MINISTRY OF AGRICULTURE, LIVESTOCK AND FISHERIES

THE NATIONAL POTATO STRATEGY

2016-2020

Ministry of Agriculture, Livestock And Fisheries

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Editorial Team at Wambugu ATC: From Left; Jackson Muchoki (GIZ), Abed Kagundu (KEPHIS), Marion Gathumbi (MOALF), Nancy Ng'ang'a (KALRO) and Dr. Maina Machangi (MOALF).

PREFACE

Agricultural growth and development is crucial for Kenya's overall economic and social development. Agriculture directly contributes 25% to GDP and 65% of export earnings. The sector has experienced growth from 2002 after a decade long decline. Government has outlined the key role the Agriculture sector will play in its policy papers, Kenya Vision 2030 and the Agricultural Sector Development Strategy (ASDS) 2009-2020. Both of these policies aim at improving the standard of living of Kenyans by substantially reducing the number of people affected by hunger, famine and starvation. These measures are also in line with the U.N Millennium Development Goal No.1 of reducing by half extreme poverty and hunger by the year 2015.

Potato (*Solanum tuberosum* L) is emerging as one of the promising enterprises that will play a great role towards realization of the set objectives of Kenya Vision 2030 under the economic pillar because of its substantial contribution to food availability in the country. For this, potato requires attention both in terms of resources and long term planning as provided for by the draft national root and tuber crops policy. This four year National Potato Development Strategy has been developed to address the growth and development of the potato industry.

This Strategy is aligned to Kenya Vision 2030 which is the current economic blueprint for the country's development. It is also aligned to the Agriculture Sector Development Strategy (ASDS) 20I0 -2020, the Ministry's Strategic Plan 2013-2017and the Draft Agricultural Policy, 2015.

The potato strategy focuses on seven Strategic Objectives namely;

i. Strengthen Institutional, Legal and Regulatory Frame work
ii. Promote variety development and seed production
iii. Enhance Research in the potato industry
iv. Increased potato production
v. Improve post harvest handling, value addition and marketing
vi. Promote public -private partnerships in the potato industry development

vii. Improve funding to the potato industry.

The development of this potato strategy started in 2005 with the aim of promoting the growth and development of the industry. It is hoped that this strategy will harmonize the activities of the different stakeholders and capitalize on their synergies and complementarities. The implementation of this strategy will require concerted efforts by all stakeholders to translate the objectives into actions with specific outcomes. Issues that may emerge in the course of its implementation will be reviewed continuously.

The process of preparing this strategy has been participatory between the Ministry of Agriculture, Livestock and Fisheries and various stakeholders involved in the potato value chain.

I wish to recognize the support given by the Cabinet Secretary, Mr. Willy Bett, Ministry of Agriculture, Livestock and Fisheries, in the process of developing this strategy. I also wish to thank the technical team led by the Director of Crop Resources, Agribusiness and Market Development, Dr Johnson Irungu, for their hard work and endurance during the preparation of this document. I also acknowledge other members of the team that included; Dr. Maina Machangi (MOALF), Marion Gathumbi (MOALF), Patrick Onchieku (MOALF), Nancy Ng'ang'a (KALRO), Jackson Muchoki (GIZ), Simon Kibet (KEPHIS), Abed Kagundu (KEPHIS), Dinah Borus (CIP) and all those who reviewed and finalized the strategy for their invaluable input into this document.

It is my hope that this strategy will enable the various stakeholders to implement the outlined objectives to achieve the desired goals and that all stakeholders will play their respective roles, to facilitate smooth implementation of this Strategy.

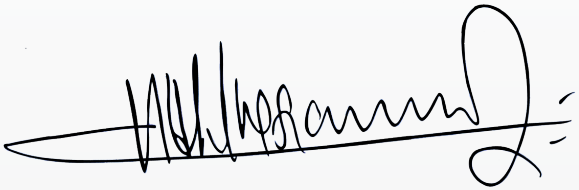

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Table of Contents

Abbreviations and acronyms

AAK	Agrochemical Association of Kenya
ADB	African Development Bank
ADC	Agricultural Development Corporation
AFFA	Agriculture, Fisheries and Food Authority
AGRA	Alliance for a Green Revolution in Africa
ASDS	Agriculture Sector Development Strategy
BPG	Business Producer Groups
CDF	Constituency Development fund
CIP	Centro Internacional de la Papa (International Potato Cente
EAC	East Africa community
ERS	Economic Recovery Strategy for Wealth and Employment Creation
GDP	Gross Domestic Product
GIZ	German International Cooperation
GMO	Genetically Modified Organisms
GOK	Government of Kenya
HCDA	Horticultural Crops Development Authority
ICIPE	International Centre for Insect Physiology and Ecology
ICT	Information and communications technology
IFAD	International Fund for Agriculture Development
IPM	Intergraded Pest Management
JICA	Japan International Cooperation Agency
KACE	Kenya Agricultural Commodity Exchange
KAPAP	Kenya Agricultural Productivity and Agribusiness Project
KARI	Kenya Agricultural Research Institute
KALRO	Kenya Agricultural and Livestock Research Organisation
KEBS	Kenya Bureau of Standards
KENAFF	Kenya National Farmers Federation
KENAPOFA	Kenya National Potatoes Farmers Association
KEPHIS	Kenya Plant Health Inspectorate Service
KFA	Kenya Farmers' Association
KIRDI	Kenya Industrial Research and Development Institute
KV2030	Kenya Vision 2030

LATIF	Local Authority Transfer Fund
M&E	Monitoring and Evaluation
MDG	Millennium Development Goals
MENR	Ministry of Environment and Natural Resources and Wildlife Management
MEWNR	Ministry of Environment, Water and Natural Resources
MoA	Ministry of Agriculture
MoALF	Ministry of Agriculture, Livestock and Fisheries
MOA-SP	Ministry of Agriculture Strategic Plan
MOF	Ministry of Finance
TNT	The National treasury
MOH	Ministry of Health
MORPW	Ministry of Roads, Public Works
MOTC	Ministry of Transport and Communication
MoTI	Ministry of Transport and Infrastructure
MoICT	Ministry of Information Communication and Technology
MoWI	Ministry of Water and Irrigation
MTP	Medium Term Plan
NCPB	National Cereals and Produce Board
NFNP	National Food and Nutrition Policy
NPCK	National Potato Council of Kenya
NPRC	National Potato Research Centre
NGO	Non Governmental Organization
NPT	National Performance Trials
PBG	Potato Business Groups
PBO	Potato Business Organizations
PCPB	Pest Control Products Board
PSDA	Private Sector Development in Agriculture
SHDP	Small-scale Horticulture Development Project
SHEP UP	Smallholder Horticulture Empowerment and Promotion Unit Project
SHoMAP	Smallholder Horticulture Marketing Programme
SRA	Strategy for Revitalizing Agriculture
SWOT	Strengths, Weaknesses, Opportunities, and Threats
TV	Television
USAID	United States Agency for International Development

Executive Summary

Potatoes in Kenya have a high potential for addressing food insecurity, unemployment and low farm incomes due to its high productivity per unit area and its versatility in utilization. It is also a good pro-poor crop due to its high yield potential compared to other crops, especially in Kenya where fragmentation of farms has led to small scale producers who comprise 80% of agricultural producers.

The high value potato processing subsector is also buoyant within Kenya but faces severe shortages of high quality and appropriate varieties which constrains its expansion and profitability. The production of high quality seed remains a key challenge in the development of the potato industry.

The potato industry development strategy proposes ways and means of improving the industry. It gives a background to the potato industry in Kenya highlighting the production as well as market demand and supply trends. The document describes in detail the constraints, challenges and opportunities in potato production.

The major stakeholders and their core functions in the potato industry are also analyzed in the strategy. The vision, mission and objectives of the potato strategy are discussed together with the seven strategic issues and objectives. They form the core subject of this strategy. It is from these objectives that performance indicators have been derived. The last part of the strategy contains the work plan, budget and resource mobilization proposals.

It is envisioned that each stakeholder will use this strategy for fund raising activities to support the development of their interest areas and thus contribute to the vibrant growth of the industry.

Introduction

The potato sub sector is a very important industry: the potato is the second most important food crop in Kenya after maize, about 2-3 million tonnes of potatoes worth about Ksh. 40-50 billion are produced each year and engaging millions of Kenyans. This compares well with annual maize production of 40 million bags worth Ksh. 120 billion. The Potato industry is characterized by a few large scale farmers and many small scale farmers scattered in sixteen counties. Potato is traded in unstructured marketing systems where value addition is minimal at producer level despite the huge potential.

The potato strategy has been developed with a view to provide a road map for the industry players and to create opportunities to develop the industry by addressing identified constraints. The strategy builds on Kenya constitution 2010, Kenya Vision 2030; ASDS, 2010-2020; the draft agriculture policy 2015, MOALF-SP, 2013-2017 ;(draft) as well as the UN Sustainable Development Goals (SDGs). This Strategy is intended to harmonize the activities of different players and fully utilize their synergies and complementarities. A well implemented strategy will result into not only a vibrant sub sector, but also very efficient utilization of the resources.

The National Potato Development Strategy focuses on seven strategic objectives:

Strengthen Institutional; Legal and Regulatory Frame work; Promote variety development and seed production; Enhance Research in the potato industry; To Increase potato production; Improve post harvest handling; value addition and marketing; Promote public -private partnerships in the potato industry development and Improve funding to the potato industry

1.0 History of potato production in Kenya

1.1 Potato was introduced in Kenya during the late 19th century in Kiambu, Murang'a and Nyeri districts by European settler farmers. Indigenous Kenyan farmers started to cultivate it in 1920. The main variety grown then was Kerr's Pink.

1.2 Research on potato varieties and seed potato production were started at the National Agricultural Laboratories, Kabete in 1903 and at Plant Breeding Station, Njoro in 1927.

