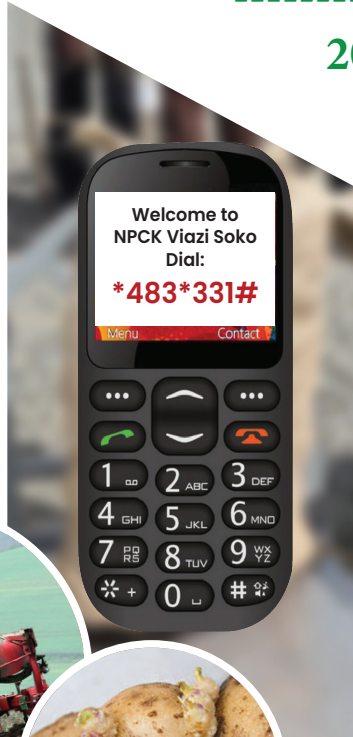




MINISTRY OF AGRICULTURE, LIVESTOCK
FISHERIES AND COOPERATIVES

THE NATIONAL POTATO STRATEGY

2021-2025





Ministry of Agriculture, Livestock, Fisheries and Cooperatives

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2021-2025

PREFACE

The Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MoALF&C) envisions a secure and wealthy nation anchored on an innovative, commercially oriented, and competitive agriculture sector. This is done purposely to improve the livelihoods of Kenyans by ensuring nutrition and food security while opening opportunities for socio-economic improvement.

The potato value chain is important due to its contribution to the economy in different ways. Potato is consumed widely and acts as a source of raw material for many industries. The sector employs over 3.5 million actors across the value chain and contributes over Ksh 50 Billion to the economy. Despite this crucial role, its full potential is yet to be realized.

The National Potato Strategy (NPS) 2016-2020 has helped in guiding transformation of the industry to a great extent. The period witnessed increased private sector involvement. The strategy was instrumental in guiding the development and operationalization of supportive laws, regulations, and standards such as the Crops (Irish Potato) Regulations 2019, and more collaborations and partnerships between the actors and players. It also helped increase interest and attention to the subsector that saw potato being placed on the National Agenda. However, there is still a lot that needs to be done for the sector to realize its full potential. The 2021-2025 strategy whose overall goal is to transform the potato industry into a commercially oriented enterprise that ensures sustainable food and nutrition security and incomes has the following 9 strategic objectives: Strengthening institutional, legal and regulatory framework; Enhancing research in the potato industry; Potato variety development and seed production; Increasing potato production; Post-harvest management, value addition and marketing; Enhancing import, export, and trade of potato and its value added products; Enhancing use of data management tools and participation of youths and women in the industry; Enhancing industry coordination, and Resource mobilization. This aims at making the industry more vibrant, innovative, and commercially oriented.

To this end, I wish to thank the National Potato Council of Kenya (NPCK), for coordinating development of the 2021-2025 National Potato Strategy to ensure continued transformation and growth of the potato industry. I take this opportunity to thank and appreciate the financial support by

Deutsche Gesellschaft für Internationale Zusammenarbeit GmBh (GIZ), which enabled the review work and the entire process.

My special appreciation goes to all the technical team members, drawn from the following institutions and counties: Kenya Agricultural Livestock Research Organization (KALRO)-Tigoni, MOALF&C, Kenya Plant Health Inspectorate Service (KEPHIS), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Agriculture and Food Authority (AFA), Elgeyo Marakwet and Nyandarua Counties, International Potato Centre (CIP), GIZ- Nutrition Sensitive Potato Partnership Project, Kenya - Netherlands Seed Potato Project and Netherlands Development Organization (SNV) for their dedication in supporting the development of National Potato Strategy (2021-2025).

I take this opportunity to recommend this strategy to the County governments and other stakeholders in the industry.

A handwritten signature in black ink, appearing to read 'H. Boga', enclosed within a rectangular box. The signature is stylized with a large 'H' and a cursive 'Boga'.

Prof. Hamadi Iddi Boga, Phd, CBS.

Principal Secretary,

State Department for Crops Development and Agricultural Research.

Ministry of Agriculture, Livestock, Fisheries and Cooperatives.

ACKNOWLEDGEMENT

The development of the 2021-2025 National Potato Strategy was made possible through the support of GIZ who availed the resources that ensured the process was completed within the shortest time possible.

Special gratitude goes to the CEO, NPCK and his team for the coordination of the whole process. This work would not have been possible without the invaluable contribution and positive engagement of members of the Technical Committee drawn from the following institutions and counties: KALRO-Tigoni, Ministry of Agriculture, Livestock, Fisheries and Cooperatives (MOALF&C), Kenya Plant Health Inspectorate Service (KEPHIS), Agriculture and Food Authority (AFA), Jomo Kenyatta University of Agriculture and Technology (JKUAT), Elgeyo Marakwet and Nyandarua Counties, International Potato Center (CIP), GIZ, Kenya-Netherlands Seed Potato Project and SNV.

The Technical committee also acknowledges contributions of other stakeholders such as Seed potato multipliers, NGOs, Egerton University, University of Nairobi and other potato growing counties.

Prof. John Nderitu
Chairman
National Potato Council of Kenya

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ABBREVIATIONS, ACRONYMS AND DEFINITIONS

ADC	Agricultural Development Corporation
AFA	Agriculture and Food Authority
ASTGS	Agricultural Sector Transformation and Growth Strategy
CABI	Centre for Agriculture & Bioscience International
CIP	Centro Internacional de la Papa (International Potato Centre)
CG	County Government
CAC	Codex Alimentarius Commission
COMESA	Common Market for Eastern and Southern Africa
EAC	East Africa Community
EIA	Environmental Impact Assessment
GAP	Good Agricultural Practices
GDP	Gross Domestic Product
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit GmBh
GoK	Government of Kenya
ICIPE	International Centre for Insect Physiology and Ecology
ICT	Information and Communications Technology
IFDC	International Fertilizer Development Centre
IPM	Integrated Pest Management
JICA	Japan International Cooperation Agency
JKUAT	Jomo Kenyatta University of Agriculture and Technology
KALRO	Kenya Agricultural and Livestock Research Organization
KEBS	Kenya Bureau of Standards
KENAFF	Kenya National Farmers Federation
KEPHIS	Kenya Plant Health Inspectorate Service
KIRDI	Kenya Industrial Research and Development Institute

KNBS	Kenya National Bureau of Statistics
M.A.S.L	Meters Above Sea Level
M&E	Monitoring and Evaluation
MoALF&C	Ministry of Agriculture, Livestock Fisheries and Cooperatives
NG	National Government
NGO	Non-Governmental Organization
NPCK	National Potato Council of Kenya
NPS	National Potato Strategy
NPT	National Performance Trials
OECD	Organization for Economic Co-operation and Development
PPP	Public Private Partnership
SNV	Netherlands Development Organization
SPS	Sanitary and Phytosanitary
SWOT	Strengths, Weaknesses, Opportunities and Threats
TC	Tissue Culture
TPS	True Potato Seed
UN	United Nations
UPOV	Union for the Protection of New Varieties of Plants
VC	Value Chain

Definition

Seed: Means any propagation material which includes tubers, apical rooted cuttings and mini tubers among others that are recognized by the seed certification regulator.

EXECUTIVE SUMMARY

The agriculture sector contributes 34% of the Gross Domestic Product (GDP) to Kenya's economy and adds another 27% through linkages to other sectors such as manufacturing, distribution, and services (KNBS, 2020). It is the main source of direct income and livelihoods for about 70% and 40% of the rural and Kenya's total population respectively.

The importance of agriculture has been outlined in several Government policy documents such as Kenya Constitution 2010, Kenya Vision 2030, the UN Sustainable Development Goals (SDGs), the Roots and Tuber Crops Strategy (2019-2022), the National Food Nutrition Policy, The Crops (Irish Potato) Regulations (2019) among others. The Agricultural Sector Transformation and Growth Strategy (ASTGS) prioritized 13 value chains (VCs) including potato with potential to raise smallholder farmer incomes and offer dietary diversity. This is also in line with the Big Four Agenda under the pillars of food security and Agro-processing.

Nationally, per capital potato consumption is estimated at 25 Kilograms a year with a total consumption of 2.3 million Metric Tons of potatoes estimated by 2022. The target is to increase potato production to 2.5 Million Tons per year (TechnoServe, 2018). However, the current productivity of potatoes of between 7-10 T/Ha is way below the potential productivity of between 30-40 T/ha (Kaguongo, 2014). The low productivity is because of inadequate supply of quality seed of preferred varieties, poor agronomic practices, high postharvest losses, unstructured markets, among other challenges.

To effectively address the challenges in the potato value chain, the NPS intends to harmonize the activities of different players and fully utilize their synergies and complementarities by guiding all actors both at county and national levels to address these challenges and tap into available opportunities. The overall goal of the strategy is to transform the potato industry into a commercially oriented enterprise that ensures sustainable food and nutrition security and surplus for trade, export, and increased incomes. The achievement of the set, 9 (nine) strategic objectives: Strengthened institutional, Legal and regulatory framework; Enhanced research in the potato industry; Potato variety development and seed production; Increased potato production; Post-harvest management, value addition, marketing and utilization; Enhanced import, export and trade; Enhance

the use of data management tools and increase participation of youths and women in potato value chain businesses; Enhanced industry coordination and funding, will lead to a vibrant, innovative and commercially oriented and self-regulating potato industry.

1.0 INTRODUCTION

1.1 Background

Potato (*Solanum tuberosum* L) has emerged as one of the key staple crops in Kenya and second most important crop in the country after maize. The potato value chain employs over 3.5M actors, contributing over Kshs 50 Billion to the economy. In view of the above, the Government of Kenya included potato in the Big 4 Agenda under the pillars of food nutrition and security. The primary goal is to enhance large scale food production, drive smallholder productivity, and reduce the cost of food to improve accessibility to all.

