed	SDL	2018- 2022	GoK	6,500	2,500	2000	1000	1,000	0
		12 livestock markets developed	No livestock markets developed	SDL	2018- 2022	GoK	120	40	40	40	0	0
Standard Market Access Project(SMAP)	To enhance market access and competitiveness	Expanded market for agricultural and livestock product	No. Of new international markets for agriculture and	SDL	2018- 2022	GoK	235	35	50	50	50	50

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Livestock Value Chain support	To improve value addition facilities for livestock product	Coolers installed, Milk testing laboratories equipped milk analysers distributed to dairy groups mini feed processing	No. Of milk processing facilities distributed and being used	SDL, CGs,	2018- 2022	GoK, DPs	11,866	11,626	80	80	80	0
Programme 5: Agricultural Insurance Programme												
Crop Insurance Project	To manage risks and losses amongst smallholder farmers and to increase crop productivity	31 counties covered, Five million insurance policies purchased	No. of counties covered No. of insurance policies purchased	SDGD, Insurance companies	2018- 2022	GoK	2,500	500	600	700	800	900
Kenya Livestock Insurance Program	To mitigate risks from drought related disasters and build resilience of pastoralists for enhanced and sustainable food security.	500,000 TLU's covered 14 ASAL counties covered	No. Of livestock insured No of beneficiaries	SDL/PPP	2018- 2022	GoK	5,000	1,000	1,000	1,000	1,000	1,000
Programme 6: Industrialization, Manufacturing and Agro-processing												
Leather Development	Improved policy framework	Improved quality and quantity of hides and Skins for the leather industry.	No of policies and Standards developed No of County staff capacity built	SDL/ Council of Governors	2018- 2022	GoK	750	123	123	100	200	250
Modernization of Kenya Meat Commission	To upgrading of plant, equipment and machinery	To enhance efficiency in production and capacity utilization	% increase in capacity utilization	KMC	2018- 2022	GoK	6285	0	0	3,485	1,300	1,500

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Equipping the Tea Research and Development Plant	To have improved value addition through research, technologies and capacity building	Enhanced product diversification for Kenya tea, Improved competitiveness of Kenyan tea in the international market increased export of product diversification for Kenya tea,	No. Of factories constructed No. Tea products and amount of production Export earnings	KALRO	2018-2022	GoK	1,349	839	367	143	0	0
Programme 7: Youth in Modern Agriculture Programme												
Youth in Modern Agriculture Project	To increase youth participation in horticultural production, agribusiness and agro-processing	25,000 pupils in 100 primary schools and 1,500 Youth out of schools trained; Production, agro processing and value addition equipments distributed	No. of Pupils and youth trained. No. of processing and value addition equipments distributed	SDCD,	2018-2022	GoK DPs	600	100	110	120	130	140
Programme 8: Disease and Pest Control												
Develop Livestock disease strategies and contingency plans	To improve the management of livestock diseases	SDL disease strategies and contingency plans developed	No of strategies and contingency plans developed	2018-2022	60K	26	5	5	5	5	6	6
Tsetse Eradication	To suppress tsetse flies and capacity building of stakeholders to utilize reclaimed land	Tsetse flies suppressed in tsetse belts areas	% reduction in incidences of trypanosomiasis Cases	KENTTEC	2018-2022	GoK	4000	1,960	377	377	377	400
National & Regional Veterinary Investigation Laboratories	To enhance diagnostic capacity for animal diseases	11 labs rehabilitated and equipped	No. of laboratories rehabilitated	SDL		GoK	500	100	100	100	100	100
Veterinary Diagnostics and Efficacy Trial Centers	To strengthen quality assurance centres	4 efficacy trial centers refurbished and equipped	No. of trial centers rehabilitated	SDL		GoK	250	50	50	50	50	50