1.3 The varieties released then were from Western Europe and were developed for Kenya by the late Dr. Black (Black, 1971); these included the fourteen commercially grown varieties released through the local National potato programme. However, they were not well adapted to the local agro-climatic conditions where they are now being grown mainly because they were the long-day *S. tuberosum subsp. tuberosum*.

1.4 Dehydration plants were established in Kerugoya in Kirinyaga District and Karatina in Nyeri District to meet the needs of the British troops in Northern Africa and Asia and in 1945 some 5,000 tonnes of potatoes were dehydrated every six months. Supply for dehydrated potatoes could not meet the demand due to low yields arising from viruses and bacterial wilt infection. To address the problem, new varieties Roslin Eburu (B53), Dutch Robyjn, Anett, Maritta, Feldeslohn, and Desiree, among others were imported from Europe. Nevertheless, bacterial wilt spread, halting production in Central Province. The main cultivation centres were shifted to Meru and Molo.

1.5 In 1963, the government undertook to promote potato production in the country by introducing new varieties from Germany. In 1967 a potato development programme was established to:

(i) screen local varieties for yield and disease resistance;

(ii) find solutions for potato production problems facing

farmers;

(iii) produce high quality seed of various varieties in sufficient quantities to satisfy the demand of farmers throughout the country;

1.6 To support the programme research facilities were established at Tigoni, (Limuru); with three sub-centres i.e. Marimba (Meru); Marindas (Molo) and Njabini (South Kinangop) to produce breeders which was given to ADC for further multiplication to pre-basic, basic, certified 1 and 2.

1.7 Between 1925 and 1930 potato exports were in the range of 1,700 to 4,000 tonnes per year and by 1960, exports reached 7,000 tonnes a year. In 1939, the total area under cultivation was 2,400 hectares with a production of 16,000 tonnes and an average yield of 6.6 tonnes per hectare. In 1970, the area under potato cultivation was about 5,100 hectares with a production of 408,000 tonnes. However, exports declined sharply, dropping to 600 tonnes by 1975.

1.8 Although there has been a long tradition of potato breeding in Kenya, screening of imported European varieties and advanced CIP germplasm have been the most important sources of new varieties. Work done on potato breeding in Kenya in the sixties and seventies concentrated on major gene resistance to late blight which is a prevalent leaf disease in the high altitude production areas of Kenya.

1.9 Between 1986 and 1997, adaptive breeding work was conducted at various stations in Kenya as a collaborative project between KARI (now KALRO (and CIP. The collaborative activity focused on developing potato varieties with durable resistance to late blight, some level of tolerance to bacterial wilt and acceptable agronomic and post-harvest qualities. It resulted in the release of varieties Tigoni 1(for chips) and, Kenya Furaha and Asante (for domestic consumption). Subsequent collaboration with CIP led to release of 7 more varieties by 2010 and in February 2015, a popular variety, *Shangi*, was released.

1.10 Local potato breeding programme at KALRO Tigoni has been

revived. Breeding emphasis is on development of varieties suitable for making chips and crisps. Emphasis is also on development of heat and drought tolerant varieties

1.11 Despite these interventions, shortage of seed persisted because; many farmers did not multiply the seed further but sold the harvested crop as ware potatoes. To address the problem, the government established a commercially oriented Seed Potato Production Programme in 1979 under the Agricultural Development Corporation (ADC) and operated naturally ventilated seed stores. The sales activity was undertaken jointly with the Kenya Farmers' Association (KFA) which distributed the seed while the Ministry of Agriculture promoted use of certified seed potato through its extension services. As a result of the programme, in 1982, there was increased production resulting in surpluses.

1.12 The Seed and Plant varieties Act Cap 326) was enacted in 1972 and revised in 1979. The Act stipulated procedures for seed registration, field inspection, lot inspection, sampling for post control plots, labelling and sealing. This was done by Kenya Inspection Service Kenya Inspection Service (KISS) formed in 1972 which later converted to National Seed Quality Control Service in 1979 and is currently Kenya Plant Health Inspectorate Service; (KEPHIS) formed in 1997 and became operational in 1998 as the certifying organization. In 1984 a severe drought led to serious seed potato shortages forcing the ADC seed potato project to import seed of Arka, Cardinal, Pimpernel and Romano varieties to meet the short fall. To solve the storage problem a cold store was constructed at Molo in 1985 with a capacity of 2,250 tonnes.

1.13 Certified seed production and distribution through KFA outlets went on well until early 1990s when ADC farms were subdivided. As a result ADC started contracting out-growers.

1.14 The 3 ADC farms (Nyota, Sirikwa and Tall Trees) in Molo were all hived off and allocated to private individuals leaving the project with only 150 acres from about 20,000 acres although

the MoALF recently bought an additional 815 acres in 2007. Similarly, KARI-Tigoni also lost 190 acres of the original 250 acres through excision and transfer to other users. KARI-Tigoni resorted to selling breeders seeds directly to the informal seed growers in addition to the formal sector. Those in the formal seed production sector register with KEPHIS for seed certification.

1.15 The registered seed companies dealing with other crops are not keen on seed potato multiplication due to the perishable nature, bulkiness of the crop, and lack of clear policy on the use of certified seed potato leading to the prevailing shortage of certified seeds. To increase the availability of certified seed, new technologies for rapid seed multiplication such as aeroponics and hydroponics were introduced by CIP in 2009 and 2010 to KALRO, ADC, GTIL, Kisima and Suera in addition to traditional technologies such as tissue culture and seed plot technique. These are supported by modern technologies like mechanization, new seed varieties, irrigation and improved storage (Diffuse Light stores (DLS) and cold storage). In addition, CIP provides advanced breeding materials to local, regional and international seed producers.

1.16 In 2011, Kenya and The Netherlands conducted a PRA which culminated in to signing of a bilateral agreement to allow introduction of Dutch seed potato varieties and capacity building of KEPHIS facilities and infrastructure by early 2015 there were 38 commercial released varieties and over 60 informal ones with farmers. In the same period there were seven registered seed merchants who were growing seed potatoes; KALRO Seed Unit, ADC, Midlands, Kisima Farm, Suera Ltd, Africala Ltd. and AGRICO East Africa. There are more than forty trained seed growers spread across potato growing regions and plans are in place to train adequate numbers of seed potato multipliers to cater for the high demand of quality seed potato by farmers in potato growing sub-counties

1.17 Due to increase of stakeholders in the potato industry, a number of institutions have been formed. These include NPCK as a platform of bringing together public and private stakeholders in the potato industry while AFFA food crops directorate is facilitating regulation, development and promotion of food crops, potato included. The country has invested in new laboratories for soil and produce testing, pest and disease testing and biotechnology.

2.0 Potato production and marketing trends

2.1 Production

Potato is traditionally grown in the high altitude areas of between 1,500 and 3,000 metres above sea level, found on the slopes of Mount Kenya; the Aberdare range; the Mau Escarpment; Mount Elgon, Kericho and Kisii highlands, Cherangani hills and isolated patches in the Taita hills. Due to increased demand, potato production is being expanded to non-traditional potato growing areas such Kirinyaga, Naivasha and Tana River. This is possible due to availability of new heat tolerant varieties and irrigation.

2.2 Variety Testing and Seed Certification

Sustainable crop production depends on superior varieties and a robust seed certification system. These assure both breeder and seed merchants that their products are safeguarded and of high quality respectively. This involves variety testing, release, seed field inspections, processing, laboratory testing, labeling and sealing, post control testing and post certification evaluations. Equally the farmers benefit through high yields of good quality through use of recommended crop technologies

Climate variability and associated changes has given rise to emergence of new crop pests and diseases that require consideration in the seed regulation to minimize their effects on quality of certified seed.

Harmonization of seed laws and regulations in EAC and COMESA requires aligning of certification standards to allow for crop varieties and seeds to be traded regionally. To ensure good quality seed and facilitate seed movement regionally, seed crops go through field inspection for diseases and pests. This includes mandatory laboratory testing for quarantine and seed borne diseases. As such, implementing institutions require resource support to meet increasing Phytosanitary challenges.

Variety evaluation is an expensive undertaking which adversely

limits the public plant varieties to be tested and released. Financial support is needed for public breeders, seed testing of new varieties and confirmation of variety characterization.

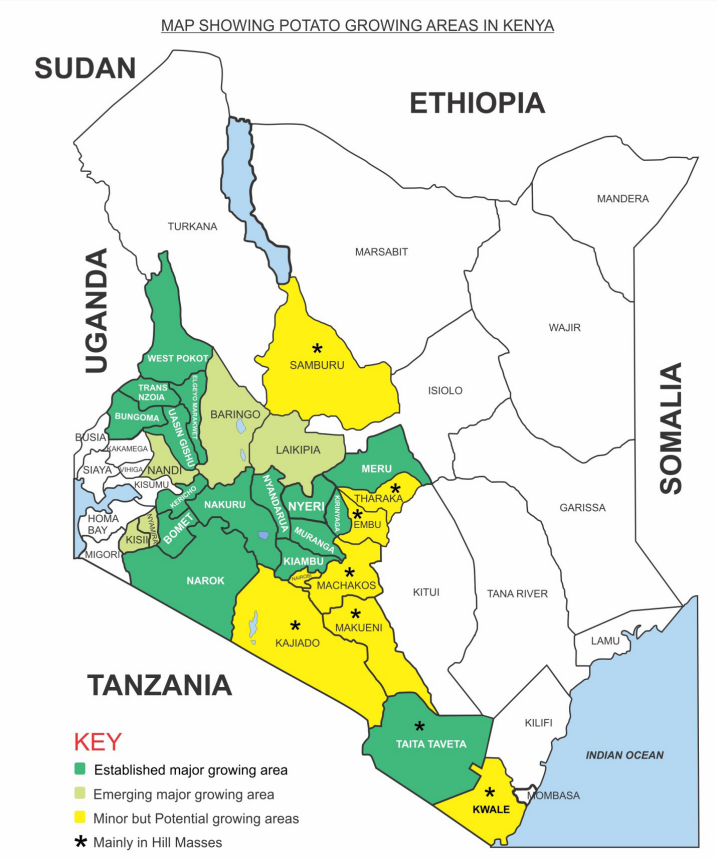

Figure 1: Map of Kenya Showing Potato Producing Counties

There are approximately 800,000 growers in the country by 2015. In the year 2014, about 161,035 hectares of potato were grown and over 3 million metric tonnes produced in two growing seasons. Annual production of the crop was worth about KSh.50 billion at farm gate prices. The industry indirectly employs about 3.3 million people as producers, market agents, transporters, processors, vendors, retailers and exporters'.