Potato is grown in a wide range of conditions, being produced mainly in two rainy seasons, the long rains (April - August) and short rains (September - January) with the length of the season varying from one region to another. However, with improved and newly introduced potato varieties having been registered in Kenya, production has shifted from predominantly high-altitude areas of between 1500 to 3000 meters above sea level (M.A.S.L) to include areas with altitudes of 1200 - 1500 M.A.S.L.

There are 13 major potato-producing counties which are: Meru, Nyeri, Nyandarua, Kiambu, Taita-Taveta, Nakuru, Narok, Bomet, Elgeyo-Marakwet, Trans-Nzoia, Bungoma, Uasin-Gishu and West Pokot; Other potato producing counties include Kisii, Nyamira, Kirinyaga, Muranga, Baringo, Nandi, Laikipia and Kericho. Upcoming potato producing counties include: Machakos, Makueni, Embu, Kajiado, Tharaka Nithi, Samburu, Kwale and Nairobi (Figure 1).

Due to its importance, potato production has shifted from being a smallholder crop to include large-scale producers who have embraced irrigation thus helping ensure sustained and consistent supply of quality ware potato to the market.

Investments in quality seed potato, machinery, inputs, and Good agricultural Practice has seen a number of farmers achieving productivity levels of up to 20T/ha.

Over the years, the area under production has been increasing as well as the volume and incomes generated. The increased area is because of the farmers in major producing counties increasing their production areas while counties which traditionally have not grown potatoes, such as

Kajiado and Nandi, have started growing.

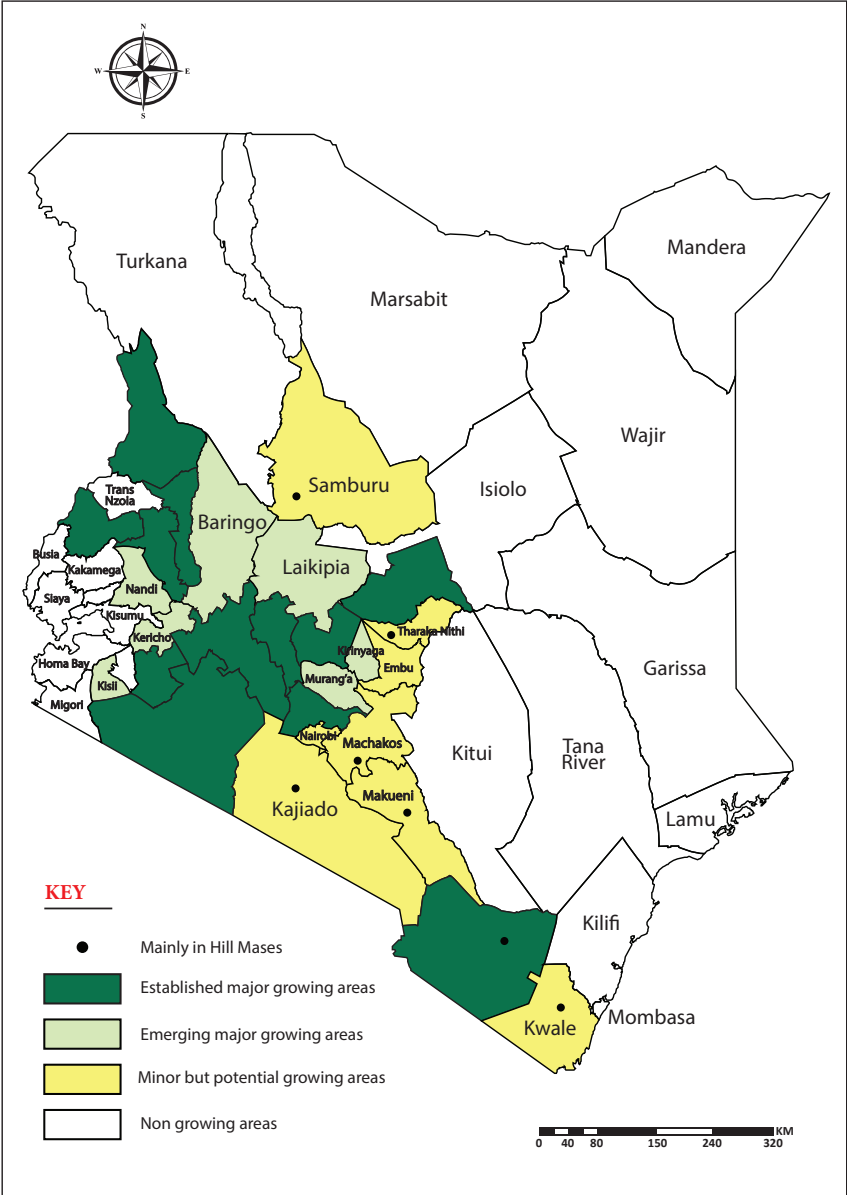


Figure 1: Potato growing counties in Kenya
Source: MoALF&C, and the Potato Variety Catalogue 2019

Despite expanded production area, the productivity per unit area has remained low (7-10T/ha) due to poor agronomic practices coupled with low access and use of poor-quality seeds, plus use of unsuitable inputs. This calls for concerted efforts by stakeholders to increase productivity levels to optimal levels of between 20-40T/ha.

Figure 2 below shows the productivity levels over the last few years.

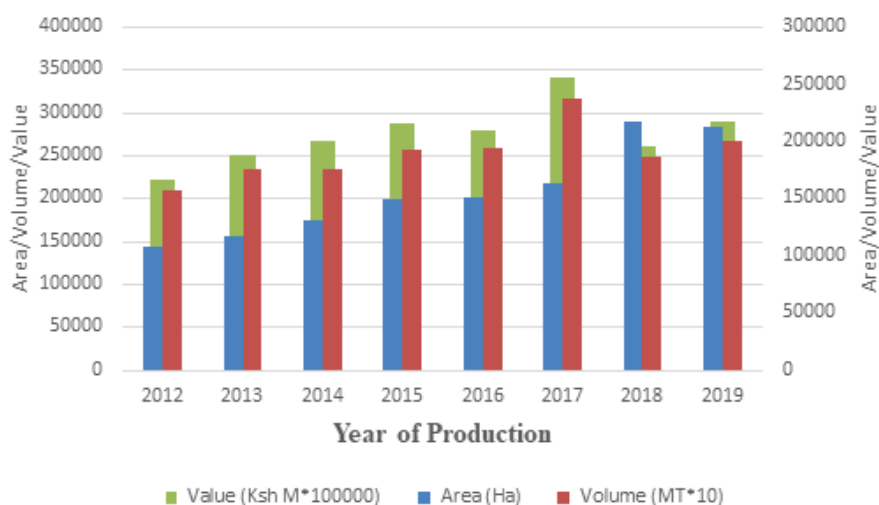


Figure 2: Potato Production Trends: Area, Volume and Values

Source: Horticulture and FAOstat 2012-2019 validated and calculated reports

On the demand side, the National per capita potato consumption is estimated at 25 Kg a year (www.potatopro.com). Based on current trends, Kenyans are expected to consume approximately 41 Kg of potato per capital by 2022 with the projection that Kenyans will consume a total of 2.3 million Mt of potatoes in 2022 hence the target is to increase potato production to 2.5 million tons per annum (TechnoServe, 2018). Moreover, the urban potato demand is growing at 7 per cent annually. This is because of increased urban population and changing eating behavior.

Additionally, for the potato industry to achieve its desired goals, it requires coordinated efforts from all stakeholders. It is envisioned that,

the development of the NPS will guide all actors both at county and national levels to address the existing challenges and tap into available opportunities at different levels. The strategy intends to harmonize activities of different players thus creating synergies and complementary efforts towards efficient utilization of the resources.

It is therefore important to review the 2016-2020 NPS to capture and tap from new opportunities, new technologies, new government policies and regulations, partner activities and emerging agendas. The inclusion of the emerging issues and best practice will ensure continuous transformation of the industry making it more competitive, attractive, and generating more income for farmers, dealers and overall benefit to the National and County governments while improving on the food and nutrition situation of the Country.

1.2 Justification of the Strategy

The potato industry's contribution to the national economy is significant with annual production being 2-3 million tons per year, worth over KSh. 50 billion in farm gate prices. Additionally, potato is a priority crop in Kenya with several County governments having identified potato as a key food and nutrition security crop (13 major producing counties, 8 upcoming but not established, and 8 others being potential areas). Domestic and industrial utilization is on the increase with potato being widely consumed in different forms (staple). Its importance has spurred increased investment (GIZ, Irish Embassy, and JICA).

The industry employs over 3.5 million actors along the value chain and with a huge annual turnover and a potential to contribute over KSh. 200 Billion to the economy. This calls for the industry to have strategic direction and set priorities. The industry activities should be well aligned to the national priorities and/or devolved government priorities. Consequently, there is need for the industry to have structured coordination and communication.

More importantly, since the NPS (2016-2020) came to an end by Dec 2020, there is need to take stock of the key achievements, lessons learnt, challenges and emerging opportunities that can be prioritized and integrated in the new strategic plan (National Potato Strategy 2021-2025).

1.3 Vision, Mission and Objectives of the Strategy

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 and competitive enterprise that ensures sustainable food and nutrition security and increasing incomes among all the VC actors.

1.4 Strategic Objectives

There are 9 objectives as follows:

1. Strengthen Institutional, Legal and Regulatory Framework for a sustained Potato Value Chain
2. Enhance Research in the industry
3. Promote Variety Development and Seed Production
4. Increase Potato Production
5. Strengthen Post-Harvest Management, Value Addition, Marketing and Utilization
6. Control Imports, and improve Export and Trade
7. Enhance data management tools and participation of youths and women
8. Enhance Industry Coordination, Collaboration and Networking
9. Improve Industry Resource Mobilization

1.5 Key Deliverables

Table 1 below summarizes the deliverables of the NPS (2021-2025) out of implementations of the interventions highlighted in the 9 stated strategic objectives.