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Vector Regulatory and Zoological Services, Training Institutions	To enhance capacity for pests control	Completion of Kiboko Vector and Zoological Training and Efficacy Centre	Centre completed and operational	SDL		GoK	300	50	100	50	50	50
Vaccines Production.	Increase production of vaccines for prevention of livestock diseases	100m doses of vaccines produced per year	No. of vaccine doses produced	KEVEVAPI		GoK	1600	300	300	300	300	400
Ports of Entry and Border Post Veterinary Inspection Services	To strengthen capacity of Border Inspection Points to prevent entry into the country of trans boundary diseases.	10 ports of entry and one-stop border posts equipped	No. of cases inspected and tested	SDL		GoK	100	20	20	20	20	20
National animal health training institutions (AHTI Kabete, Ndomba, Nyahururu & MTT)	To improve animal health extension services	Increased availability of skilled manpower in animal health	No. animal health graduates trained health graduates trained	SDL		GoK	630	215	215	100	50	50
Programme 9: Agricultural Technology Development Programme												
Support to Agro-Processing and Reduction of Post-Harvest Losses	To improve access to agro-processing and post-harvest technologies	10 ATDCs transformed and modernized to Centres of Excellence Appropriate machinery and equipment acquired; Infrastructure developed (Laboratories, workshops, incubation units)	No. of ATDCs transformed and modernized No. of machinery, equipment Laboratories, workshops and incubation units	SDCD,	2018-2022	GoK, DPs	2,500	500	500	500	500	500

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Integrated agricultural research for development	To develop technologies and information that will improve agricultural productivity and nutritional quality	Technologies developed	No. of technologies developed	KALRO	2018-2022	GoK	900	926	477.3	263.5	185.6	0
Programme 10: Agricultural Mechanization Programme												
National Agricultural Mechanization Project	To improve agriculture production	1,500 tractors and accessory equipment procured and distributed	No. of tractors and accessory equipment procured and distributed	SDCD,	2018-2022	GoK, Dev Partners	12,000	2,500	2,500	2,500	2,500	2,500
Programme 11: Soil and Water Conservation Programme												
National Soil and Water Conservation Project	To promote sustainable use of natural resources for agricultural production	Finalize Soil Management policy Develop soil and water conservation strategy	Soil Management policy finalized Soil and water conservation strategy developed	SDCD,	2018-2023	GoK, DPs	500	100	100	100	100	100
Programme 12: Climate Smart Agriculture Programme												
Climate Smart Agriculture	To promote adaptive capacity of farmers and minimize emissions from agriculture systems	Develop and maintain a database inventory for CSA Build capacity of Stakeholders on improved Climate Smart Agriculture (CSA) technologies and practices	Climate Smart database developed No of Stakeholders trained on improved CSA	MoA&I, CGs KALRO	2018-2022	GoK, DPs and PPP	47,100	7,065	11,775	14,130	7,065	7,065
Programme 13: Capacity Building Programme												
Leather Institute (Ngong)	To build capacity for leather industry to improve quality	Leather Institute constructed and operationalized	No. of graduates trained	SDL		GoK	550	50	200	200	50	50

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
National Bee Keeping Institute	To strengthen capacity	Bee Keeping Institute constructed and operationalized	No. of graduates trained	SDL		GoK	176	120	26	10	10	10
Dairy Training Institute	To increase availability of skilled manpower in Dairy technology	Dairy Institute constructed and operationalized	No. of graduates trained	SDL		GoK	240	150	0	59	26	4
National Rabbit Training Centre Ngong	To have increased availability of skilled manpower in Rabbit production	Training centre completed and operational Increased rabbit meat production	No of skilled manpower produced	SDL		GoK	68	60	8	0	0	0
Pastoral Training Centre – Griftu	To increase availability of skilled manpower in pastoral livelihood	Established training centre	No of skilled manpower produced	SDL		GoK	225	150	59	5	5	5
Veterinary and Para-Vet. professionals Internship program	Enhance professionalism in provision of veterinary services	500 Veterinary and Para-professionals graduates 5 regional offices established	Number of graduates registered No. of offices established	KVB	2018-2022	GoK	200	40	40	40	40	40
Development of infrastructure in Training institutions	Improve and modernize training facilities	Institutes having modern facilities	No of training institutions refurbished	SDL	2018-2022	GoK	20		10	10	0	0
Programme 14: Agricultural Research Programme												
Kenya Rural Development Programme	To have Increased coffee productivity through establishment of nursery structures and build capacity in	Increased coffee export revenues and income levels of coffee growers	No. of improved coffee of nurseries established No. Of Farmers Trained	KALRO	2018-2022	GoK	1,468	1032.8	391	45.8	0	0