However production usually fluctuates between 2 and 3 million

tonnes annually while value has progressively increased; area has been increasing steadily from about 100,000 ha in 2008 to 161,035 ha in 2014 (Figure 2). Since independence, the government has played an important role in promoting potatoes as a food crop in Kenya through programmes and projects. Annual yields have not increased as expected and there have been annual fluctuations with production, decreasing to a minimum of 2.1 million metric tonnes in 2008 mainly due to political instability that displaced many producers. Production has been mainly constrained by insufficient clean seed, while diseases and pests have had a notable negative impact on the productivity of potatoes.

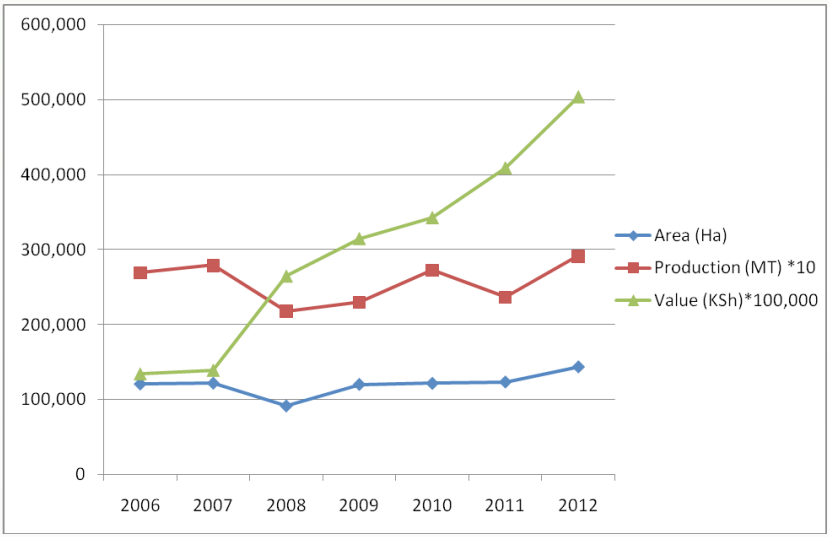

Figure 2: Potato Production trends 2006-2012 (Source: MOALF/HCDA validated Reports (2009 – 2013)

2.3 Potato Marketing

The potato marketing chain involves several actors namely: growers, brokers, transporters, wholesalers, processors, and retailers. Brokers in urban markets control most of the marketing and production areas where they manipulate prices to the disadvantage of the growers. Potato supply is dictated by the rainfall pattern and is a direct determinant of prices. Potato growers lack the ability to influence prices of their produce due to high perishability,

inadequate market information, lack of adequate storage facilities and collective marketing.

Producer prices vary from KSh.500-1000 per extended bag of between 130 kg to 250kg during glut seasons immediately after harvest (February, July and August) and Ksh. 2000 to 6000 during periods of scarcity prior to and after planting (December, April and May). The extended bag is a means of lowering the price for the farmer and it also reduces the market cess charged by the county governments who charge per bag irrespective of the weight. The unit for selling ware potatoes is not uniform although the legal requirement is 50 kg bag which has been selling between Ksh 600 and 1200 farm gate since it was introduced in November 2014. Marketing costs include, county government cess per bag; rent for market space per day; cost of empty bags; sewing ropes per bag; and labour wages for loaders and off-loaders per bag as well as cost of transportation. The costs can have an influence on the final market price. Loading and off loading of the extended bag is cumbersome and result to the damage of potatoes. The extended bag is also a health hazard to the loaders, is against local regulations as well as the International Labour Organization (ILO) requirements.

The Ministry of Agriculture, Livestock and Fisheries disseminates market information particularly prices in major urban markets through print and electronic media. Information on consumption is scarce but available information indicates per capita consumption is 30 – 40kg but has gradually increased to 100kg in the urban areas (USAid KAVES).

2.4 Potato Processing and Value Addition

Farmers, generally, do not add value to the produce at the farm level (cleaning, sorting, grading, c and packaging) which could increase the farm gate prices considerably.. In urban settings some form of processing in restaurants and factories is done. These include peeling, slicing, chips making, crisps, powder and starch making among others. Processing adds value to the produce, increases shelf life, produces products acceptable by the market and reduces wastage. The changing lifestyles will certainly result into more processing of the potato both in quantity and the range

of products. Processors usually run out of supplies there has been only one processing variety locally. By early 2015, 13 processing varieties were released locally and only 6 were with the farmers and still being tested by the processors to determine which ones are suitable for their requirements

Losses for the processors occur as a result of poor quality potatoes due to damaged tubers during transportation, lack of grading, mixing of varieties and poor packaging and storage at different levels.

Figure 3: 50 kg bags and extended (> 150 kgs) potato bags

3.0 Constraints, challenges and opportunities

3.1 SWOT analysis

There are many factors that affect potato production and marketing. Table 1 below shows the SWOT analysis for the potato value chain.

Table 1. SWOT Analysis of Potato Value Chain

Strengths	Weaknesses
• Potato is the second most important staple food in Kenya and is a preferred food • Potato is an important cash crop. • There is government support (political good will) • There is a registered potato growers association-KENAPOFA • Favourable climatic conditions in traditional growing areas • Registered stakeholder organization under public private partnership - NPCK • Available legal framework for seed certification • Increase in number of potato processing companies • Availability of specialized research institutions • 4 registered seed multipliers with cold storage facilities(KALRO, ADC, Suera, and Kisima and 3 without (Africala, Midlands and AGRICO East Africa)	• Poorly developed seed potato system. • Inadequate supply of quality seed of preferred varieties • High post harvest losses Weak farmer organizations • Mixing of varieties leading to increased rejection by processors • Low adoption of standardized package and weight for ware potatoes • Minimal value addition (grading sorting and cleaning of tubers) • Inadequate sub-sector financing • High cost of farm inputs • Lack of appropriate equipment/machinery for small scale farmers • Inadequate access and adoption of production information and technology • Inadequate affordable credit or suitable financing system

Strengths	Weaknesses
• Potato can be grown for 3 seasons in a year and has high productivity per unit area • Potato has high water use efficiency so yields even under rain scarcity • Potato has high nutritive value • Reputable regulatory institutions (KEPHIS, KEBS, AFFA etc) • Existing expertise in potato value chain • Existing operational/functional laboratories/procedures • New technologies in production • Active breeding programme and variety introduction mechanisms	• Lack of incentives to store ware potatoes/ Low adoption of improved ware storage structures • Poor infrastructure- access roads/high costs of transportation • Inadequate dissemination of market information • Multiple taxation • Poor markets infrastructure (collective marketing, business centres etc) and services • Inadequate product development associated with entrepreneurial skills • Investment incentives lacking, high cost of electricity, water, communication and capital • Inadequate research on product development
Opportunities	**Threats**
• Growing domestic, regional and global market for seed ,ware and processed products • Existing opportunities to expand production to low altitude and marginal areas • Changing eating habits in favor of potato and potato products (salads, bhajia, chips, crisps, and Chevda) • Existing potato processing opportunities for diverse products in starch, alcohol, flour, soaps, baby feeds, animal feed and detergents • High potential to mitigate food insecurity and improve nutrition	• Effects of climate change • Emerging pests and diseases • Inadequate land for rotation due to fragmentation and change of use • Depleted soil fertility with inappropriate replenishment • High incidences of diseases and pests • Reduced income of producers due to exploitation by middlemen, brokers and cartels • Poor infrastructure • Encroachment of research and seed multiplication land

Opportunities	Threats
• Prospects to create employment • Liberalized market for seed and ware potatoes • Opportunity to develop an alternative marketing channel through use of automated marketing information systems (AMIS) • Potential origin branding of the potato • Forward integration by farmers • Membership to international convention (UPOV, ILO, OECD seed schemes IPPC, WTO, CODEX)	• Porous international borders allowing illegal entry of seed and ware potatoes • Political instability

4.0 Major stakeholders and their roles

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
1.	Ministry of Agriculture, Livestock and Fisheries (MOALF)	Coordinate the formulation and implementation of agricultural policies	• Policy development and implementation • Official release of new varieties • Training of staff and farmers • Technology transfer
2.	County Governments	Provide quality extension services and participate in the formulation and implementation of agricultural policies	• Provision of extension services • Policy implementation • Training of staff and farmers on Technology transfer
3.	KALRO- Tigoni	Potato research and development	• Development and dissemination of suitable technologies • Provision of basic seed potato • Research on pest and disease management • Maintenance and supply of breeder's seed • Disseminate research findings to the MoALF and other stakeholders • Capacity building on seed production and marketing Variety testing/breeding to ensure 1 to 2 varieties available for release by MoALF every 2 years