Table 1: Summary of Key Objectives and Deliverables

	Key Objectives	Key Deliverables
1	Enabling Institutional, Legal and Regulatory Framework for a sustainable potato value chain	<ol style="list-style-type: none"> 1. Increase staff establishment in key public institutions 2. Increase irrigated area under potato by at least 1000 ha 3. Harmonized potato levies in all potato producing counties 4. Regulations implemented in all potato counties 5. Regulations for seed potato production and other vegetative planting material developed 6. At least 60% of value chain actors complying with sector standard and practices 7. Strategy domesticated and implemented at county level in all potato producing counties
2	Enhance Research in the potato industry	<ol style="list-style-type: none"> 1. Technologies, innovation, and management practices developed, packaged and adopted 2. At least 10,000ha brought under mechanized planting and harvesting in potato annually 3. New varieties taking up at least 20% share of production and market area by the fifth
3	Promote variety development, seed production and certification	<ol style="list-style-type: none"> 1. At least 2 consumer preferred varieties developed and adopted every year 2. At least one climate resilient variety developed and adopted every year 3. Annual supply of certified seed potato increased to 30,000 tons 4. At least 3 Early Generation Seed technologies adopted
4	Increase potato production	<ol style="list-style-type: none"> 1. Increased productivity from the current 10 t/ha to 15 t/ha and at least 20% annual increase in national production 2. At least 10% increase in job creation along the chain
5	Post-harvest management, value addition, marketing, and utilization	<ol style="list-style-type: none"> 1. Post-harvest losses reduced by 50%. 2. Doubling the number of fresh potatoes being processed into various products 3. Increased household dietary share of potato products 4. Structured market benefiting all the actors in the VC increasing the share of the producer by at least 50%

6	Import, export, and trade	<ol style="list-style-type: none"> 1. Harmonized regional potato standards 2. At least 30% increase in volumes of exported potato products 3. A framework for cross border seed trade developed
7	Potato Value chain Data Management and involvement of youths and women	<ol style="list-style-type: none"> 1. Streamlined information and data base established 2. At least 50% of VC actors access and use information from the database 3. Increased support and business opportunities for youths and women
8	Industry Coordination, collaboration, and networking	<ol style="list-style-type: none"> 1. National stakeholder forum strengthened 2. Improved county-based stakeholder platforms
9	Industry resource mobilization	<ol style="list-style-type: none"> 1. 50% increase of financial support to the industry 2. Potato specific financial and insurance solutions available

Review of 2016-2020 Strategy

The NPS (2016-2020) was launched in 2016 and was aimed at providing a road map for addressing the identified key constraints in the industry. The constraints and the proposed interventions touched on the industry players, the structures, and value chain activities.

It was crucial for the industry to have a NPS as it acted as the overarching guide that directed all value chain activities carried out by all stakeholders both at county and national levels. It aimed at reducing overlapping of activities and roles by creating synergy, enhancing coordination, and helping in exploiting opportunities at all levels. The implementation of the NPS (2016-2020) resulted to a few transformations in the industry. These include improved potato productivity, increased investment in potato storage solutions and increased collaborations and partnerships, among others. Notable also is the development and launch of the Crops (Irish Potato) Regulations 2019 which was achieved in the same period. With these new developments, it is imperative that the industry will

continue with this trajectory. However, much more needs to be done considering the emerging changes in technology, climate change issues and the changing eating patterns of Kenyan, among other issues.

The NPS (2016-2020), had identified seven key constraints and seven objectives that were addressed both at the national and county level though, at the county level, these constraints and objectives were domesticated and addressed according to the specific needs of the counties.

The **key milestones** that were achieved included:

- i.) In the Strengthening of the Institutional, Legal and Regulatory Framework there was enactment and operationalization of the Crop (Irish Potato) Regulations, 2019 that provides for regulation and coordination of the industry. Private accreditation was also passed and KEPHIS was able to train private sector inspectors.
- ii.) In promotion of potato varieties and seed production, the strategy witnessed significant increase in registered varieties with over 60 commercially varieties being officially released.
- iii.) In seed development, KALRO was able to commercialize improved varieties in partnership with Kisima Farm and Kirinyaga Seed Limited. The period also saw significant investment in the promotion of rapid seed multiplication technologies (RMT) including rooted apical cuttings, aeroponics and hydroponics. Together with importation of seed potatoes, the industry saw significant improvement in supply of certified seed potato of preferred varieties to the farmers. NPCK's *Viazi Soko* digital platform helped farmers access seed more easily.
- iv.) As a result of the growing importance of the potato crop, the period recorded enhanced research prioritization. Whereas there was research in the areas of fertilizer use, varieties and pest and disease management on the potato value chain, several programs and projects were approved on specific potato adaptive research work during the term of the NPS (2016-2020).
- v.) There was improved potato productivity and production through enhanced capacity building activities especially on Good Agriculture Practices (GAP) and in the expansion of potato growing areas. Various potato technologies were tested, documented, disseminated,

and adopted by farmers. Several extension approaches were tried and deployed to ensure correct extension messages were communicated to farmers. The period also recorded enhanced National and County government's investments in potato machinery and equipment meant to improve efficiency in carrying out farm activities. Subsidy programs to support potato farmers through purchase of seed, fertilizers and agrochemicals were also heightened.

- vi.) A major achievement in a bid to improve post-harvest handling, value addition and marketing was the formation of producer organizations at the county level for collective marketing of potatoes coupled with the training of youths and other actors on agribusiness and entrepreneurship. The NPCK *Viazi Soko* platform was instrumental in market information dissemination.
- vii.) NPCK played a pivotal role in the coordination of the potato industry. The period witnessed enhanced Public-Private-Partnerships (PPP) in the VC. In the implementation of the NPS (2016-2020), there was enhanced funding to the potato industry through several innovative stakeholder models that majorly supported the production segment of the value chain. Increased funding to the industry remains as a key objective that would go towards spurring growth and optimization of achievements in the other strategic objectives.

2.0 STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND THREATS (SWOT) ANALYSIS OF POTATO INDUSTRY AND KEY STAKEHOLDERS

2.1 Introduction

The last five years has seen potato emerge as one of the leading VC in provision of food and nutrition and income generation. The potato crop entered the National Government Big 4 Agenda and is currently enlisted as one of the food crops in the Warehouse Receipt System (WRS) and Strategic Food Reserve (SFR). However, the industry still faces several challenges among them access to high quality seed, unstructured marketing, inadequate investment, and coordination of the industry.

The NPS and other enacted policies and regulations provide the framework for revamping and sustaining the gains made in the industry. Coupled with targeted initiatives by stakeholders in the industry, potato can significantly contribute to the attainment of the national aspirations.

2.2 Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

There are many factors that affect potato production, marketing, and consumption. Table 2 below shows the Strengths-Weaknesses-Opportunities and Threats (SWOT) analysis for the potato value chain. Based on SWOT analysis, it is evident that there is need for the industry to employ both offensive (combining strengths and opportunities) and defensive strategies (to minimize the impact of threats and any unforeseen weakness) to maximize on the potentials.

Table 2: Strength, Weakness, Opportunities, and Threats Analysis of Potato VC

Strengths	Weaknesses
<ul style="list-style-type: none">• Potato is the second most important staple food in Kenya• Potato is a priority crop for both the National and several County governments• Potato is an important cash crop	<ul style="list-style-type: none">• Poorly developed seed potato production system.• Inadequate supply of quality seed of preferred varieties• Minimal value addition (grading sorting and cleaning of tubers)

<ul style="list-style-type: none"> • Potato can be grown for 3 seasons in a year and has high productivity per unit area (up to 40 ton/Ha) • Potato has high water use efficiency compared to other crops • Potato is a good source of zinc, iron, potassium, and vitamin C • There are favorable climatic conditions in traditional growing areas • Registered stakeholder organization work under public private partnership - NPCK • There was Enactment of The Crops (Irish Potato) Regulations, 2019 • Variety evaluation, seed production, sanitary and Phytosanitary procedures are harmonized with regional and international systems (COMESA, EAC, UPOV, OECD seed schemes International Plant Protection Convention (IPPC), World Trade Organization (WTO), CAC) • Reputable regulatory institutions (KEPHIS, KEBS, AFA etc.) exist • Availability of specialized research institutions is critical • Active breeding programme and variety introduction mechanisms exist • Existence of a wide array of high yielding potato varieties that meet diverse ecological and utilization requirements • Existing operational/ functional laboratories/ procedures 	<ul style="list-style-type: none"> • Inadequate research on product development • Inadequate product development associated with entrepreneurial skills • High post-harvest losses • Weak farmer organizations • Inadequate business acumen at farmer and group level • Depleted soil fertility with inappropriate replenishment • High cost of farm inputs and labor • Lack of appropriate equipment/ machinery for small scale farmers • Inadequate access and adoption of production information and technology • Weak Agricultural extension system. • Inadequate dissemination of market information
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<ul style="list-style-type: none"> • Availability of at least 5 private and public large scale registered seed potato multipliers with cold storage facilities • Registration of medium scale seed producers by KEPHIS • Existing expertise in the potato value chain • New technologies in production • Increase in number of potato processing companies 	
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Opportunities	Threats
<ul style="list-style-type: none"> • Growing domestic, regional, and global market for seed, ware, and processed products • Existing opportunities to expand production to low altitude and marginal areas • High potential to mitigate against food insecurity and improve nutrition • Prospects for employment creation • Existing potato processing opportunities for diverse products in starch, alcohol, flour, soaps, baby feeds, animal feed and detergents • Liberalized market for seed and ware potatoes • Forward integration by farmers • Changing eating habits in favor of potato and potato products (salads, bhajia, chips, crisps, and Chevda) • Potential origin branding of the potato 	<ul style="list-style-type: none"> • Effects of climate change • High incidences of pests and diseases and emerging ones • Inadequate land for rotation due to fragmentation and change of use • Reduced income of producers due to exploitation by marketing agents • Encroachment on research and seed multiplication land • Porous international borders allowing illegal entry of seed and ware potatoes • Political instability

<ul style="list-style-type: none"> • Opportunity to develop an alternative marketing channel through use of Automated Marketing Information Systems (AMIS) such as <i>Viazi Soko</i> 	
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Major Stakeholders and Their Roles

To fully implement the NPS, there must be concerted efforts by all stakeholders working together, complementing each other’s efforts, to achieve the desired goals. Table 2 highlights some of the stakeholders and the roles they play in the industry.