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Science and Technology Research Programme Support (SATREPS)	Develop rice varieties and verify good breeding materials, To have improved Research and Development on Genetic Resources prosperity and Improved food security	Increased rice productivity and income	No of rice varieties Developed and amount of production	KALRO	2018- 2022	GoK	352	300	26	26	0	0
Laboratories and office space at Genetic Resource Research Centre	To have improved Research and Development on Genetic Resources prosperity and Improved food security	Laboratories and offices constructed for improved environment for Conservation of genetic resources	No. Of Laboratories and office constructed. and operational. No. Of Genes conserved	KALRO	2018- 2022	GoK	1,300	585	60	400	125	125
Laboratories and office space at Veterinary Research Institutes (Alupe ,Kiboko and Marigat)	To have improved Research and Development for enhanced disease control and management	Laboratories and offices constructed for improved environment for research	No. of laboratories and office constructed and operational	KALRO	2018- 2022	GoK	2000	993	136	535	322	0
Sericulture Research by applying biological resources and molecular genetics	To have improved Research and Development for enhanced sericulture production	Increased silk productivity, and farmer incomes,	No. of research findings No. Of farmers Trained Production and Earning from Sericulture	KALRO	2018- 2022	GoK	1,200	660	132	132	132	132
Research and promotion of technologies for Management of Maize Lethal Necrotic Diseases (MLND)	Management of Maize Lethal Necrotic Diseases (MLND)	Generation of technologies and management practices for control of (MLND). This will contribute to increased food and nutrition security	No of Technologies developed	KALRO	2018- 2022	GoK	87	15	15	17	20	20

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Agribiotech and Agribusiness innovation Challenge	To stimulate completion in cutting age. Agribiotech and Agribusiness innovation	-Novel Agribiotechnologies -Agribiotech Spinoffs -Novel Agribusiness processes	-10 Novel Agribiotechnolo gies -3 Agribiotech spinoffs -3 Novel Agribusiness process	SDAR	2018- 2022	GoK / Donors	1000	-	250	250	250	250
Transformation of Agriculture Resource Information centre	To revitalize and Modernize the centre	A modern and responsive AIRC	-Enhanced HR at AIRC -Modernized equipment -Modern approach to knowledge transfer	SDAR/AIRC	2018- 2020	GoK	500	-	200	200	50	50
AGRIDATA Project	To consolidate Agriculture information to support decision making by Public and Private Sector and extension workers	A friendly portl that consolidates all agriculture information and data	-Data on farmers -Date on Agricultural output -GIS map of farmers and crops -Agriculture Policy documents -Kenyan agriculture research Publications -Agriculture Theses -Technical Publications and reports -Information on	SDAR/AIRC/K ALRO/Universiti es	2018- 2022	GoK / Donors	500	20	200	50	50	20

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
Biodeposit Project	To develop and embrace the	To establish and organic fertilizer factory at Lake Olbolossat use organic fertilizers	-Feasibility study -Project Document -Expression of interest for private investors	SDAR/KALRO	2018- 05-09 2022	GoK /Donors Investors	3000	200	300	1500	500	500
Establishment of a Biofactory	To develop Biotechnology products to combat army worm and other pests	Biopesticide product lines	At least 10 product lines	SDAR/KALRO/ Universities/Private Sector	2018 2022	GoK/ Donors	200	10	100	50	50	-
Entomopathogenic Microbial Technology Project	To isolate and Characterize Bt strains from Kenyan soils	To develop indigenous Bt strains for use in control of pests	-A Kenyan Bt- Collection from all soils in Kenya -A Kenyan Entomopathogenic fungi collection -Other Entomopathogenic Bacteria Collection	SDAR/KALRO/ Universities Biotech Companies	2018 2022	GoK/ Donors	100	5	25	20	20	20
Predators and Parasitoids of pests of Crops	To identify and develop indigenous predators and parasitoids of common pests	To develop Predators and parasitoids for use in integrated pest management (IPM)	-A collection of predators and parasitoids of common pests of crops and livestock -Predator and parasitoid based products for application	SDAR/KALRO/ Universities Biotech Companies	2018 2022	GoK/ Donors	100	5	25	20	20	20

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)					
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22
County Soil Map for Food Security Project	To develop a comprehensive Mapping of soil characteristic (Nutrients, pH) for each county	Soil Map to use placing the right agriculture value chain in the appropriate county and also to guide soil treatment	A comprehensive Soil map for each of the Counties	SDAR/KALRO/ Universities ICRAF	2018 2022	GoK / Donors	500	5	245	250	-	-
Early Warning and ME System for food security	Establish an early warning system for tracking climatic events, pests, drought or disasters	Build resilience against food insecurity arising from pests, drought or disasters	-A system for monitoring food production and consumption established -A model for predicting situations that could lead to for insecurity -A system for predicting the occurrence and distribution of major pests like the army worm.	SDAR/KALRO/ Universities KMD ICRAF DRSRS		GoK / Donors	1000	-	250	250	250	250
Programme 15: Urban and Peri-urban Agriculture Project												
Urban and Peri- urban Agriculture Project	To empower youth and women in urban and peri-urban areas with appropriate urban agriculture, livestock and fisheries technologies along the value chains	300 youth and women groups trained on urban agricultural technologies and supported with appropriate materials, tools and equipments	No. of youth and women groups trained. No. of youth and women groups supported with appropriate materials, tools and equipments	SDGD,	2018- 2022	GOK	450	70	80	90	100	110