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
4.	Kenya Plant Health Inspectorate Services (KEPHIS)	Provide regulatory and advisory services	• Variety testing (NPT & DUS), • Granting of plant breeder's rights • Seed certification, • Phytosanitary and quarantine, • soil and irrigation water analysis • Inspection of potatoes for export and import. Technology transfer and capacity building on seed production
5.	Agricultural Development Corporation (ADC)	Production of high quality seeds	• Production of own basic seed • Multiplication of basic seeds to produce certified seed and transfer them to the farmers • Technology transfer and capacity building on seed production Improvement of seed distribution channeled through satellite centres
6.	CIP- International Potato Centre	• Global custodian of potato • Germplasm conservation and exchange Develop advance potato clones	• Development and selection of germplasm • Capacity building on ware and seed potato production • Development and dissemination of technologies Participate in pest and disease diagnostics for potato
7.	Kenya Bureau of Standard (KEBS)	Develop and maintain standards and practices of processed products	• Develop and register the standards involving production, processing, marketing and to ensure compliance to the standards • Capacity building on standards The focal point for CODEX on food safety

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
8.	Universities and Colleges of Agriculture	Manpower development, research and dissemination of technologies	Provide courses that enhance capacity in potato industry Produce and product research development Capacity building , do basic research, introduction of new germplasm and breeding
9.	AFFA Food Directorate	Regulate develop and promote food crop industry	Develop and promote marketing chains at national, regional and international levels Registration, licensing and regulation of the industry players Liaise with County Government to enforce compliance Participate in policy development Advice Governments on food security issues Advice government on issues of pest and disease for quarantine purpose Capacity building Collaborate with county Governments to Identify research agenda and recommend
10.	Kenya Industrial Research and Development Institute (KIRDI)	Research and design on processing technologies; business incubation	Research, develop and fabricate machines, transfer potato products processing technologies Capacity building,

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
11.	Ministry of Environment, Water and Natural Resources (MoEWNR)	Formulation ,review and implementation of policy on the water sector, and reclamation	Avail quality water for domestic and industrial use Avail water for irrigation use in production and processing in the industry Preservation and conservation of riparian systems and water towers Signatories to international treaties
12.	Ministry of Health (MOH)	Ensure hygiene in market and public places	Protect Kenyan potato consumers from health risks of contaminated produce and products. Custodians of food safety regulations capacity building on good nutrition and hygiene
13.	National Environment management Authority (NEMA)	Develop and implement environmental policy	Conduct Environmental Impact Assessment (EIA) and catchment area conservation Approve and enforce regulations on EIA for big projects (Irrigation scheme)
14.	Ministry of Devolution and Planning	Provide and maintain marketing infrastructure Coordinate food relief services	Support financing special groups Support food security initiatives
15.	Ministry of Transport and Infrastructure	Development of road infrastructure Support infrastructure for import and export	Support construction, maintenance and rehabilitation of roads

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
16.	Ministry of Information Communication and Technology	Develop and implement policies on communication	Provide telecommunication services Facilitate availability of suitable ICT platforms in the industry
17.	Financial Institution (e.g. AFC, Equity bank, K-Rep bank, Cooperative bank, Family Finance Bank) and insurance companies	Provide financial and insurance services	• Avail banking and credit facilities to all the actors • Avail insurance facilities to all the actors • Capacity building on Financial management
18.	National Cereals and Produce Board (NCPB)	Provision of marketing infrastructure for agricultural commodities and inputs	• Selling farm inputs mainly fertilizers • Distribution of seed potato
19.	Pest Control	Regulate the importation, manufacture, distribution and use of agrochemicals	• Advise and provide information on approved and prohibited agrochemicals as dictated by the environmental, health and market concerns • Register agrochemicals and stockists • Carry out efficacy test for new products • Monitoring of label use

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
20.	Kenya National Potato Farmers Association (KENAPOFA)	Promote, advocate and lobby for the potato farmer	Articulate the issues affecting potato farmers Collective marketing and market intelligence Dissemination of market information to members Collaboration with the regulators for compliance Organizing members to form marketing groups
21.	Kenya National Farmers Federation) (KENAFF)	Promote, advocate and lobby for the farmer and related sector issues	• Articulate the issues affecting farmers groups • Mobilize potato farmers into producer business groups • Strengthen potato farmer organizations • Dissemination of information • Capacity building of the farmer organizations • Representation of the farmer at all levels
22.	NGOs (SNV, IFDC, Kendat, KAVES…)	Contribute towards the development of the industry in collaboration with other stakeholders in provision of relevant information	• Provide support, training and collaborate with industry stakeholders

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
23.	National Potato Council of Kenya (NPCK)	Creating linkage platforms for potato industry development (among the actors)	• Link farmers to financial institutions, markets and other stakeholders • Collect, Collate and disseminate information on potatoes • Organize trade fairs for all the actors • Inform policy and regulatory making process • Strengthening the actors associations • Facilitate development of code of conduct and self-regulation • Represent the interests of all the actors in international forums
24.	International Centre for Insect Physiology and Ecology (ICIPE)	Research in insect and arthropod pests Regional referral center on identification of insects	• Develop surveillance protocols for insect pests • Capacity building • Mobilize funds for insect pests studies • Develop and transfer IPM technology to control potato pests • Pest management technologies • Biological control
25.	Development partners (GIZ, The Netherlands, USAID, Agra etc)	Support government in potato industry development Facilitate donor –government linkages	• Provide funds for the development of the potato industry • Support transfer of technology • Capacity building • Offer scholarships for specialized training • Provision of equipment • Development of germplasm • Fund research • Organize exchange programs • Linkage

S/ No.	Name of stakeholder	Core function within potato production	Role in potato industry
26.	Seed Traders Association of Kenya (STAK)	linkages of seed traders	• Production and marketing of certified seeds • Lobby for favourable policy environment • Market intelligence for their members • Represent members in international for a • Self regulation through their cod e o f conduct • Organize trade fairs • Collect collate and disseminate information • Lobby for regional harmonization of rules for trade
27.	Print and electronic media	Provision of information	Disseminate information Educate the population
28.	Potato Processors (Sereni fries, Kentucky fried Chicken, Njoro Canners Midlands, Norda, Propack, Deepa….)	Product development Value addition	• Potato processing and marketing • Provide a market for farmers produce • Diversify the market • Capacity building • Increase the shelf life of potatoes • Fortification and palatability

5.0 Justification of the Strategy

Among the non-cereal crops, potato is the most important food crop, ranking third after wheat and rice, in the world. This is because of its ability to grow in the high altitude areas where maize does not do well and can also grow well in areas suitable for maize (medium altitude and lowlands); its high nutritive value (in terms of calories, vitamins, proteins, potassium and fiber); its high production per unit area and time (can have three crops per year); its value as a cash crop; it is labour-intensive and generates employment in production, marketing and processing sectors; and has potential as an industrial crop in the manufacture of starch, pharmaceutical carrier material, soap, alcohol, biogas generation and animal feeds.

Potato industry's contribution to the national economy is significant with production of 2-3 million tonnes annually worth about KSh. 50 billion at farm gate prices. The industry employs about 3.3 million people along the value chain. On average, yields are about 20 tonnes per hectare against a potential of 40 tonnes per hectare (MoA, Annual Report 2012).

In spite of the importance of this industry there has been no roadmap to guide the subsector initiatives and harmonization of interventions. Thus efforts to improve the industry have been uncoordinated and ineffective leading to inefficient use of resources and duplication of efforts. There is need, therefore, to develop a comprehensive strategy to guide the potato industry into prosperity

6.0 Vision, mission and objectives of the Potato Strategy

The Goal of potato industry strategy is:

To transform the potato industry into a commercially oriented enterprise that ensures sustainable food and nutrition security and surplus for export and increasing incomes

Vision:

A vibrant, innovative and commercially oriented potato industry.

Mission:

To facilitate the transformation of potato industry in Kenya from subsistence production to viable commercial enterprises.

Objectives

There are 7 objectives as follows

i. Strengthen Institutional, Legal and Regulatory Frame work,
ii. Promote variety development and seed production,
iii. Enhance Research in the potato industry,
iv. To Increase potato production,
v. Improve post harvest handling, value addition and marketing,
vi. Promote public -private partnerships in the potato industry development and
vii. Improve funding to the potato industry

7.0 Strategic issues and objectives

The strategic intervention aims to achieve sustainable growth in the potato industry in order to improve the livelihoods of the players in an equitable way. Addressing the identified constraints and challenges on production, pests and diseases, suitable potato varieties, infrastructure, seed marketing adequately, the livelihoods of potato stakeholders will significantly improve. The Ministry of Agriculture, Livestock and Fisheries will provide an enabling environment to stimulate the process for sustainable potato industry growth and development.

The following specific interventions are going to be taken:

Strategic Issue 1: Weak Institutional, Legal and Regulatory Frame work

The existing public institutions lack adequate human, financial and physical capacity to cope with the increased services required by the industry. Farmer institutions are weak and ineffective. Seed producers and multipliers use inefficient business models to produce seed. Traders and processors operate independently. The industry's linkage platform (NPCK) is still weak. Consolidation of agricultural legislations was finalized in 2013/2014 culminating in the formation of AFFA and KALRO (AFFA Act, 2013, KALRO Act, 2013 and Crops Act, 2013). The development of the regulations is in progress to include relevant clauses that were in the legal notices no. 44 of 2005 which was anchored in Crop Production and Livestock Act

(Cap. 321) and no. 113 of 2008 anchored in the Local Government Act (Cap 265) that were repealed. The Root and Tubers policy is still in draft form. The institutions responsible for enforcement of these regulations are being reorganized. Seed regulatory service providers have inadequate human and physical capacity to be in tandem with increased services required by the industry. There is no code of practice specific to the potato industry.