Table 3: Major Stakeholders and Their Roles

Name of stakeholder	Core function	Role in potato industry
A.) Value Chain Actors		
i.) Seed Potato Producers and Multipliers		
Private Aberdare Technologies, Potato Service Africa (Agrico East Africa), Kisima Farm Ltd., Stokman Rozen, Jancota, Kirinyaga Seeds, Singus, Suera Farm, GTIL, Egerton University, Wanfa Tehnologies, Danespo, Baraka Agricultural College	Production of high-quality seeds	<ul style="list-style-type: none"> • Seed production and multiplication

Public Agricultural Development Corporation (ADC), KALRO Tigoni	Production of high-quality seeds	<ul style="list-style-type: none"> • 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 centers
ii.) Ware Potato Producers		
Farmers – small scale and large-scale producers	Primary producers	<ul style="list-style-type: none"> • Production of ware potatoes
Farmer Groups, Cooperatives and Unions	Production, advocacy, and capacity building farmers	<ul style="list-style-type: none"> • Collective aggregation of potatoes • Collective purchase of inputs and services for farmers • Advocate for farmer issues
iii.) Input Suppliers		
Amiran, Bayer EA, Corteva, Elgon Kenya, Koppert Biological Systems,	Formulation, package, distribution, and retail of	<ul style="list-style-type: none"> • Sale of agrochemicals and other inputs to maximize production
Lanclan, UPL, Pieper Farms, Twiga Chemicals, UPL, Omnia Retail, Yara, Baraka, etc.	quality farm inputs	<ul style="list-style-type: none"> • Provision of extension services • Organize demonstration in conjunction with other actors
Agro-dealers	Stock and sale of quality farm inputs in production areas	<ul style="list-style-type: none"> • Sale of agrochemicals and other inputs to maximize production
iv.) Potato Machinery and Equipment		
County Agricultural Mechanization Service (AMS), Agrimech, FMD, Tinga, Toyota Tusho etc.	Provision of Potato machinery and equipment	<ul style="list-style-type: none"> • Offer Mechanization services • Sale of potato machinery and equipment

v.) Storage Solutions		
Local artisans, Tolsma (Agent-Ag- rico EA) Omnivent (Agent-Kenya Highland seed) Geerlof	Provision of Seed and ware potato storage solutions	<ul style="list-style-type: none"> • Constructions and monitoring of store operations and quality of stored potatoes
vi.) Potato Buyers		
Traders, hotels, dealers, eateries, agents, direct consumers, Viazi Kings etc.	Provide market for ware potato	<ul style="list-style-type: none"> • Buy ware potatoes either directly from farms or through agents
vii.) Processors		
Potato Processors (Sereni fries, GAEA Ltd, Propack, Norda, Tropical heat, Redgate etc.)	Product devel- opment Value addition	<ul style="list-style-type: none"> • Potato processing and marketing • Provide diversified market for farm-ers produce • Capacity building of producers • Increase the shelf life of potatoes • Fortification of products and palat-ability
viii.) Transporters		
Logistic firms (Vi- azi Kings), truck and lorry owners etc.	Transport ser- vices	<ul style="list-style-type: none"> • Transport ware and seed potatoes from production zones to consump-tion zones
B.) Enablers		
MoALF&C	Coordinate formulation and implementation of agricultural policies	<ul style="list-style-type: none"> • Policy development and implemen-tation • Official release of new varieties
		<ul style="list-style-type: none"> • Training of staff and farmers • Technology transfer

County Govern-ments (Ministry or departments of Agriculture,	Provide quality extension ser-vices and participate in	<ul style="list-style-type: none"> • Provision of extension services • Policy implementation
Livestock, Fisher-ies, Cooperative, Trade etc)	the formulation and imple-mentation of agricultural policies	<ul style="list-style-type: none"> • Training of staff and farmers • Technology transfer • Cooperative services and support • Trade services and support
AFA	Regulate devel-op and promote food crop industry	<ul style="list-style-type: none"> • Develop and promote marketing chains at national, regional and international levels • Registration, licensing and regula-tion of the industry players • Liaise with County Government to enforce compliance • Participate in policy development • Advice Governments on food securi-ty issues
		<ul style="list-style-type: none"> • Advice government on issues of pest and disease for quarantine purpose • Capacity building • Collaborate with county Govern-ments to Identify research agenda and recommend
KEBS	Develop and maintain standards and practices of pro-cessed products	<ul style="list-style-type: none"> • Develop and register the standards involving production, processing, marketing and to ensure compliance to the standards • Capacity building on standards • The focal point for CAC on food safety
KEPHIS	Provide regula-tory and adviso-ry services	<ul style="list-style-type: none"> • Variety testing National Performance Trials- (NPT, Distinctness, Unifor-mity and Stability (DUS) tests • Granting of plant breeder's rights • Seed certification,

		<ul style="list-style-type: none"> • Phytosanitary and quarantine, • Soil and irrigation water analysis • Inspections of potatoes for export and import. • Technology transfer and capacity building on seed production
Ministry of Devolution and Arid and Semi-Arid Lands	Provide and maintain marketing infrastructure Coordinate food relief services	<ul style="list-style-type: none"> • Support financing special groups • Support food security initiatives
Ministry of Environment and Forestry (MoEF), Ministry of Water & Sanitation and Irrigation (MoW-SI)	Formulation, review and implementation of policy on the water sector, and reclamation	<ul style="list-style-type: none"> • 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
Ministry of Health (MOH)	Ensure hygiene in market and public places	<ul style="list-style-type: none"> • Protect Kenyan potato consumers from health risks of contaminated produce and products. • Custodians of food safety regulations • Capacity building on good nutrition and hygiene
Ministry of Information Communications and Technology, Innovation and Youth Affairs	Develop and implement policies on communication	<ul style="list-style-type: none"> • Provide telecommunication services • Facilitate availability of suitable ICT platforms in the industry
Ministry of Transport Infrastructure Housing Urban Development and Public Works	Development of road infrastructure Support infrastructure for import and export	<ul style="list-style-type: none"> • Support construction, maintenance, and rehabilitation of roads

National Environment Management Authority of Kenya (NEMA)	Develop and implement environmental policy	<ul style="list-style-type: none"> • Conduct Environmental Impact Assessment (EIA) and catchment area conservation • Approve and enforce regulations on EIA for big projects (Irrigation scheme)
Pest Control Products Board (PCPB)	Regulate the importation, manufacture, distribution and use of agrochemicals	<ul style="list-style-type: none"> • Advise and provide information on approved and prohibited agrochemicals as dictated by the environmental, health and market concerns • Register agrochemicals and stockiest
		<ul style="list-style-type: none"> • Register agrochemicals and stockiest • Carry out efficacy test for new products • Monitoring of label use
Kenya National Farmers Federation (KENAFF)	Promote, advocate and lobby for the farmer and related sector issues	<ul style="list-style-type: none"> • 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
E- platforms for information management and marketing – Viasi Soko digital platform, e-voucher input programme by GoK	Linkages, information dissemination, data aggregation, reports	<ul style="list-style-type: none"> • Dissemination of information • Capacity building of the farmer organizations • Farmer and buyer linkages

C.) Donors and Development Partners		
Irish Embassy, The Netherlands Embassy, British Embassy, etc	Financial sup- port and policy direction	<ul style="list-style-type: none"> • Funding for the development of the potato industry • Support research and advocacy
		<ul style="list-style-type: none"> • Promoting growth of the sector through targeted initiatives • Promote trans-border trade
Alliance for Green Revolution in Af- rica (AGRA), GIZ, K-N seed potato Project, United States Agency for Inter- national Develop- ment (USAID), JICA, etc.	Support gov- ernment in potato industry development Facilitate donor –government linkages	<ul style="list-style-type: none"> • Funding for the development of the potato industry • Support transfer of technology • Capacity building • Offer scholarships for specialized training • Provision of equipment (s) • Development of germplasm • Funding for research • Facilitate and organize exchange programs • Facilitate and support sector linkages
D.) National Academic and Research Institutions		
KALRO- Tigoni	Potato research and develop- ment	<ul style="list-style-type: none"> • Development and dissemination of suitable technologies • Provision of basic seed potato
		<ul style="list-style-type: none"> • Research on pest and disease management • Maintenance and supply of breeder's seed • Disseminate research findings to the MOALF&C and other stakeholders • Capacity building on seed production and marketing • Variety testing/breeding to ensure 1 to 2 varieties available for release by MOALF&C every 2 years

KIRDI	Research and design on processing technologies; business incubation	<ul style="list-style-type: none"> • Research, develop and fabricate machines and equipment for processing potato into various products • Technologies transfer • Capacity building
Universities and Colleges of Agriculture e.g JKUAT, Egerton University, UoN, Masinde Muliro University of Science and Technology	Manpower development Research and dissemination of technologies	<ul style="list-style-type: none"> • Provide courses that enhance capacity in potato industry • Product research and development • Capacity building • Conduct basic research • Introduction of new germplasm and breeding
E.) International Research Organization and International Non-governmental Organizations		
International Centre for Insect Physiology and Ecology (ICIPE)	Research in insect and arthropod pests Regional referral center on identification of insects	<ul style="list-style-type: none"> • Develop surveillance protocols for insect pests • Capacity building • Mobilize funds for insect pests' studies • Develop and disseminate IPM technology to control crop pests (Biological control) • Develop tools and strategies to control insect pests and disease vectors
Netherlands Development Organization (SNV), International Fertilizer Development Centre (IFDC),	Contribute towards the development of the industry in collaboration with other stakeholders in provision of relevant information	<ul style="list-style-type: none"> • Provide support, training and collaborate with industry stakeholders