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	Source of Funds	Indicative budget (Kshs. Millions)								
							Total	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021 / 22			
Programme 17: Policy, Legal and Institutional Reforms															
Policy Development	To provide an enabling environment for agricultural growth and development	12 agricultural policies developed and reviewed	No. of 12 agricultural policies developed and reviewed	SDCD,	2018-2022	GoK, DPs	600	120	120	120	120	120	120	120	
	Create an enabling environment for development of the livestock industry	20 livestock policies strategies and legal frameworks developed/reviewed 6 agricultural strategies developed/reviewed	No. of livestock policies developed and reviewed No. of agricultural strategies developed and reviewed	SDL SDCD,	2018-2022 2018-2022	GOK, DPs	1000 300	200 60	200 60	200 60	200 60	200 60	200 60	200 60	
GRAND TOTAL							304,6	73,698	61,854	63,154	54,326	51,643			
							75								

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Fertilizer Subsidy Programme	Facilitate access to affordable and quality fertilizer	Increased use of fertilizer by smallholder farmers Increased production and productivity per ha	No. MT of subsidized fertilizer distributed to farmers annually	SDCD, DPs, CGs, PPP	2018-2022	180,000	200,000	300,000	300,000	300,000
Establishment of the DFZs at Bachuma, Miritini and Kurawa	To enhance local, regional and international trade in livestock and livestock products	Disease free zone established	% rate of construction S of disease free zone facilities in bachuna, kurawa and miritini	SDL	2018-2022	60	70	80	90	100
Rice Development Project	To move the country towards self-sufficiency in rice production by 2030.	Rice production increased from the current production levels	No. of MT of rice produced annually	SDCD, AFA, DPs, CGs	2018-2022	124,800	148,896	193,565	270,991	406,486
Irish Potato Support Project	To increase production and reduced peak season wastage	Enhanced production and food sufficiency	No. of MT (in millions) of Irish potato produced annually	SDCD, ADC, KALRO, AFA, CGs	2018-2022	1.55	1.75	1.90	2.20	2.52
Strategic Food Reserve Trust Fund (SFRTF)	To maintain sufficient stocks of food commodities	Adequate food reserves	Bags of maize (90 Kgs) reserved and cash (Kshs) equivalent annually	SDCD	2018-2022	4	8	8	8	8

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
	"	Adequate food reserves	Bags of beans (90 Kgs) reserved annually	SDCD	2018-2022	-	40,000	40,000	40,000	40,000
	"	Adequate food reserves	MT of rice reserved annually	SDCD	2018-2022	-	13,000	13	000	13
	Enhanced food security	5,000MT corned beef;	MT. of beef and cash equivalent	SDL	2018-2022	-	5,000	5,000	5,000	5,000
	Enhanced food security	10,000MT powdered milk	MT. of milk and cash equivalent	SDL	2018-2022	-	10,000	10,000	10,000	10,000
Strategic feed reserve	To improve availability of fodder in ASAL areas	Reduced loss of livestock during drought	No. of bales of hay conserved	SDL	2018-2022	500	500	500	500	500
	To provide adequate pasture to pastoralist during dry period	Irrigate 10000 acres of land for the production pasture	Amount of pasture produced and distributed to pastoralists	SDL	2018-2022	1,066	1,334	1,066	1,334	1,066
Establishment of feed lots in strategic sites	Support, to feed security	stocking 5 million bales of hay and 100 MT of pasture seeds in 6 pilot feedlots	No. of Feed lots established	SDL/ PPP	2018-2022	6	6	8	8	8
Drive small holder productivity and agro-processing	Increased value addition and agro processing	Establish 1,000 targeted production level SMEs	No. of SMEs Established	SDCD, SDL	2018-2022	200	200	200	200	200
Livestock Feeds Production and Promotion	To improve quality and quantity of feeds	To attain Self sufficiency in production of feeds	No. Farmers trained on pasture production.	SDL	2018-2022	500	550	400	400	400
Pastoral Resilience Building Program	To build resilience for pastoral and agro-pastoral communities in drought prone areas	Construction/rehabilitation of 20 livestock sale yards and 2 hay sheds /fodder banks,	No. of livestock facilities completed and in use	DPS, CGs	2018-2022	2	5	5	5	5