Strategic Objective 1: Strengthen Institutional, Legal and Regulatory Framework

i. Review the laws supporting the institutions to be in line with the current situation

ii. Expand human, physical and financial capacity of the public institutions.

iii. Establish, recognize, strengthen, and support industry associations at all levels.

iv. Adopt new technologies and business models for seed production

v. Strengthen the industry linkage platform to serve the industry

vi. The Seed and Plant Varieties Act has been revised to allow for private seed inspectors under KEPHIS license.

vii. Finalize pending policies and develop a code of practice for the industry

viii. Strengthening linkages between regulatory institutions responsible for the industry and industry players

ix. Create an enabling environment for more breeders to undertake breeding

x. Government avails more land for potato seed multiplication including opening irrigated land

xi. Government to support ADC on new technologies like aeroponics and hydroponics

xii. Additional cold storage facilities for potato seed at strategic locations

Strategic issue 2- Inadequate potato variety development and seed production

There is inadequate supply of good quality seed of preferred varieties due to the fact that there has been no active breeding in Kenya and few breeders were interested in potato breeding. Further, the Seeds and Plant Varieties Act of 1972 restricted importation of potato tubers.

The Act was revised in December, 2013 to allow for importation.

Structural changes that took place in the early 1990s e.g. land alienation and allocation to private individuals resulting in change of ownership of big portions of land for both KALRO Tigoni and ADC resulted in limited availability of land for seed multiplication. The breakdown of cold stores in ADC Molo and limited capacity in areas such as tissue culture laboratories and high staff turnover worsened the situation. Limited financial support of the two institutions to execute their mandates has also contributed to their poor performance.

Strategic objectives 2: Promote variety development and seed production

i. Reviving and support of breeding programs in the country
ii. Encourage private investors to fund breeding programmes.
iii. Promote officially released potato varieties that are high yielding, resistant to diseases and suitable for various utilization demands
iv. Strengthen seed production, multiplication and distribution
v. Develop and operationalize an efficient seed distribution system to ensure all farmers have access to quality seed in sufficient quantities at the right time
vi. Develop/introduce heat and drought tolerant varieties for production in the hot lowland under rain fed and irrigated conditions
vii. Facilitate introductions of more varieties and seed from other breeding programs
viii. Seed potato monitoring

Strategic issue 3: Inadequate Research in the potato industry

In recent times there has been a concerted effort to increase new potato varieties with significant success. However, appropriate agronomic packages have not been developed to unlock their genetic

potential. Availability of appropriate and affordable machinery and irrigation for small scale producers is lacking. Correct market information is inadequate among the actors. Processing equipment is still rudimental for small scale processors and importation of sophisticated equipment is still prohibitive. There is a narrow potato product range in use and limited research on control and management of existing and emerging pests and diseases of potato.

Strategic Objective 3: Enhance Research in the potato industry

i. Research in appropriate agronomic package(soil fertility, appropriate seed rate, fertilizer types and rates, agro chemicals usage and postharvest handling), for potato production

ii. Search and identify , fabricate or acquire appropriate and affordable machinery

iii. Easing/hastening the process of importation of suitable machinery

iv. Identification of best methods for collection, collating, storing and dissemination of appropriate information

v. Diversification of potato products range.

vi. Enhance research on control and management of existing and emerging pests and diseases of potato

Strategic Issues 4: Low potato production

The low production of the potatoes in Kenya is due to a number of factors. There are inadequate f suitable varieties for table and especially for processing. The problem of high input costs coupled with inadequate certified seeds has aggravated the situation. The potato farmers continue to use rain-fed agriculture in the traditional potato growing areas which is largely dependent on the rainy seasons.

Inadequate modern appropriate technologies in production, wide spread pests and diseases contribute to low production while inadequate and inappropriate storage facilities make the farmers to sell their produce immediately after harvest to avoid high post

harvest loses.

Most potato farmers still practice subsistence farming and have not embraced commercial farming. Lack of agribusiness management skills, inaccessible and affordable credit facilities, poor marketing systems, poor rural access roads and inadequate land all hinder commercialization of potato production.

Strategic Objective 4: Increased potato production

i. Capacity building on appropriate agronomic practices

ii. Promote growing of potatoes in non-traditional potato growing areas

iii. Promote appropriate technologies

iv. Provide subsidy for potato production

v. Control wide spread of pests and diseases

vi. Monitoring and evaluation

Strategic Issue 5: Poor post harvest handling, value addition and marketing

Most small scale potato farmers do not take farming as a commercial venture. The farmers sell their produce not only when they have surplus but also when there is need that has to be met even with no surplus production. Overall there is limited access to support services (financial services, extension services and structured marketing systems).

The youth are not involved fully in potato production while producers have inadequate knowledge to practice farming as a business. Owing to the seasonality of potato production, small scale producers cannot consistently meet the market demand and when faced with surplus produce do not have appropriate storage facilities to prolong the produce (seed or ware potato) shelf life. This causes price fluctuation for the produce. Moreover, the few buyers take advantage of periods of glut to exploit the farmers by offering very low prices compared to when there are shortages and prices are high. On-farm value addition practices have not been adopted.

Agricultural extension services have remained inadequate due to the growing number of farmers. Poor linkages exist between producers and processors and other market outlets that have culminated in unstructured markets despite the potential in the potato industry. Business incubation initiatives in potato industry are lacking. There is limited market and product research development.

The research outputs have not been market oriented hence few innovations, in post-harvest handling, processing and marketing of produce and products. Dissemination of information on value addition technologies and market related activities are minimal and ineffective.. There are high losses and waste along the value chain often reported between 20-40%.

Strategic objective 5: Improve post harvest handling, value addition and marketing

- Training of the youth and industry players in agribusiness and entrepreneurship
- The County governments, development partners and other private service providers to improve access to extension services and other entrepreneurial skills in agriculture
- Processors and other industry players to encourage contract farming for reliable supply of quality raw materials
- The government at both levels in collaboration with stakeholders put in place structured marketing systems
- Promote formation of ware potato producer business organizations;
- The governments at both levels and other relevant stakeholders to develop market and product research
- Establish and or increase business incubation centers;
- The government and other stakeholders to empower farmers to be price negotiators instead of price takers through training,
- Document and disseminate technologies for value addition
- providing market information and linkage to the markets;

- Establish ICT platform that is accessible to serve value chain actors
- Establish organized marketing groups and the marketing infrastructure
- Support establishment of quality assurance and traceability.
- Document adopt and avail appropriate technologies for value addition
- Finalize guidelines for storage facilities

Strategic issue 6: Uncoordinated and unharmonized activities/initiatives in the industry

Stakeholders in the potato industry have been carrying out projects and other initiatives in isolation which resulted in duplication. There is little information sharing among the actors leading to inefficiencies. There is also limited awareness on the existence NPCK as platform for access and sharing of information. The industry has inadequate capacity and mechanism for collecting and disseminating information. The industry does not have a code of practice.

Over the years there has been no regulation of the food crops subsector. Recently the government consolidated the regulatory functions in agricultural sector to set up the Agriculture, Fisheries and Food Authority. The Food directorate was established to develop, promote and regulate the food crops in the country.

Strategic objective 6: Promote public -private partnerships in the potato industry development

- Harmonize the activities of the different actors in the potato industry
- Organize forums for information processing and sharing e.g. trade fairs
- Facilitate linkages between the farmers, research, extension and the market.

- Promote and support different forums along the value chain
- Establish implementation and monitoring committees at the national and county level
- Establish and strengthen public private partnerships (PPP) for agribusiness development;

Strategic issue 7: Low funding to the potato industry

Despite its prominence and importance as a food crop and income generating enterprise potato has not attracted adequate funding from the exchequer or from the private sector. Financial institutions do not consider potato as a high return investment and so are reluctant to avail credit to potato farmers.

Strategic objective 7: Improve funding to the potato industry

i. Establishing mechanisms to access funds in the commodity fund

ii. Improving GOK and development agencies funding to potato industry

iii. Government to implement the 10% of the GDP funding to the agriculture sector