International Potato Centre (CIP)	Research in potato germplasm conservation, and exchange Develop advanced potato clones	<ul style="list-style-type: none"> • 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
F.) Financial Institutions and insurance companies		
Financial Institution (e.g. Agricultural Finance Corporation (AFC), Equity bank, K-Rep bank, The Co-operative-bank, Family Finance Bank), Tower	Provide financial and insurance services	<ul style="list-style-type: none"> • Avail banking and credit facilities and all the Potato VC actors
Sacco, Siraji Sacco, Momentum company, Vision Africa, and Champion Insurance companies (eg Acre Africa, APA, UPA etc)	Provide insurance policy to potato farmers	<ul style="list-style-type: none"> • Develop appropriate financial (banking and insurance) products modelled for the Potato VC actors • Capacity building on Financial management • Provide insurance cover to farmer groups who have financial support • Support individual farmers with insurance cover • Sometime use weather-based index to provide insurance cover
G.) Business Member Organizations		
Agricultural Council of Kenya (AgCK)	Lobby forum for its members	<ul style="list-style-type: none"> • Capacity building of actors • Lobby platform
Agriculture Industry Network (AIN)	Member lobby platform	<ul style="list-style-type: none"> • Lobby member interests at highest level

Agriculture Sector Network (ASNET)	Apex Body for Lobbying in Agriculture	<ul style="list-style-type: none"> • Lobby for potato issues at the highest levels of government and inter-government forums
		<ul style="list-style-type: none"> • Capacity building of member associations
National Potato Council of Kenya (NPCK)	Plan, organize and coordinate potato value chain activities	<ul style="list-style-type: none"> • Providing forums for engagement, planning, networking, and solution search, • Lobbying and advocating for supportive policy and legal framework, • Providing any services that will enhance businesses in the industry and • Promoting adherence to regulations and adoption of good standards and best practices
H.) Potato Traders Associations		
Seed Trade Association of Kenya (STAK)	Support seed merchants	<ul style="list-style-type: none"> • Support businesses of production and marketing of certified seeds
		<ul style="list-style-type: none"> • Lobby for favorable policy environment • Market intelligence for their members • Represent members in international fora
Potato Traders Associations (Meru potato traders, Wakulima potato traders, Nakuru potato traders and other County based potato traders' associations)	Support the businesses of potato traders	<ul style="list-style-type: none"> • Support businesses of potato traders within and outside the counties • Lobby for favorable policy environment • Support members in savings and financial support

I.) Media		
Mainstream media e.g. newspapers, T. V's and Radio	Provision of information	<ul style="list-style-type: none"> • Disseminate information • Educate the population
Social media e.g. Facebook, twitter, WhatsApp	Provision of information	<ul style="list-style-type: none"> • Disseminate information • Educate the population

3.0 STRATEGIC ISSUES AND OBJECTIVES

3.1 Introduction

To achieve sustained growth in the potato industry, strategic issues confronting the sector must be identified and addressed to create the desired change (livelihood improvement) in an equitable way. By delineating the strategic issues, the new strategic plan (NPS 2021-2025) sharpens the focus for the potato industry for the next 5 years. Continuous interventions on good agricultural practices, availing suitable potato varieties and provision of appropriate supportive infrastructure, will contribute towards a significant improvement in the livelihoods of all the stakeholders in the potato value chain. It is envisaged that the MOALF&C, the National Government and County Governments through the necessary institutional, policy and legal frameworks, will provide an enabling environment to stimulate the process for sustainable growth and development in the potato industry.

This strategy identifies the following strategic Issues:

- 1.) Institutional, legal, and regulatory framework
- 2.) Research in the potato industry
- 3.) Variety development and seed production
- 4.) Low potato production
- 5.) Post-harvest management, value addition, marketing, and utilization
- 6.) Import, export, and trade
- 7.) Use of data management tools and participation of youths and women in the industry
- 8.) Industry coordination, collaboration, and networking
- 9.) Industry resource mobilization

3.2 Strategic Issue 1: Institutional, Legal, and Regulatory Framework

Institutions Framework

The public institutions in the industry lack adequate and “consistent” human, financial and physical capacity to cope with the high services

demanding by the growing industry. Furthermore, farmer associations are few, weak and ineffective especially in terms of running potato businesses. Though NPCK, the industry's coordinating platform, has been coordinating activities of the industry, it faces several challenges such as inadequate financial muscle to effectively carry out its mandate. Its *Viazi Soko* platform that aids farmers get access to seed and ware potato marketing information needs more strengthening.

Legal and Regulatory Framework

The general crop legal and regulatory framework is biased towards cereals. Potato industry is somehow different and thus requires a different approach if meaningful framework is to be developed. From seed, production to marketing the sector has suffered due to a framework that does not necessarily address the issues. Biased seed policy and marketing all make the operations in the industry complicated. It is therefore necessary for stakeholders to develop a legal framework that will address these issues after carefully considering the different nature of the crop.

The enactment of The Crops (Irish Potato) regulations 2019 marked a big milestone in the industry though full implementation is yet to be realized. Indeed, the industry has witnessed a big improvement in potato packaging from the 280 Kg extended bag to between 70 and 120 Kg bags with the recommended weight being 50kg. Adoption of sales per kg has taken root especially with bulk buyers such as processors and other organized market outlet albeit to a limited degree. Establishment of collection centers, registration of growers, and other value chain actors is yet to be accomplished.

The finalization of the Root and Tubers Strategy which outlines the Government's roadmap on the development of a vibrant root and tuber crops industry is a boost to the potato industry. The updating and finalization of the Seed Potato Standard KS 2077:2019 by the propagation materials Technical Committee under the guidance of the Standards Projects Committee, and in accordance with the procedures of the Kenya Bureau of Standards, sets the standards for seed potato pertaining to Sanitary and Phytosanitary of seed potato production and looking into issues of tolerance levels for pests and diseases during storage and the quality requirements of seed lot.

Restricting regulations on registration of new varieties, especially processing varieties seems to be limiting introduction of alternative varieties. Use of yield as the major determinant and control and failure to factor in other varietal attributes limits registration of varieties for different utilizations.

Private accreditation was meant to quicken and improve efficiency in the process of seed certification by complementing the efforts of KEPHIS. Its impact has not been fully felt in potato industry though it is expected that with more concerted efforts seed inspection processes will be streamlined further.

Strategic Objective 1: Strengthened Institutional, Legal and Regulatory Framework

This is necessary for creating an enabling environment for a resilient and sustainable potato value chain. Policy levers are needed that will catalyze the favorable interactions for socio-economic growth.

The following interventions are proposed:

Institutional Framework

- i.) Support improvement of human, physical and financial capacity of the public institutions.
- ii.) Review the laws supporting the institutions to be in line with the current business situation.
- iii.) Establish, recognize, strengthen, and support industry associations at all levels.
- iv.) Strengthen PPP in seed potato production
- v.) Strengthening linkages/communication between regulatory institutions and industry players through relevant forums.
- vi.) Lobby for both National and County government to avail more land for potato seed multiplication including opening irrigated land.

Regulatory Framework

- i.) Lobby to develop regulations for seed potato production and other vegetative planting materials.

- ii.) Support operationalization of private seed certification services and promote investment in private testing laboratories through subsidy and technical support.
- iii.) Lobby for reduction/harmonization of potato levies and other taxes both at national and county levels
- iv.) Development and implementation of county potato strategies
- v.) Support full implementation of enacted regulations
- vi.) Develop and promote standards and code of practice for industry actors

3.3 Strategic Issue 2: Research in the Potato Industry

While progress has been made in the development and registration of new varieties, there is a gap in complementary agronomic packages that would optimize production, as the new varieties are not fully adopted. Additionally, unavailability of appropriate and affordable machinery and irrigation systems for small-scale producers remains unaddressed. Even when available, certain technologies remain underutilized due to inadequate flow of information among the actors.

Whereas the processing segment of the value chain has seen modest growth, lack of appropriate equipment is a key hindrance to many small-scale processors while importation of sophisticated equipment remains prohibitive. This partly accounts for the narrow potato product range that still characterizes the value chain in Kenya.

As research efforts yield solutions to existing pest and disease problems, including the revolutionary LAMP based PCR test for rapid detection of bacterial wilt, new challenges have emerged. With reference to the Potato Cyst Nematode whose presence in the local potato production systems compromises yields and introduces new obstacles in the supply of certified seed potato. It has become mandatory to have a favorable soil and tuber sample test result to comply with seed potato certification requirements. The new rules have come with additional production/regulatory costs.

About potato blight control, the focus has been on the use of curative fungicide formulations whose indiscriminate use poses in public health, food safety and the environmental concerns. Additionally, it has led to

the development of pesticide resistant populations in crop production systems and a simultaneous loss of effectiveness of the available active substances. The subject of risk of introduction of regulated/quarantine pests and diseases through seed tuber imports still dominate discussions on the national seed potato agenda. Whereas it is recognized that there are risks involved in tuber import, it is agreed to concur with international practice in seed certification to guide the adaptation of tolerance limits for those pests and diseases in the standards for seed potato. Such adaptation of tolerance limits should go hand in hand with the relevant management strategies to control further spreading.