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
	To improve Natural resources management, market access and trade, livelihood support to pastoralist	Improved livelihood and Natural resources management	No. of value chains improved	SDL, DPS, CGs	2018-2022	2,500	2,000	1,878	1225	1225
Promotion of Pig production	promote development of commercial pig enterprises	Increased Food Security and income	No. of Commercial pig production rearing enterprises (SMEs) supported	SDL	2018-2022	85	85	90	230	270
Promotion of Rabbit production.	Conservation and multiplication of genetic material and avail quality breeding stock to rabbit farmers.	Increased farm productivity, incomes and improved livelihoods for the pig keepers	No of breeding stocks produced and availed to farmers	SDL	2018-2022	1000	2000	2500	3000	4000
Promotion of Commercial chicken promotion	To improve access to day old chicks	Increased Income and Food security	No of Chicks distributed to farmers in millions	KALRO/ KAGRC	2018-2022	1	1	1.5	2	2
Multiplication of Bees colonies.	Improve national food and nutrition security	Improved bee colonies by selection, capturing and multiplication of sentinel bee colonies	No of bee colonies produced and distributed	SDL	2018-2022	30	30	35	50	80
Nutrition Security Project	To enhance food production and capacity building on value addition and utilization of a variety of food crops.	Improved production and utilization of root/tuber crops and traditional high value foods.	MT (Millions) of root/tuber crops and traditional high value foods produced	SDCD,	2018-2022	3.0	3.5	4.0	4.5	5.0

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Nutrition Security Project	To enhance food production and capacity building on value addition and utilization of a variety of food crops.	Food and Nutrition Security Council Established	Percentage (%) establishment	SDCD	2018-2022	20	50	100	-	-
Farmer Registration Project	To develop a National Farmer Register disaggregated to County level	Reliable information for appropriate policy formulation and capacity building captured	Completion Rate of farmers' database	MOA&I, KNBS	2018-2022	30	80	100	-	-
„	Register farmers for policy decision making	Registered farmers (about 5 million farmers)	No. of registered farmers (millions)	MOA&I, KNBS	2018-2022	0	2.0	2.0	0.5	0.5
Smallholder Dairy Commercialization Project	To develop capacities in smallholder for production and processing dairy produce	Build the capacity of 15,00 dairy farmers	No of farmers supported	SDL	2018-2022	3000	3000	3000	3000	3000
Livestock Productive Assets Securing Project	To secure Land Titles for the institutions	Institution secure title Deeds 24	No. Livestock institutions issued with title deeds	DVS, DLP	2018-2022	3	10	11	0	0
Gender Mainstreaming	To engender policies, projects, programmes and legal documents	Gender inclusiveness enhanced	Percentage of policies, projects, programmes engendered	SDCD	2018-2022	80	90	100	100	100
Semen Production	Increase semen production and preservation	Improved livestock quality	No. of doses produced and distributed in millions	KAGRIC	2018-2022	2	2	3	3	3

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Establishment of Liquid Nitrogen Plants	To improve access to AI services	Liquid nitrogen plants installed	No Liquid nitrogen plants installed	KAGRC	2018- 2022	4	2	2	2	3
Livestock Farms Development	To produce and conserve quality breeding stock germplasm	5,000 animals distributed to farmers	No. of high bred animals bred and distributed to farmers	SDL	2018- 2022	500	1,125	1,125	1,125	1,125
Vaccine production	to increase vaccine production	Improved livestock health	No. of doses of vaccine in millions	SDL	2018- 2022	40	45	60	80	100
Support for Improvement of Added Value to Coffee	To enhance coffee productivity and quality of the coffees	Increased coffee production	No. of MT of coffee produced	SDCD KALRO	2018- 2022	46,000	48,000	53,000	56,000	60,000
Miraa Farmers Livelihood Improvement Project	To improve livelihoods of miraa farmers	Improved Exports and export income increased	Value of Miraa exported (billions).	SDCD	2018- 2022	3.5	4	4.5	5	5
	To improve livelihoods of miraa farmers	Market sheds and water harvesting structures constructed	No. of market sheds constructed	SDCD	2018- 2022	-	3	3	3	3
	To improve livelihoods of miraa farmers	Established Miraa directorate	Establishment of Miraa directorate (%)	SDCD AFA	2017- 2018	100	-	-	-	-
Bee Bulking Project	To improve hive productivity and livelihoods of beekeepers	Increased Annual honey production from 25,000- 40,000MT, 200 bulking sites established	increase in honey production in MT	SDL, CGs	2018- 2022	25,000	25,000	30,000	35,000	40,000
Sanitary and Phytosanitary standards Improvement	To improve market access through policy, legal and institutional reforms to enhance compliance to standards and procedures	Reduced product rejections levels in export markets	Percentage (%) in reduction of products rejections	SDCD, SDL	2018- 2022	90	100	100	100	100