8.0 Implementation Matrix 2016 -2020

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
STRATEGIC OBJECTIVE 1: **Strengthen Institutional, Legal and Regulatory Frame work**											
1.1 Review the laws supporting the institutions to be in line with the current situation	1.1.1 Review the Plant protection act, Cap 324.	July 2016 to June 2018	Reviewed Act to be in tandem with the liberalised market, recognize current naming of pests and diseases and institutions	MOALF / KEPHIS, Stakeholders	Reviewed law	2	1	1	0	0	
	1.1.2. Reinstate export produce Act Cap 319 and review it.	July 2016 - June 2019	Cap reinstated in the law and reviewed	MOALF / KEPHIS, AFFA, Stakeholders	Reinstated and reviewed Law	2	0.5	0.5	1	0	
	1.1.3. Make regulations to bring on board what was contained in legal notice no 44 of 2005	July 2016 - June 2018	Section on potato production and marketing regulations standards anchored in the relevant Act	MOALF / NPCK, KEPHIS, AFFA, KEBS, Stakeholders	Regulations and standards gazetted	1	0.5	0.5	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
	1.1.4 Amend Fertilizers and Animal foodstuffs Act Cap 345.	July 2016 - June 2020	Fertilizer and animal foodstuffs Act amended and Fertilizer Act created	MOALF / AFFA, KEPHIS, KEBS, Stakeholders	Fertilizer Act enacted	4	1	1	1	1	
	1.1.5. Review Seed and plant varieties Act Cap 326 to recognize quality declared seed.	July 2016 - June 2018	Certification of quality declared seed in Counties ,	MOALF/ AFFA, KEPHIS, County Government, NPCK, Stakeholders	Quality declared seed	1	0.5	0.5	0	0	
		July 2016 - June 2018	Authorise private seed inspectors, regulations and protocols developed	MoALF, KEPHIS, Stakeholders	Private seed inspectors, Protocols	1	0.5	0.5	0	0	
	1.1.6. Make regulations to bring to operationalize the KALRO Act.	July 2016 - June 2018	New regulations to guide potato variety development	MOALF / KALRO	Standards for varietal development gazetted.	2	1	1	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
1.2 Expand human, physical and financial capacity of the public institutions	1.2.1 Lift the ban on hiring of public officers and increase the staff establishment in public institutions (KEPHIS, KALRO and ADC).	July 2016 - June 2020	An expanded staff establishment. Increase inspectors in KEPHIS by 200	MoALF / KEPHIS / ADC /KALRO	Seed inspectors increased,	1,000	250	250	250	250	
		July 2016 - June 2020	ADC to recruit 10 production field staff. KALRO to recruit 10 technical officers and 3 scientists.	MOALF / ADC, KALRO	The number of new officers recruited.	38.4	9.6	9.6	9.6	9.6	
	1.2.2. Improve and increase physical infrastructure in KALRO, KEPHIS and ADC.	December 2017	KALRO ; irrigation in Marindas and Njabini	MOALF/ KALRO	Infrastructure in place	45	0	45	0	0	
		December 2018	2 tractors	MOALF /KALRO	No of tractors ,harvesters ,potato Planters, potato graders	11	11	0	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
		December 2019	large boom sprayer	MOALF /KALRO	no of boom sprayer	2	0	0	2	0	
		December 2019	1 - 10 ton lorry;	MOALF /KALRO	No of lorries	8	0	0	0	8	
		December 2017	KEPHIS - 2 PCRs, 1 automated sample preparation unit	MOALF / KEPHIS	No of PCR's	4	4	0	0	0	
			1 -P-up double cab	MOALF / KEPHIS	No of pick ups	4	0	4	0	0	
		From 2017 to 2019	various reagents	MOALF / KEPHIS	Reagent available	4	1	1	1	1	.
		Dec ember 2017	One 10 ton lorry,	MOALF/ ADC	No of lorries	8	0	8	0	0	
		December 2018	1 large boom sprayer	MOALF/ ADC	No of boom sprayer	2	0	2	0	0	
		2019 to 2020	2 trailers	MOALF/ ADC	No of trailers	5	0	0	2.5	2.5	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
1.3 Establish, recognize, strengthen ,and support industry associations at all levels	1.3.1. Support formation and strengthen grassroots (county and national) agribusiness producer groups/ associations.	July 2016 - June 2020	At least 1 grassroots producer group formed in each of 14 counties. One national level producers association formed/ strengthened.	MOALF/ County governments, Ministry of industrialization (Cooperative) NPCK, KENAFF,	The number of producer groups formed.	7	2	2	2	1	
	1.3.2. Facilitate the formation of potato marketers and processors associations.	July 2016 - June 2018	At least 1 markers association formed at each of the 14 counties and 1 at the national level. One processors association formed at the national level.	MOALF/ County governments, Ministry of industrialization (Cooperative) NPCK, KENAFF,	The number of producer groups formed.	4	2	2	0	0	
	1.3.3. Establish a center of excellence as a one stop shop for information and technology transfer.	July 2016 - June 2020	At least one center of excellence established.	MOALF / KALRO, KEPHIS, NPCK, KENAFF	One center of excellence established.	2,400	600	600	600	600	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
1.3 Adopt business models for seed production	1.3.4. Develop and adopt business models.	July 2016 - June 2018	At least one business model adopted.	MOALF / KALRO, ADC, KEPHIS, NPCK, KENAFF and stakeholders	Business model adopted.	1	0.5	0.5	0	0	
1.4 Strengthen the industry linkage platform to serve the industry	1.4.1. Create and build the capacity of potato industry platform.	July 2016 - June 2018	One platform established	MOALF, NPCK / All stakeholders	Potato industry platform registered.	2	1	1	0	0	
1.5 The Seed and Plant Varieties Act has been revised to allow for private seed inspectors under KEPHIS license	1.5.1. Develop protocols and training materials.	July 2016 - Dec 2016	One protocol and a training manual developed.	MOAL, KEPHIS / KENAFF, NPCK, STAK, stakeholders	Protocol and training manual in place.	0.5	0.5	0	0	0	
	1.5.2. Identify potential private seed inspectors and train them.	Jan 2017 - Dec 2018	25 private seed inspectors identified and trained.	MOAL, KEPHIS/ KENAFF, NPCK, STAK, stakeholders	No. of private seed inspectors licenced.	2	1	1	0	0	
	1.5.3. Licence qualified seed inspectors.	July 2018 - June 2019	At least 25 potato seed inspectors licenced.	MOALF/ KEPHIS	The number of private seed inspectors licenced.	1	0	1	0	0	
	1.5.4. Monitoring and Evaluation.	July 2018 - June 2020	M&E Reports	MOALF/ KEPHIS	Report	0.5	0	0	25	0.25	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
1.6 Finalize pending policies and develop a code of practice for the industry	1.6.1. Finalize the root and tuber policy. Develop one code of practice for the industry.	July 2016 - June 2018	The root and tuber crops policy developed. One code of practice developed.	MOALF/ KALRO, KEPHIS, NPCK, KENAFF, Stakeholders	Roots and Tuber Crops policy and code of practice in place.	2	1	1	0	0	
1.7 Strengthening linkages between regulatory institutions responsible for the industry and industry players	1.7.1. Create a platform for potato industry regulatory institutions.	July 2016 - June 2018	One platform established	MOALF/ KEPHIS, AFFA, KEBS, KARLO, ADC, NPCK, KENAFF and stakeholders	Potato industry regulatory platform formed.	1.5	1	0.5	0	0	
1.8. Create an enabling environment for more breeders to undertake breeding	1.8.1. Recruit, train and motivate breeders. Build the capacity of breeders in potato variety development.	July 2016 - June 2020	8 breeders recruited and trained.	MOALF/ KALRO, ADC, Min of Lands, Development partners	The number of breeders hired and	38.4	9.6	9.6	9.6	9.6	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
	1.8.2. Provide breeding infrastructure and facilities. Provide adequate research land.	July 2016 - June 2020	1 breeding infrastructure established with all the required facilities. Adequate research land availed.	MOALF/ KALRO, ADC, Min of Lands, Development partners	one research facilities equiped with necessary infrastructure	10	2.5	2.5	2.5	2.5	
1.9. Government avails more land for potato seed multiplication including opening irrigated land	1.9.1. Acquire multiplication land allocated to private individuals. Support irrigation facilities for basic seed production in KALRO.	July 2016 - June 2018	KALRO 223 Acres, ADC 17,000 Acres and KEPHIS 125 Acres. Irrigation facilities for KALRO for 100 Acres	MOALF/ KALRO, ADC, KEPHIS	The number of acres acquired back. Number of acreage opened for irrigation	8,500	4,500	4,000	0	0	
1.10. Government to support ADC on new technologies like aeroponics and hydroponics	1.10.1. Establish facilities for new technologies (aeroponics and hydroponics). Build the capacity of staff on the new technologies.	July 2016 - June 2018	Increased availability of basic materials (mini tubers). # Trained staff. Establish 7 green houses and upgrade tissue culture laboratories and aeropinics unit.	MOALF, ADC	Number of staff trained. Tonnage of mini tubers produced. The number of greenhouses constructed. Upgraded tissue culture laboratories and aeroponic units.	1	0.5	0.5	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
1.11. Additional cold storage facilities for potato seed at strategic locations	1.11.1. Establish cold storage stores for seeds.	July 2016 - June 2019	3 cold storage facilities established.	MOALF / KALRO, ADC	Number of cold storage facilities established.	90	30	30	30	0	
1.12. Development and implementation of county potato strategy	Guide Counties to Develop and implement county potato strategies	July 2016- June 2019	County strategies for potato producing counties	County govts / MOALF, AFFA, NPCK/ Stakeholders	No. of county potato strategies	13	3	5	5	0	Counties to support and contribute to the initiative
Strategic objectives 2: Promote variety development and seed production											
2.1Reviving and support of breeding programs in the country	2.1.1 Acquire new germ plasm from diverse places for breeding for specific characteristics	July 2016- June 2018	300 New germ plasm acquired from diverse places	KALRO, CIP, Universities	200 No of new germ plasm acquired	5	1	2	2	0	
	2.1.2 Advance trails in the field	July 2016- June 2020	15 Potential clones for NPTs	KALRO, Stakeholders	10 Potential clones for NPT/DUS	2	0.5	0.5	0.5	0.5	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
	2.1.3 Multi locational trails	July 2016- June 2020	10 potential varieties	KALRO, Stakeholders	8 potato varieties	2	0.5	0.5	0.5	0.5	
	2.1.4 NPT and DUS tests	July 2016- June 2020	24 Potential varieties for release	KALRO, KEPHIS, universities	4 No of potential varieties to be released	3	0.75	0.75	0.75	0.75	
	2.1.5 Crossing, evaluation and selection of promising clones	July 2016- June 2020	60 Advanced clones for evaluation	KALRO, KEPHIS/ Stakeholders	15 advanced clones selected	5	1.25	1.25	1.25	1.25	
2.2 Promote officially released potato varieties that are high yileding, resistant to diseases and suitable for various utilization demands	2.2.1 Develop technology packages for released potato varieties	July 2016- June 2017	4 manuals developed	MOALF, KEPHIS, Universities, KALRO, CIP, GIZ-FSDRP, Kenya-Netherland seed potato project…	2 manuals developed	2.5	2.5	0	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
	2.2.2 Hold workshops, stakeholder fora and sensitization meetings	July 2016- June 2020	technological packages of suitable potato varieties developed	MOALF, County governeents KALRO, CIP, GIZ-FSDRP, Kenya-Netherland seed potato project…	No of technological packages developed	5	1.25	1.25	1.25	1.25	
	2.2.3 Update potato variety catalogues	June 2018-December 2018	1 catalogue updated	NPCK, MoALF, KALRO, CIP, GIZ-FSDRP, Kenya-Netherland seed potato project	1 potato variety updated	1.5	0	0	1.5	0	
	2.2.4 Carry out field days and demonstration in various appropriate agro-ecological zones	July 2016- June 2020	30 Field days and demonstrations held in the various appropriate agro-ecological zones	County Governments, KALRO, CIP, GIZ-FSDRP, Kenya-Netherland seed potato project	20 field days and demonstrations held	32	8	8	8	8	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
2.3 Strengthen seed production, multiplication and distribution	2.3.1 Recruit private seed entreprenurs (farmers and companies)	July 2016- June 2018	30 entrepreneurs recruited	KALRO, CIP, GIZ-FSDRP, Kenya-Netherland seed potato project , NPCK	20 entrepreneurs recruited	1	0.5	0.5	0	0	
	2.3.2 Encourage more seed companies to take up seed potato trade	July 2016- June 2018	5 more companies trading in seed potato	Seed companies NPCK,	4 companies trading in seed potato	1	0.5	0.5	0	0	
	2.3.3 Importation of suitable seed of prefered varieties	March 2017 and March 2019	21 Suitable seed potato varieties availed	KEPHIS / Seed multipliers,	15 seed potato varieties availed	60	30	0	30		
	2.3.4 Lobby the governement to recognise quality declared seed	July 2016- June 2020	Quality declared seed recognised	MOALF / KEPHIS, Stakeholders, NPCK	Quantity of QDC available	2	1	1	0	0	
	2.3.5 Mobilise farmers in non-traditional potato production ares into groups	July 2016- June 2020	50 Mobilised farmer group in non-traditional potato growing areas	County Government/ NGOs , eg SNV, KENAFF, NPCK	40 farmer groups in non-traditional potato growing areas	6	1.5	1.5	1.5	1.5	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
	2.3.6 Train farmers to produce good quality seed for their own use	July 2016- June 2020	20000 Trained farmers	County Government / NGOs eg SNV, IFDC stakeholders, KENAFF	No of trained farmers in production of quality declared seed for their use	8	2	2	2	2	
2.4 Develop and operationalize an efficient seed distribution system to ensure all farmers have access to quality seed in sufficient quantities at the right time	2.4 .1 Identification and training of stockists in seed potato handling	July 2016- June 2020	3000 Trained stockist in seed potato handling	County government, KEPHIS MOALF/ Seed companies	2000 Trained stockist in seed potato handling	17.6	4.4	4.4	4.4	4.4	
	2.4 .2facilitate partnerships between potato seed companies and agro chemical companies	July 2016- June 2020	Partnerships created	Development partners eg Kenya Netherlands seed project, GIZ- FSDRP/, NPCK	No of Partnerships created	1	0.25	0.25	0.25	0.25	
	2.4 .3Facilitate seed distribution from companies to stockists premises	June 2016-July 2020	Seed potato distributed	Seed companies, stockist, NPCK	Quantity of Seed potato distributed	4	1	1	1	1	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