Strategic Objective 2: Enhanced Research in the Potato Industry

Technological innovations aimed at increasing productivity, value addition and marketing of potato can play an important role in enhancing the contribution of potatoes to food and nutrition security. As a result of technological advancement in the industry, the following interventions are proposed:

- i.) Conduct research in appropriate agronomic packages (soil fertility, appropriate varieties and 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 and equipment for mechanization, irrigation, value addition and storage
- iii.) Promote and disseminate new potato innovations and technologies
- iv.) Package new products, innovations, and technologies to facilitate promotion/up-scaling and adoption
- v.) Market research and product development
- vi.) Enhance research in potato waste management
- vii.) Support countrywide surveillance to map prevalence and distribution of the most important potato pests and diseases to design management strategies to control spreading
- viii.) Enhance research on control and management of existing and emerging pests and diseases of potato in the context of health, food safety and environmental concerns

- ix.) Develop and promote tools for rapid disease detection including Loop mediated isothermal amplification (LAMP) and genome sequencing (PCR)
- x.) Develop and promote tools for rapid soil fertility analysis and management
- xi.) Develop and promote tools for rapid variety identification to support early generation seed development enterprises
- xii.) Develop tools for weather forecasting and disease decision support systems
- xiii.) Develop and implement a mechanism for tracking technology dissemination and adoption
- xiv.) Research on and promote production of potato with greater tuber concentrations of vitamins and minerals to increase dietary intakes such as Zinc

3.4 Strategic Issue 3: Potato Variety Development and Seed Production

Seed availability and access remains a challenge for many especially the small-scale farmers. Despite the many varieties developed and released, many farmers are not accessing certified seed, though there have been some slight improvements. This is because there is lack of foundation seed thus multiplication becomes a challenge. Further, the perishability nature makes storage hard and distribution complicated because the conventional distribution channels cannot be used. A good and efficient distribution needs heavy investments such as building cold stores. All these factors make accessibility hard. The long variety release process including NPT's is also cumbersome. All these factors contribute to the low accessibility and use of certified seed.

The industry is still experiencing inadequate supply of good quality seed of preferred varieties. Whilst potato breeding in Kenya requires strengthening, seed companies interested in seed potato bulking need more capacity building to consistently produce and supply high quality seed. National potato research in the country is carried out by KALRO-Tigoni Potato Research Centre in collaboration with the CIP and local universities while testing and evaluation of the breeding material prior to submission of potential varieties to KEPHIS for evaluation and release is a function of

KALRO-Tigoni. Additionally, KALRO cleans and maintains varieties and is also charged with the responsibility of supplying commercial potato varieties breeders' seed to ADC and other private seed multipliers.

With structural changes that took place in the early 1990s, e.g. land alienation and allocation of research land to private individuals resulted in change of ownership of big portions of land for both KALRO Tigoni and ADC Molo causing shortage 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 inability to adequately serve the industry.

Enhanced trade among countries has seen in the past 8 years, the Netherlands introduce 34 varieties in compliance with the mandatory NPTs conducted by the KEPHIS as part of bilateral agreements that provide the guidelines on prevention of possible introduction of quarantine pests and diseases. Other varieties from Ireland and Scotland are still under NPTs. These initiatives have seen the number of listed varieties grow to over 60 (NPCK: Potato Variety Catalogue, 2019). There is on-going research on hybrid True Potato Seed (TPS) that may improve the way seed is handled, stored, and transported. Despite the above interventions, the demand for certified seed by farmers has not been met. The supply of certified seed stands at 6,700 T against a demand of 30,000T, (TechnoServe 2018).

The sector has equally seen emergence of three seed systems that require strengthening. The first comprises certified seed potato production and delivery system involving public (local) varieties from KALRO and a complementary investment in TC labs, hydroponics and aeroponics to produce mini tubers which are multiplied into pre basic seed. Registered seed merchants buy pre basic and basic seed to multiply further into C1, C2 and C3 before selling to ware potato farmers. Groups of farmers without own licenses may use KALRO license subject to vetting and approval as seed growers then multiply and sell seed to other farmers. The main challenge is the low volumes of basic seed for bulking and unavailability of pathogen-free land for seed multiplication.

The second system is characterized by importation and multiplication of seed potato through restricted licensing of potato varieties from Europe.

This system has large-scale businesses in Kenya who negotiate partnerships with seed houses in Europe to support seed production in Kenya. There is heavy investment in machinery and seed store thus the need for strong partnerships. Starter material is imported either as TC or as field-bulked seed, which is multiplied under close supervision of KEPHIS International Standards for Phytosanitary Measures (ISPM 38). Once certified, it is then sold to farmers.

The third system seeks to strengthen the alternative seed supply mechanisms in response to the high cost of certified seed. In this system, farmers are being capacity built to improve on the way they handle their own seed. Starter material could be certified seed or apical cuttings. From the apical cuttings, farmers obtain big marketable tubers for sale as ware potato while the smaller tubers are kept as seed. The assumption is that all tubers are of high quality resulting from good crop rotational plans and GAP. In both cases farmers use own seed up to 5th season until yields begin to decline.

Strategic Objective 3: Promote Variety Development and Seed Production

Changes in consumer tastes and preference and diversification of potato products demand continuous improvement in availability of more potato varieties. Consequently, the following interventions are proposed:

- i.) Strengthen the breeding programs in the country through personnel capacity building and infrastructure improvement
- ii.) Develop models for private investors to adopt public varieties/advanced breeding lines on short term exclusive rights basis to allow for cost sharing in the variety testing and registration process
- iii.) Leverage investments and capacity to increase starter material for early generation seed development potato through Public Private Partnerships
- iv.) Support importation of early generation starting material and/or tubers to boost seed volumes.
- v.) Research options for government to subsidize private seed growers in the production of certified seed

- vi.) Develop/introduce climate resilient varieties for production in the hot lowland under rain fed and irrigated conditions
- vii.) Promote officially released potato varieties that are high yielding, resistant to diseases and suitable for various utilization demands
- viii.) Develop models for PPP to strengthen seed potato production, certification, storage and sale with county governments, donors, and seed companies
- ix.) Explore and scale disruptive agricultural technologies
 - Promote adoption of digital seed inspection and certification schemes
 - Adopt use of modern technology such as drones to ease inspection and pest surveillance.
- x.) Establish aggregation and logistics platforms to reach farmers with seed at the farm gate at lower costs

3.5 Strategic Issue 4: Low Potato Production

Besides being in the national agenda, potato industry tends to perform below its potential. Potato production is predominately rain fed and mostly grown in small pieces of land making it a subsistence crop. More so, there is poor adoption of production technologies and poor crop management practices. Productivity has remained below the potential level with significant fluctuations due to inadequate supply and use of quality seed of preferred varieties, low accessibility and use of quality fertilizers, crop protection products and other inputs.

As a result of continuous production in small pieces of land, there are poor rotation practices resulting in lower yields and high prevalence of pests and diseases. Efficient potato production requires access to substantial land areas for rotation, investments in quality seed, mechanized farm activities, disease control, and fertilization protocols. There is need for investment in storage facilities for both seed and ware potatoes at production sites. Nevertheless, production is only likely to increase under certain economies of scale. Farmers with access to bigger land areas with higher investment potential are likely to produce higher yields in a more economically viable manner. Hence, there is need to promote potato growing by large-scale farmers and develop the appropriate incentive mechanisms.

Effects of climate change; rising temperatures, erratic rainfall patterns with increased frequency of extreme weather events such as droughts and floods as well as outbreak of pests and diseases affect the sector negatively. Increased instances of crop damage and failure, reduced yields, poor tuber quality, and increased land degradation affect the way potato business is being carried out. Concerted efforts by stakeholders to increase awareness on effects of climate change and support farmers to implement activities that will help them adapt, cope, resist, mitigate or become more resilient to climate change shocks should be put in place.

Strategic Objective 4: Increased Potato Production

To feed the increasing population and consistently supply raw material to industries, potato production and productivity must be increased. The following interventions are therefore, proposed:

- i.) Enhance timely access to quality seed and other inputs (at competitive prices)
- ii.) Capacity building on appropriate agronomic practices)
- iii.) Capacity building on entrepreneurial skills in agriculture
- iv.) Promote appropriate technologies- Irrigation, mechanization (Ridgers, planters, harvesters)
- v.) Promote large scale potato farming (to achieve economies of scale) and investigate incentive mechanisms for large scale investment in ware potato production
- vi.) Promote contract farming between the farmers and various markets reliable supply of quality raw materials
- vii.) Control and management of wide spread of pests and diseases
- viii.) Enhance safe and effective use of agrochemicals
- ix.) Expand production in non-traditional potato growing areas

3.6 Strategic Issue 5: Post-Harvest Management, Value Addition, and Marketing

The hotspots for potato Post-Harvest Losses (PHL) are during harvesting, sorting/grading, and storage (SNV, 2015). The losses reported are between 20-40% (Kaguongo, 2014). Unfortunately, most farmers can neither

distinguish between volume and value losses nor estimate how much is lost at each step in the value chain and therefore are unable to evaluate potential returns. Use of potato harvesters, both handheld and heavy machinery and promotion of storage solutions for different climatic conditions are meant to reduce losses to minimal levels though lack of pre-harvest credit limits mitigation against potato PHL.