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022
Promotion of Agricultural Marketing Information	To expand and improve the capacity of the system	An automated MIS disseminating real time agricultural market information developed	Percentage (%) establishment of automated MIS	SDCD, DPs	2018- 2022	10	100	100	100	100
Promotion of Agricultural Marketing Information	To develop a web based e-Soko platform integrated to the regional e- Soko	e-soko Platform developed and integrated to the regional e-soko	Percentage (%) establishment of a web based e-soko Platform	SDCD, DPs, MoICT	2018- 2022	20	100	100	100	100
Implementation of Regional Bilateral and Multilateral Agreements and Commitments	To promote regional and international trade	Trade agreements and standards signed; and Protocols ratified for implementation	No. of trade MOUs and Agreements	SDCD, SDL, MFA, SDT	2018- 2022	3	4	5	5	5
	CAADP To transform the Africa agriculture and improve sector growth by 6% pa for the CAADP countries	Reduce hunger by 50% by 2025	Percentage (%) reduction of hunger	MoA&I	2018/23	50	100	100	100	100
Market Infrastructure Development	To facilitate livestock marketing	50 holding grounds and out spans rehabilitated	No of holding grounds and out spans rehabilitated	SDL	2018- 2022	5	15	15	15	0
		Completion and equipping of 6 tanneries	No of tanneries completed and equipped	SDL	2018- 2022	1	2	2	1	
		4 export slaughter abattoirs (houses)	No export slaughter abattoirs (houses) completed	SDL	2018- 2022	1	1	1	1	0
		12 livestock markets developed	No livestock markets developed	SDL	2018- 2022	40	40	40	0	0

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Standard Market Access Project(SMAP)	To enhance market access and competitiveness of Kenya's animal based products	Standard and product quality regulations	No. Standard and product quality regulations	SDL	2018- 2022	2	2	2	0	0
Livestock Value Chain support	To improve value addition facilities for livestock product	Coolers installed,	No. of milk coolers distributed	SDL, CGs,	2018- 2022	118	400	382	0	0
Crop Insurance Project	To manage risks and losses amongst smallholder farmers	31 counties covered for insurance policies	No. of counties covered	SDCD, Insurance companies	2018- 2022	10	10	11	0	0
”	To manage risks and losses amongst smallholder farmers	Five million insurance policies purchased	No. (millions) of new insurance policies purchased annually	SDCD, Insurance companies	2018- 2022	0.2	1.3	1.5	1.5	1.5
Kenya Livestock Insurance Program	To mitigate risks from drought related disasters and build resilience of pastoralists for enhanced and sustainable food security.	500,000 TLU's covered 14 ASAL counties covered	No. of TLU's covered	SDL/PPP	2018- 2022	90,000	100,000	200,000	300,000	400,000
Youth in Modern Agriculture Project	To increase youth participation in horticultural production, agribusiness and agro-processing	25,000 pupils in 100 primary schools trained	No. of Pupils trained.	SDA	2018- 2022	5,000	5,000	5,000	5,000	5,000
”	To increase youth participation in horticultural production, agribusiness and	1,500 Youth out of schools trained	No. of youth trained.	SDA	2018- 2022	300	300	300	300	300