2.5 Encourage private investors to fund breeding programmes.	2.5.1 Partner with interested parties, write and submit competitive proposals to potential financiers	July 2016- June 2020	5 partnerships	MOALF / KALRO/ stakeholders, NPCK	No of MoU signed and honoured, No of proposals funded	21	10	5	6	0	
2.6 Develop/ introduce heat and drought tolerant varieties for production in the hot lowland under rain fed and irrigated conditions	2.6.1 Search and introduce/import heat/drought tolerant varieties, Breed for heat/ drought tolerant varieties	July 2016- June 2018	5 Heat /drought tolerant varieties released	KALRO, KEPHIS/ Development partners (CIP, GIZ, Netherland breeders)	No of heat/ drought tolerant varieties	14	7	7	0	0	
2.7 Facilitate introductions of more varieties and seed from other breeding programs	2.7.1 Search and introduce/import heat/drought tolerant varieties, Breed for heat/ drought tolerant varieties	July 2016- June 2019	2 Heat /drought tolerant varieties released	KALRO, KEPHIS/ Development partners (CIP, GIZ, Netherland breeders)	No of heat/ drought tolerant varieties	6	3	0	3	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
2.8 Seed potato monitoring	2.8.1 Regular Data on seed situation a and dispatching to central depository centre	July 2016- June 2019	Available quantities of seed potatoes	NPCK/ Seed producers	Quantities of seed potatoes	2	0.5	0.5	0.5	0.5	
	2.8.2 Create and inform seed users on seed situation on regular basis	July-2016	1 Seed potato portal	NPCK, Development partners	1 seed portal	1.2	1.2	0	0	0	
Strategic Objective 3: Enhance Research in the potato industry											
3.1 Researching appropriate agronomic package(soil fertility, appropriate seed rate, fertilizer types and rates, agro chemicals usage and postharvest handling), for potato production	3.1.1 Carry out research for appropriate agronomic technonogies	July 2016- June 2019	5 Agronomic pakages available	KALRO, Universities, Development partners, seed companies	5 agronomic packages developed	**8**	2	2	2	2	
	3.1.2 Demonstrations in best practices of potato production	July 2016- June 2020	40 best practices demonstrated	KALRO, Universities, Development partners, seed companies	30 demonstrations	36	9	9	9	9	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
3.2 Search and Identify, Research, fabricate or acquire appropriate and affordable machinery	3.2.1 Carry out research for appropriate and affordable potato machinery	July 2016- June 2020	10 appropriate potato machinery identified	KARLO, ADC, KIRDI, University, DK engineering	10 appropriate potato machinery	**40**	10	10	10	10	
	3.2.2 Fabricate appropriate machinery	July 2016- June 2017	3 appropriate potato machinery fabricated	KIRDI, University, DK engineering, Jua kali	2 types of fabricated machinery	**0.2**	0.2	0	0	0	
	3.2.3 Acquire appropriate machinery	July 2016- June 2020	10 Appropriate potato machinery acquired	KALRO, ADC, FMD, seed producers	10 types of machinery acquired	20	5	5	5	5	
3.3 Easing/ hastening the process of importation and clearing of suitable machinery	3.3.1 Awareness creation on importation requirement	July 2016- June 2020	30 meetings	Stakeholders	20 meetings	4	1	1	1	1	
	3.3.2 Develop unified service charters	July 2016- June 2017 and July 2018 - June 2019	Faster clearance of machinery	GOK	Reduced turnaround time	3	1.5	0	1.5	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
3.4 Identification of best methods for collection, collating, storing and dissemination of appropriate information	3.4.1 Development of mechanisms for collection, collating, storing and dissemination of appropriate information	July 2016- June 2018	Online Potato platform, depository information resource centre	NPCK, Development partners/ stakeholders	1 Online Platform and resource centre	2	2	0	0	0	
3.5 Diversification of potato products range.	3.5.1 conduct research on various/ divervese potato utilization	July 2016- June 2020	5 Diversified potato products	Universities / KALRO/ Processors	3 potato products	15	5	5	3	2	
3.6 Enhance research on control and management of existing and emerging pests and diseases of potato	3.6.1 Develop mechanisms for responding to emerging pests and diseases of potatoes	July 2016- June 2020	Disease and pest management	KALRO, Universities, seed companies, KEPHIS, CIP, ICIPE, CABI / Development partners	Protocols developed	10	2.5	2.5	2.5	2.5	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
Strategic objective 4. Increased potato production											
4.2 Promote growing of potatoes in non- traditional potato growing areas	4.2.1 establish demonstrations on irrigated potatoes and water use efficiencies	By June 2018	20 demonstration established	MoALF/ County Governments	No. of demos established and reports	**3**	1.5	1.5	0	0	
	4.2.2 establish demonstrations on heat tolerant and early maturing potatoes	By June 2018	20 demonstration established	MoALF/ County Governments	No. of demos established and reports	**2**	1	1	0	0	
4.3 Promote appropriate technologies	4.3.1 Establish demonstrations applicable mechanised operations	By June 2018	14 demonstration carried out (14 walking tractors purchased)	MoALF/ County Governments	Adoption of mechanized operations	**7**	7	0	0	0	
4.4 Provide subsidy for potato production	4.4.1 Subsidize purchase of certified seed potato	By June 2018	200 tons of certified seed provided and 250 acres established	MOALF	Subsidized 200 tons of seed purchased and distributed to farmers	**10**	5	5	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
	4.4.2 Support construction of group DLS storage facilities	By June 2018	14 stores constructed in counties	MOALF	No of stores constructed	**14**	7	5	2	0	
4.5 Monitoring and evaluation	4.5.1 Carry out quarterly monitoring and evaluation	By June 2020	project monitored and evaluated regularly	MoALF / county Government	quarterly evaluation reports	**10**	2.5	2.5	2.5	2.5	
4.6 control wide spread of pests and diseases	4.6.1 Establish a mechanism of reporting emerging pests and diseases	By June 2020	a mechanism of reporting emerging pests and diseases established	MoALF/ County Governments	monthly reports	**1**	0.25	0.25	0.25	0.25	
		By June 2020	360 staff trained on early warning	MoALF/ County Governments	No. of staff trained	**2**	0.5	0.5	0.5	0.5	
	4.6.2 Finance and support establishment of surveillance activities and diagnostic lab	By June 2018	1 diagnostic lab built and equipped in Kitale, and Nakuru lab equipped	MoALF/ KEPHIS	Kitale Lab built and equipped, Nakuru Lab equipped	**26**	16	10	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
Strategic objective 5.Improve post-harvest handling, value addition and marketing											
5.1 Promote Agribusiness in potato industry	5.1.1 Train youth on agribusiness opportunity	July 2016 - June 2019	1 300, Youth sensitized in Agribusiness	County govts/ development partners	No of youth trained	3.5	1.5	1	1	0	
	5.1.2 Train all players on entrepreneurship.		200, Industry players trained	County govts/ development partners	No of potato players trained	3	1	1	1	0	
5.2 The government and other service providers to improve access to extension services	5.2.1 Trade fairs, print and electronic media, Special ext materials		20,000 Extension materials developed and distributed.	County govts / KENAFF/ other partners/ Media houses	No of extension related programmes on air and in print	4.5	1.5	1.5	1.5	0	
			52 weekly airtime coverage on potato subject matters	MOALF / AFFA/ stakeholders	No of weekly airtime coverage done	3	1	1	1	0	
5.3 Processors and other industry players to encourage contract farming for reliable supply of quality raw materials and structured marketing	5.3.1.Encourage contract farming	July 2016- June 2017	200 groups with MoUs on contract farming	MOALF / AFFA, County govts / NPCK / KENAPOFA / KENAFF/ other farmer groups	No of contract and MoUs	0.5	0.5	0	0	0	
	5.3.2. Develop regulations on contract farming.	July 2016 June - 2017	1 regulation on contract farming in place		No of regulation in place	0.5	0.5	0	0	0	
	5.3.3. Establish collection centres	July 2016- June 2019	300 collection centres		No of collection Centres	300	100	100	100	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
5.4 The governments at both levels and other relevant stakeholders to develop potato seed production and distribution as a business	5.4.1 Train producers on seed production, regulations and marketing.	July 2016- June 2019	1000 Trained seed producers	LF/ AFFA, County govts/ NPCK/ KENAPOFA KENAFF/ other farmer groups	No of seed producers	8	3	2.5	2.5	0	
5.5 Promote formation of ware potato producer business organizations;	5.5.1Train producers on linkages for market access.	July 2016- June 2018	20,000 ToTs, Trained ware potato producers and improved business in potato.	County govts/ NPCK/ KENAPOFA KENAFF/ other farmer groups	No of ware potato producers formed and trained ,No of ToTs held	2	1	1	0	0	
5.6 The governments at both levels and other relevant stakeholders to develop market and product research and business incubation centres	5.6.1Create linkages to business incubation centres	July 2016- June 2017	26 linkages to business created	MOALF / AFFA, NPCK/ KENAFF, KENAPOFA and other industrial players	No of new products commercialised	2	2	0	0	0	
			13 incubation centres developed		No of incubation centres developed	8	2	2	2	2	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
5.7 The government and other stakeholders to empower farmers to be price negotiators instead of price takers through training, providing market information and linkage to the markets;	5.7.1 Training linkages to market information	July 2016 - June 2019	13 reports on potato profitability analysis carried out	County govts / NPCK	No of farmers following established farm mechanism	1.5	0.5	0.5	0.5	0	
	5.7.2 Provide for setting up minimum farmgate price for recommendation		At least a guideline of farm gate prices	MOALF / AFFA, County Govt, NPCK	Published price guidelines	0.25	0.25	0	0	0	
	5.7.3 Profitability analysis at county levels		13 reports on profitability analysis		Reports					0	
5.8 Establish ICT platform that is accessible to serve value chain actors	5.8.1 Linkage of farmers to available platforms,	July 2016- June 2018	At least 26 marketing plat forms documented	MOALF /AFFA, County govts, NPCK	No of marketing platforms available	1	0.5	0.5	0	0	
	5.8.2 Set up central marketing information centre for potato		at least 1 central information system established	MOALF /AFFA, County govts, NPCK	No of information systems	2	1	1	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
5.9 Support establishment of traceability on produce.	5.9.1 Training potato industry players on traceability and standards		At least 650 value chain players trained	MOALF /AFFA, NPCK/ KEPHIS/ KEBS/ Seed Producers	Traceability tags eg barcodes	2	1	1	0	0	
	5.9.2 Develop guidelines on traceability and infrastructure	July 2016- June 2017	one guideline on traceability and code of practice developed		code of practice developed	1	1	0	0	0	
	5.9.3 Put in place infrastructure on traceability		one functioning database on traceability initiated		infrastructure on traceability in place	1	1	0	0	0	
5.10 Document adopt and avail appropriate technologies for value addition	5.10.1 develop, document and disseminate technologies for value addition	July 2016- June 2018	inventory of technologies for value addition documented and disseminated	MOALF /AFFA, NPCK/ KEPHIS/ KEBS/ Seed Producers	One document on technologies	1.75	1	0.75	0	0	
5.11 Finalize guidelines for storage facilities	5.11.1develop guidelines for storage facilities	July 2016- June 2018	At least two retreats to develop guidelines	MOALF /AFFA, NPCK	No of guidelines developed	3	1.5	1.5	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
Strategic objective 6: Promote public -private partnerships in the potato industry development											
6.1Harmonize the activities of the different actors in the potato industry	6.1.2 Identify and create an inventory all the stakeholders	July 2016- June 2019	At one registration exercise for all stakeholders	MOALF / AFFA/ County govts and /NPCK / KENAFF and other partners	A register in place for each country	8	5	3	0	0	
6.2 Promote forums for information processing and sharing along the value chain eg trade fairs	6.2.1 Organize forums of all actors in the value chain	July 2016- June 2019	at least two fora on different issues organized annually	NPCK /KENAFF and MOALF / County govts and other partners	No of fairs done	4	2	2	0	0	
6.3 Facilitate linkages between the farmers, research, extension and the market	6.3.1 Carry out linkage forums of all concerned groups	July 2016- June 2019	At least one linkage forum held		No of forums held	2	0.5	0.5	0.5	0.5	
	6.3.2 Research extension liaison meetings	July 2016- June 2019	at leat one priority setting and one performance review meetings held	MOALF /AFFA, County govts/ Researchers / NPCK / farmer organization	No of meetings/ forums	4	0	4	0	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
6.4 Establish implementation and monitoring committees at the national and county level	6.4.1 Constitute M and E committees from key institutions	July 2016- June 2019	at least one at National and one each in County level held	MOALF/ AFFA, County Govts, NPCK / KENAFF and other partners	No. of meetings held	1.5	0	1.5	0	0	
		July 2016- June 2019	At least 2 M& E visits done	MOALF / AFFA, County Govts, NPCK / KENAFF and other partners	M and E reports	1.5	0	1.5	0	0	
Strategic objective 7: Improve funding to the potato industry											
7.1 Establishing mechanisms to access funds in the commodity fund	7.1.1 Establish mechanism to access fund in the commodity fund	By June 2020	Increased funding to the potato sector	MOAL / AFFA	No of farmers accessing Commodity fund	2.2	0.7	0.5	0.5	0.5	
7.2 Improving GOK and donor funding to potato industry	7.2.1 Lobbying for increased funding to potato sector	By June 2019	Increased funding to the potato sector	MoALF / Stakeholders	Increased funding to potato sector	3	1	1	1	0	