Approximately 10 % of potato produced in Kenya is processed with few formally registered processors and many other cottage level processors. Most of the cottage processors are not registered and difficult to identify, but still provide markets for potato. Additionally, there are limited processed potato products, most of which are potato-based snack foods such as crisps and Chevda. Other products include the raw fresh cuts or precooked chips. Utilization of potato waste (peels) has been limited to pig feed with more unexploited opportunities on waste utilization. Supply of potatoes to most processors, in most cases, is not in sync with what their market demand. Apart from consistent supply of quality potatoes, processors are keen on potato attributes such as dry matter content, sugar content, size, preference for some varieties, maturity, and freshness of potatoes to enable them to supply their customers with products that are consistent in taste and form (SNV, 2015). However, as the formally registered processors pay attention to the quality of potatoes, the upstream of the supply chain seems to be keen on availability of potatoes, rather than quality and attributes of potatoes and thus becomes the main driver of production and trade. Seasonality of potato production and marketing also contributes to the sharp fluctuation of potato prices between glut and scarcity periods. This necessitates processors to buy and store potato up front, for up to three months ensuring that there is consistent supply to their customers. However, capital to finance purchase of such volume as well as appropriate storage facilities remains a big challenge to the industry. In recent years the industry has seen increased volume of imported potato products such as crisps and frozen chips for the international fast-food chains and restaurant to try and meet the high-quality expectations of their customers. This could, partly, be attributed to the mismatch between what the markets want and what the farmers produce (Attributes of potato varieties). Farmers produce potatoes if they have seed and not necessarily peg their production on what the market wants. Consumption of potato has been on the upward trend as it is considered as one of the nutritious

foods containing vitamins (Vitamin C, Folate and Vitamin B6) minerals especially potassium, proteins, sugars, fiber, and fat. However, availability of these nutrients depends on how potato is grown and cooked. Even though there are a few potato recipes, these recipes are not fully explored limiting the way potato is consumed.

While potato marketing is complex, with no barriers to entry and exit, it attracts several actors namely: growers, marketing agents, transporters, wholesalers, processors, and retailers each player adding value as the product moves from farm to fork. Though considered minimal, the accrued economic benefit because of adding value is their incentive for participating in the value chain.

Due to the bulkiness and perishability nature of potatoes, marketing agents, operating in production areas and in urban markets control most of potato marketing where they manipulate prices to the disadvantage of the growers. Majority of the farmers lack the ability to influence prices of their produce as they have inadequate market information, lack proper storage facilities, and do not undertake collective marketing as they lack aggregation centers with requisite equipment like weighing scales and grading equipment. Poor flow of market information along the potato value chain (information asymmetry) on specific potato variety requirements aligned to the quality of end products desired by different markets contributes to market inefficiency. Marketing agents tend to have current information on what is happening in different markets including market prices, demand, and supply of ware potato in different markets but rarely disseminate the information to the recipient. This information is crucial especially if farmers must expand and access other high-end markets. As a result of their nature, they tend to exhibit exploitative tendencies hence their dislike by most farmers.

Apart from seasonality in potato production dictating the price trends, quality of the produce has equally shaped how pricing is undertaken. Since the enactment of the Irish potato regulations, pricing per 50kg bag has improved significantly with a bag selling at Ksh 800-900 (farm gate price) as opposed to an offering of Ksh 500- Ksh 1000 per extended bag of between 130kg to 250 kg, before enactment of the regulations. Though not fully implemented, progress has been made to ensure 100% compliance.

At the market level, challenges such as inadequate storage facilities, poor market facilities, inadequate space for trading and poor working condition contributes to high levels of potato waste (diseased, rotten, damaged, and spoilt potatoes tubers), reduces business profits and compromises on food safety.

Strategic Objective 5: Improved Post-Harvest Management, Value Addition and Marketing

While Postharvest management of potato is an important factor, not only in preventing postharvest losses, but also in maintaining potato quality, safety, and nutritional quality. Value addition, on the other hand, enhances the market value, marketability, and desirability of potato and potato products. To achieve the above, the following interventions are proposed:

Post-harvest Management

- i.) Promote agribusiness and entrepreneurship in potato industry
- ii.) Promote clear and viable business models
- iii.) Enhance storage solutions and finalize guidelines for storage facilities
- iv.) Capacity building on potato store management
- v.) Establish and strengthen Public Private Partnerships (PPP) for agribusiness development.
- vi.) Introduction of warehouse receipt system

Value Addition

- i.) Document, adopt and avail appropriate technologies for value addition
- ii.) Establish and or increase business incubation centers
- iii.) Create linkages and promote contracts between farmers and processors
- iv.) Support establishment of quality assurance and traceability systems.
- v.) Promote utilization of potato waste as animal feed and other products
- vi.) Introduce home economics educations to farmers and consumers

Marketing

- i.) Improvement of market infrastructure (user friendly grading, weighing, packaging systems etc) that will also cater for people with special needs.
- ii.) Formation and capacity building of potato farmers' groups or MSMEs (aimed at cluster led production, aggregation, and marketing)
- iii.) Develop aggregation centers
- iv.) Create awareness on food (potato) safety especially on the health effects of consuming greened, bruised, or sprouting potatoes.
- v.) Enhance access to Market information and support potato price information provision through FM radio and other means
- vi.) Introduction of modern potato transportation systems.
- vii.) Promote adoption and use of maximum 50 kg packaging and pricing by weight

3.7 Strategic Issue 6: Import, Exports, and Trade

The Government in its pursuit to promote potato production in the country, has introduced new potato varieties, streamlined production of certified seeds and disease resistant cultivars, and initiated a commercially oriented Seed Potato Production Programme to produce and distribute seed potatoes to farmers. Seed is one of the most important farm inputs and a farmer's harvest depends a lot on the quality of seed planted among other factors.

Unfortunately, potato production has remained almost stagnant for the last 6 years due to inadequate supply of quality planting materials, marketing constraints, high losses due to pests and diseases, poor post-harvest management practices and low levels of processing, among others.

Kenya, being an agricultural country, is on the forefront of promoting the export of Irish potatoes in the regional and international markets and encourages the importation of seed potato to be grown by the local farmers. Substantial amount of seed potato has been imported into the country in the recent past. However, seed and ware potato produced in the country is largely utilized within the country and only small quantities

are sold to neighboring countries through cross border trade or exported to far countries as processed potato products.

Strategic Objective 6: Enhanced Export, Imports, and Trade

Globalization has made trade among countries be feasible with Kenya being a member of several international organizations, conventions, and treaties, which deal with the regulation of seed trade. Among these organizations are the Organization for Economic Cooperation and Development (OECD), a seed scheme that deals with certification of seed in international trade; the International Seed Testing Association (ISTA) that develops globally recognized standard procedures for seed sampling and laboratory testing; International Union for the Protection of New Varieties of Plants (UPOV) which provides breeders of new plant varieties with intellectual property protection while the International Seed Federation (ISF) provides seed companies with trade and arbitration rules. Complementary to these are international conventions and treaties hosted by the Food and Agriculture Organization of the United Nations (FAO) that provide the international regulatory framework for seed trade, including plant health and Phytosanitary measures, access, and benefit-sharing under the international treaty for plant genetic resources for food and agriculture and use of pesticides.

There exist regional organizations that have also harmonized their regulations to facilitate trade among member countries. COMESA, EAC and Southern African Development Community (SADC), each of these bodies with differing membership, have harmonized regulations especially on variety registration thus streamlining and shortening the procedures for registration of new varieties, creating a seed enabling environment, promoting economies of scale in seed supply and stimulate private seed enterprises through cross-border trade. Though not fully implemented, they can determine availability of high-quality seed at the regional markets and avoid illegal cross border seed trade.

At national level, stakeholders under the guidance of Kenya Bureau of standards (KEBS) have developed and published standards for ware potatoes and Irish potatoes value added products specifications. A code of practice on fresh produce has been developed but not widely adopted. However, more needs to be done to ensure our locally produced potatoes meet the internationally set standards to be acceptable in the international

markets such as the European Union and other developed countries. Unfortunately, observance and enforcement of the set standards remains weak due to lack of appropriate handling and tracking mechanisms at marketing points. Lack of compliance to Sanitary and Phytosanitary (SPS) requirements has greatly limited access to external markets even during times of glut.

Very little promotion has been done for Irish potatoes in the domestic and international markets and yet there exist many markets across the counties, regionally and internationally that have remained underutilized. The following interventions are proposed to stimulate Potato trade:

- i.) Create awareness of harmonized regional regulations and international standards to support trade
- ii.) Follow up on finalization of regional standards
- iii.) EAC standards not finalized
- iv.) SPS protocols not signed by Tanzania
- v.) Monitor import/export volumes of potato products
- vi.) Support improved linkages and communication among countries
- vii.) Review and strengthen seed and ware potato export and import procedures
- viii.) Identify opportunities in export of ware and seed potato
- ix.) Promote locally produced potatoes and potato seed in the international markets.
- x.) Improve the quality standards of the locally produced potatoes
- xi.) Conform to the existing harmonized regional produce and product standards to attract formal trade.
- xii.) Strengthened the Kenya Export Promotion and Branding Agency (KEPROBA) to support those farmers who would wish to export their produce.
- xiii.) Improve product packaging for the locally produced potatoes to be more attractive in the regional and international markets

- xiv.) Modernization of the local market infrastructure by the government by providing the required facilities such as cold storage, grading, weighing, packaging facilities.

3.8 Strategic Issue 7: Potato Value Chain Data Management and Involvement of Youths and Women in the Industry

There is inconsistency in the way data in the industry is managed. The industry is faced with inadequate relevant, complete, accurate and meaningful data that can help in planning, analysis of trends, and evaluate its overall performance. There is a lot of inconsistency in production figures for both ware and seed potatoes and especially in terms of quantities produced (data collection, collated, trend analysis, volatility, storage and disseminated) right from the counties to national government. Access to data and information on potato traded volumes, trend analysis and projections, main markets, actors, processed products, imports, and exports of various products is still a challenge to the industry.

Without proper data, analysis of risk in potato production becomes obscure. Inadequate information on impact of climate change in potato production, rain fed versus irrigated potato production, efficiency in production because of adopting new technologies among others makes it difficult to mitigate against risks in potato production. Depending on the need for the data, stakeholders collect their own data using varied tools and sources leading to inconsistent figures which do not help the industry make strategic planning and investment decisions.