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Develop Livestock disease strategies and contingency plans	To improve the management of livestock diseases	SDL disease strategies and contingency plans developed	No of strategies and contingency plans developed	2018-2022	GOK	2	2	2	2	2
Tsetse Eradication	To suppress tsetse flies and capacity building of stakeholders to utilize reclaimed land	Tsetse flies suppressed in tsetse belts areas	NO. of Tsetse flies suppressed in tsetse belts areas	KENTTEC	2018-2022	5	5	5	6	8
National & Regional Veterinary Investigation Laboratories	To enhance diagnostic capacity for animal diseases	11 labs rehabilitated and equipped	% completion rate of laboratories rehabilitated	SDL		100	100	100	100	100
Veterinary Diagnostics and Efficacy Trial Centers	To strengthen quality assurance centers	4 efficacy trial centers refurbished and equipped	% completion rate of refurbishment and rehabilitation of Efficacy Trial Centres	SDL		20	40	60	80	100
Vector Regulatory and Zoological Services, Training institutions	To enhance capacity for pests control	Completion of Kiboko Vector and Zoological Training and Efficacy Centre	%Completion of Kiboko Vector and Zoological Training and Efficacy Centre	SDL		60	70	100	0	0
Vaccines Production.	Increase production of vaccines for prevention of livestock diseases	Doses of vaccines produced per year	No. of vaccine doses produced (millions)	KEVEV/API		70	80	100	120	150
Ports of Entry and Border Post Veterinary Inspection Services	To strengthen capacity of Border Inspection Points to prevent entry into the country of trans boundary diseases.	10 ports of entry and one-stop border posts equipped	No. Ports of entry and one-stop border posts equipped	SDL		1	3	2	2	2

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
National animal health training institutions (AHITI Kabete, Ndomba, Nyahururu ,DTI MTI)	To improve animal health extension services	Increased availability of skilled manpower in animal health	No. animal health graduates trained health graduates trained	SDL		800	800	800	800	800
Support to Agro-Processing and Reduction of Post-Harvest Losses	To improve access to agro-processing and post-harvest technologies	10 ATDCs transformed and modernized to Centres of Excellence	No. of ATDCs transformed and modernized	SDCD	2018-2022	-	2	3	3	2
Integrated agricultural research for development	To develop technologies and information that will improve agricultural productivity and nutritional quality	Technologies developed	No. of technologies developed	KALRO	2018-2022	1	2	2	2	0
National Agricultural Mechanization Project	To improve agriculture production	1,500 tractors and accessory equipment procured and distributed	No. of big tractors	SDCD	2018-2022	-	600	-	-	-
"	To improve agriculture production	3,000 walking tractors procured and distributed	No. of walking tractors	SDCD	2018-2022	-	3,000	-	-	-
National Soil and Water Conservation Project	To promote sustainable use of natural resources for agricultural production	Finalize Soil Management policy Develop soil and water conservation strategy	Percentage (%) of completion for Soil Management policy; and Soil and water conservation strategy developed	SDCD	2018-2023	-	10	50	80	100
Climate Smart Agriculture	To promote adaptive capacity of farmers and minimize emissions from agriculture	Develop and maintain a database inventory for CSA	completion rate (%) in developing Climate Smart database	MoALF, CGs KALRO	2018-2022	-	50	100	-	-

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Leather Institute (Ngong)	To build capacity for leather industry to improve quality and productivity	Construction of Leather Institute	% Construction rate of Leather Institute	SDL	2018- 2022	10	20	35	50	100
National Bee Keeping Institute	To strengthen capacity	Bee Keeping Institute constructed and operationalized	Construction % rate of the leather institute	SDL	2018/20 22	10	20	50	70	100
Dairy Training Institute	To increased availability of skilled manpower in Dairy technology	Dairy Institute constructed and operationalized	No. of graduates trained	SDL	2018/20 22	100	240	300	350	350
National Rabbit Training Centre Ngong	increased availability of skilled manpower in Rabbit production	Construction of National Rabbit Training Centre Ngong	% construction rate of Training centre completed and operational	SDL	2018/20 22	70	20	100	0	0
Pastoral Training Centre – Griftu	To increase availability of skilled manpower in pastoral livelihood	Established training centre	No of skilled manpower produced	SDL	2018/20 22	100	150	240	240	250
Veterinary and Para- Vet. professionals Internship program	Enhance professionalism in provision of veterinary services	500 Veterinary and Para- professionals graduates	Number of graduates registered	KVB	2018/20 22	800	800	800	800	800
		5 regional offices established	No. of offices established	KVB	2018/20 22	0	1	1	2	1
Development of infrastructure in Training institutions	Improve and modernize training facilities	Institutes having modern facilities	No of training institutions refurbished	SDL	2018/20 22	1	2	5	6	0
Science and Technology Research Programme Support (SATREPS)	Develop rice varieties and verify good breeding materials,	Rice variety screening system established	% completion of screening system	KALRO	2018/20 22	70	95	100	0	0