Action	Activities	Time line	Expected output/Target	Responsibility/ Actor	Performance indicator	Budget in millions	2016/2017	2017/2018	2018/2019	2019/2020	Notes on budget rationalization
7.3 Government to implement the 10% of the GDP funding to the agriculture sector.	7.3.1 Lobbying for increased funding to agriculture sector	By June 2019	Increased allocation to the agriculture sector	MoALF / Stakeholders	10% of GDP Allocated to agriculture sector	3	1	1	1	0	
Total						**13,000**	**5749.7**	**5182.6**	**1130.6**	**937.1**	

9.0 Coordination, Monitoring And Evaluation

9.1 Introduction

Monitoring, evaluation and reporting will be a central feature of this strategy. It will involve routine data collection and analysis. The results will be used to inform decision making at all levels. Coordination, monitoring and evaluation of the strategy implementation will be the responsibility of MOALF, AFFA-Food Crops Directorate, KALRO- National Potato Research Centre – Tigoni and the NPCK in collaboration with KEPHIS and other key stakeholders in the public and private sector (M & E team). The monitoring period will be on a quarterly basis following the government financial year and a report produced after every monitoring session.

9.2 M & E activities

The M & E team will undertake the following initiatives

i. Develop M&E framework

ii. Regular monitoring, data collection, analysis, reporting and sharing

iii. Establish and regularly update potato value chain database

iv. Feedback and advice on areas of improvement or where additional support is required.

9.3 Performance indicators

Performance indicators at national and county levels have been developed in the implementation matrix. These indicators will be made available for the implementation and supervision of this strategy This strategy places great emphasis on improved productivity and business development therefore these indicators will form the basis of evaluation and monitoring.

9.4 Resource mobilization to finance the potato strategy recommendations

9.4.1 Introduction

The financing of the potato strategy implementation will be a shared responsibility between the National government, the county governments, private sector, International organizations, farmers, NPCK, farmer associations, NGO's and development partners. The strategic objectives which are of a public good nature will be largely financed by the National and County Governments. These will include, provision of an enabling environment, research and development, man power provision and development, multiplication of basic seed, infrastructure, extension services, farmer empowerment, regulatory and quality assurance services.

The strategy objectives of this business development will be largely financed by the industry and private sector. The potato industry will be private sector led within the provisions of the Kenyan law. In the initial stages of implementation of the strategy the public sector will support the formation and incubation of the various industry associations to a level where they will be self sustaining. This will call for provision of seed money to support the development of potato industry.

9.4.2 Sources of funds

The programmes in this strategy require approximately KSh.13 billion to be implemented in a period of four years. Of this, KSh.8.5 billion is for acquiring back the ADC and KALRO land allocated to private individuals while 2.5 billion is for establishing a potato center of excellence. The rest of the strategy activities will therefore require Ksh. 2 billion.

i. The major source of funding will be the government through the exchequer. Annual budgets will be regularly prepared and submitted to the Ministry for funding.

ii. Development partners will fund research, business producer groups and trainings

iii. Research will raise funds through competitive grants, strategic alliances and from bilateral donors

iv. The table banking concept will be encouraged for use by farmer groups or producer business groups to fund their individual activities

v. Financial institutions will offer financial services

vi. Private sector will be encouraged to invest in the industry

vii. Contract farming will be encouraged where participating parties will fund their respective schemes

viii. Other projects and programs will be approached to fund relevant activities.

10.0 Annex: List of Reviewers

The Strategy was Reviewed and Finalized by the Following:

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Mechanised potato planting

Mechanised Potato harvesting

Good Potato Yields

Small Scale Potato Production

Large Scale Seed Potato Production

Minituber Production from Aeroponics

Compiled by:

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