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
	Develop rice better varieties and increase production	Increased annual rice production	No. of MT of rice produced annually	SDCD, KALRO	2018-2022	124,800	148,896	193,565	270,991	406,486
Laboratories and office space at Genetic Resource Research Centre	To have improved Research and Development on Genetic Resources posterity and improved food security	Laboratories and offices constructed for improved environment for Conservation of genetic resources	% construction rate of Laboratories and office	KALRO	2018/2022	0	10	30	40	100
Kenya Rural Development Programme	To have Increased coffee productivity	Increased coffee export revenues and income levels of coffee growers	No. coffee of nurseries established	KALRO	2018/2022	6	8	0	0	0
Tea Research and Development Factory	To have improved value addition through research, technologies and capacity building.	Equip Tea Research and Development Factory	% rate of Tea Research and Development Factory equipped and operational	KALRO	2018/2022	0	20	30	100	0
	Increased tea production and earnings	Enhanced production and diversification of tea,	Mt. of Tea produced	SDCD KALRO	2018-2022	473,000	480,000	490,000	495,000	500,000
	Increased tea production and earnings	Improved competitiveness of Kenyan tea in the international market	Export earnings (Kshs. Billions)	SDCD KALRO	2018-2022	125	127	129	130.8	132.0
Laboratories and office space at Veterinary Research Institutes (Alupe ,Kiboko and Marigat)	To have improved Research and Development for enhanced disease control and management	Laboratories and offices constructed for improved environment for research	No. Of laboratories and office constructed and operational	KALRO	2018/2022	1	2	2	2	3

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Sericulture Research by applying biological resources and molecular genetics	To have improved Research and Development for enhanced sericulture production	Increased silk productivity, and farmer incomes,	No. Of research findings	KALRO	2018/2022	1	2	4	5	2
Research and promotion of technologies for Management of Maize Lethal Necrotic Diseases (MLND)	Management of Maize Lethal Necrotic Diseases (MLND)	Generation of technologies and management practices for control of (MLND). This will contribute to increased food and nutrition security	No of Technologies developed	KALRO	2018-2022	15	15	17	20	20
Research and promotion of technologies for Management of Fall Armyworm.	Generate and promote novel technologies and management practices for the control of the pest	Increased food and nutrition security	No of Technologies developed	KALRO	2018-2022	25	20	20	25	30
Development of modular Aflasafe plant and laboratory safety	Reduce post harvest losses and increase food safety	Generate technologies for prevention, management and control of aflatoxin	No of technologies developed	KALRO	2018-2022	15	15	10	5	0
Leather Development	Improved policy framework	Improved quality and quantity of hides and Skins for the leather industry.	No of County staff capacity built	SDL/ Council of Governors	2018-2022	123	123	100	200	250
Modernization of Kenya Meat Commission	To upgrading of plant, equipment and machinery	To enhance efficiency in production and capacity utilization	% increase in capacity utilization	KMC	2018-2022	20	30	50	70	100
Urban and Peri-urban Agriculture Project	To empower youth and women in urban and peri-urban areas with appropriate urban agriculture, livestock and fisheries	300 youth and women groups trained on urban agricultural technologies and supported with appropriate materials, tools and equipments	No. of youth and women groups trained. No. of youth and women groups supported with appropriate materials, tools	SDCD	2018-2022	-	100	100	100	-

Programme/ Project	Objectives	Expected Output/ Outcome	Indicators	Implementing Agency (s)	Time Frame	2017/ 2018	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 22
Create a consolidated geographic information system (GIS)-based land registry	To promote agricultural production by boosting growth and productivity of all scheduled crops	Agricultural land use database/ information system developed	Completion rate (%) on GIS system	AFA	2018-2020	10	50	100	-	-
Policy Development	To provide an enabling environment for agricultural growth and development	12 agricultural policies developed and reviewed	No. of 12 agricultural policies developed and reviewed	SDCD	2018-2022	2	3	3	2	2
	Create an enabling environment for development of the livestock industry	20 livestock policies strategies and legal frameworks developed/reviewed	No. of livestock policies developed and reviewed		2018-2022	0	4	4	6	6
	Create an enabling environment	6 agricultural strategies developed/reviewed	No. of agricultural strategies developed and reviewed	SDCD	2018-2022	-	2	2	2	-