The involvement of youths and women have been minimal mainly due to social factors, slow uptake of appropriate technology in production, and limited access to finances. Further, some opportunities such as seed production, processing require high level skills and finances. The available financial institutions require some form of collateral before advancing finances to borrowers, but most youths and women do not have access to lands or other assets to be used as collaterals. This is an impediment for them to do any meaningful activity in the value chain. Women involvement has also been hampered by some restrictive practices in the value chain. These prohibitive practices include use of extended bags, cultural practices, labor intensive and capital-intensive

Despite the challenges some gains have been made where industry players led by NPCK have created forums where youths can learn about the

available opportunities. Further, NPCK and partners has been training youths as Farmer Service Providers on various aspects of production and marketing such as disease scouting, spraying, and helping farmers with digital marketing enabling them to earn some commission.

Strategic Objective 7: Improve Potato Value Chain Data Management and Participation of Youths and Women in the Industry

Improve Potato Value Chain Data Management

Relevant data is the basis of industry's information, knowledge, and ultimately the insight for correct decisions and actions in the sector. The importance of information is only as good as the source of information, how the data is collected, collated, analyzed, and disseminated. The 2019 Irish Potato Regulations, if implemented, provides opportunity and basis for data collection. For strategic planning and investment decisions, there is need to have proper potato data and information management system. The following interventions are proposed:

- i.) Establish baseline data indicators (seed and ware potato etc.)
- ii.) Build baseline information (Source, data collection tools, methods, costs, collation, analysis, and dissemination etc.)
- iii.) Develop Data Management Information System and/ or create linkage to existing data management system under relevant institution, ministry, or departments
- iv.) Establish ICT platform that is accessible to serve value chain actors
- v.) Develop and implement suitable tools for data collection in the value chain
- vi.) Share, processes and use relevant registration data from county and national governments.

Involvement of Youths and Women in the Industry

Involvement of youths and women in the industry has been low mainly due to social factors and unregulated industry making entry of youths and women hard. There is need to undertake deliberate measures to ensure increased involvement of youths and women in the industry. The following interventions are proposed.

- i.) Incubation and support of youth and women generated ideas across the value chain including training on seed production, linkages, and networking
- ii.) Support women and youth access land and others factors of production that are generally not easily available to them.
- iii.) Deliberate creation of support programs that aim at creating employment opportunities and increasing access to business finances for the youths and women
- iv.) Support innovative technologies that are friendly and capable of creating opportunities for youths and women
- v.) Identification and awareness creation of business opportunities for youth and women

3.9 Strategic Issue 8: Industry Coordination, Collaboration and Networking

The industry activities were not effectively coordinated for many years. Potato being a popular food crop, and being important in the county, attracted several stakeholders continued to carry out projects and other initiatives in isolation. This led to duplication of activities both at the county and the national levels.

Furthermore, there lacked point of reference and coordination mechanism to allow planned growth and development of the industry. For this reason, NPCK was created to help coordinate the potato industry. Since formation, NPCK has worked with national and county governments to develop action plans and coordinate stakeholders' activities aimed at transforming the industry. In the recent years, several stakeholders have been carrying out joint activities under the umbrella of NPCK thus building synergies and complementing each other.

Strategic Objective 8: Improved Industry Coordination, Collaboration, and Networking

There have been some improvements in coordination of the industry both at the county and national levels. NPCK has been leading efforts in establishments of county potato coordinating units which oversee the county potato activities. The units are headed by the county potato liaison officer. Such a system needs to be established and strengthened in all potato

producing counties and at the national level.

The following interventions are proposed:

- i.) Promote Public -Private Partnerships in the potato industry development
- ii.) Prioritization and Harmonization of industry initiatives
- iii.) Effectiveness in communication and coordination capability
- iv.) Organize forums for information processing and sharing e.g. trade fairs
- v.) Facilitate linkages between the farmers, research, extension, and the market.
- vi.) Establish implementation and monitoring committees at the national and county level

3.10 Strategic Issue 9: Industry Resource Mobilization

Despite the prominence and importance of potato as a food crop and income generating enterprise, potato has not attracted adequate funding from the exchequer. However, some counties have seen slight improvement in budgetary allocation though not to a significant proportion although sometime the utilization of the allocated funds is not as intended hence the need to ring fence agricultural and potato budgets.

In comparison with other perennial crops, potato farmers are yet to receive proper financial services and products from mainstream financial institutions. The reluctance to fund potato enterprises is underpinned by paucity of appropriate data to support risk analysis. Most institutions are currently targeting investments in machinery and equipment both for production and processing but their terms especially on interest rates are not attractive to investors. The SACCOs have adopted group lending ensuring that farmers can access certified seed and other inputs if the groups have viable business models

Strategic Objective 9: Enhanced Funding to the Potato Industry

This strategy proposes the following interventions to mitigate against funding challenges highlighted above.

- i.) Establishing mechanisms to access funds in the commodity fund under the AFA Act
- ii.) Targeting NGOs, CGs and development partners funding to potato industry
- iii.) Lobby both NGOs and CGs to implement the 10% of the GDP funding to the agriculture sector
- iv.) Resource mobilization in counties through the county assembly
- v.) Engaging with the financial institutions to develop and offer financial and insurance services and products to the industry

4.0 IMPLEMENTATION, MONITORING AND EVALUATION

4.1 Implementation

The overall implementation, monitoring and evaluation of the strategy will be the responsibility of MOALF&C & CGs in partnership with NPCK. As provided for in the Intergovernmental Relations Act of 2012 that established the Joint Agriculture Sector Consultation and Cooperation Mechanism (JASCCOM), the counties through the county level structure-County Agriculture Sector Steering Committee (CASSCOM) shall play a critical role in the implementation, monitoring, and evaluation of this strategy. Having the CASSCOM functional in the potato growing counties will provide the necessary framework for adequately tracking the implementation process. Relevant Government agencies will also be involved for specific roles under their respective mandates.

Effective implementation of the strategy will be at 2 levels:

Partners' level: NPCK working closely with the National Government and county governments will take the role of coordination of partners in implementation. This will be at both National Government and County Government levels consistent with devolution.

Micro, Small and Medium Enterprise (MSMEs) Level: All potato value chain actors in each county shall be mobilized to form potato production and marketing clusters equivalent to farmer facing SMEs in the Agriculture Sector Transformation & Growth Strategy (ASTGs) anchors. This will create the elusive linkages between the producers and other value chain actors, marketing agents, seed and input suppliers, processors, transporters various service providers among others to enhance business transactions, improve productivity and quality along the potato value chain. Stakeholders will be informed of the latest developments in the potato industry through mainstream and digital media channels, publications, and other relevant channels of communication.

4.2 M&E Activities

To assess progress, there will be continuous monitoring and evaluation of activities being carried out by various stakeholders. This will be a key feature in this strategy. There will be routine data collection and analysis to inform decision making at all levels. Stakeholders will be encouraged to make use of NPCK website and e-news letters to indicate activity progress

and use of *Viazi Soko* app where various data sets can be generated for the industry.

Performance indicators of various activities 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 monitoring and evaluation. The industry will generate bi-annual reports for purposes of monitoring.

Studies/services conducted by stakeholders will be shared with stakeholders through NPCK platform. Stakeholders willing to undertake various studies should work in collaboration with NPCK and members.

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.

5.0 INDUSTRY RESOURCE MOBILIZATION TO FINANCE THE POTATO STRATEGY

The financing of the potato strategy implementation, directly or indirectly, will be a shared responsibility between the NG through the State Department of Crops Development and Agriculture Research, MoALF&C the CG through the relevant Agriculture Departments, private sector, international organizations, farmers, NPCK, farmer associations, NGO's, and development partners. The strategic objectives will be largely financed by the NGs and CGs. These will include, provision of an enabling environment, research and development, manpower provision and development, multiplication of basic seed, infrastructure, extension services, farmer empowerment, regulatory and quality assurance services.

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.

Private sector or commercially oriented activities will be financed by the private sector and these shall include seed multiplication, marketing activities and capacity building. Others jointly carried out activities such as field days and conferences will be jointly financed. The potato industry will be private sector led within the provisions of the Laws of Kenya.

The government and private sector will be largely financing the other interventions and actions of this strategy as highlighted below: -

Sources of Funds

The programmes in this strategy require approximately Ksh. 4,557.65 Billion to be implemented over a period of five years

- i.) The major source of funding will be the government through the exchequer to the MOALF&C towards projects that are aligned to this strategy. 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 and insurance services and products
- 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.

6.0 IMPLEMENTATION MATRIX AND BUDGET

Table 4: indicates the activities and budgets that the industry requires in achieving its set objectives.

Action	Activities	Target/Expected output	Responsibility/Actor	Performance indicator	Indicative Budget in millions (Ksh.)					
					Total	2021	2022	2023	2024	2025
STRATEGIC OBJECTIVE 1: Strengthen Institutional, Legal, and Regulatory Framework										
1.1 Expand human, physical and financial capacity of the public institutions	1.1.1 Lift the ban on hiring of public officers and increase the staff establishment in public institutions (KEPHIS, KALRO and ADC).	An expanded staff establishment. Increase inspectors in KEPHIS by 200	MoALF&C/ KEPHIS/ADC / KALRO	Seed inspectors increased,	1,000	200	200	200	200	200
		ADC to recruit 10 production field staff. KALRO to recruit 10 technical officers and 3 scientists.	MOALF&C/ ADC, KALRO	The number of new officers recruited.	37.5	7.5	7.5	7.5	7.5	7.5

	1.1.2. Improve and increase physical infrastructure in KALRO, KEPHIS and ADC.	KALRO; irrigation in Marindas and Njabini	MOALF&C/ KALRO	Infrastructure in place	45	9	9	9	9	9
1.2 Review the laws supporting the institutions to be in line with the current situation	1.2.1 Review Seed and plant varieties Act Cap 326	Certified Seed in Counties Develop regulations for seed potato production and other vegetative planting material Authorised seed inspectors Regulations and Protocols for quality assurance in potato (VPS) developed	MOALF&C/ CoGs & CECs, NPCK, STAK, Stakeholders	Quantities of certified seed availed. Regulations and Protocols for vegetative propagated seed Number of practising authorised inspectors	39	19	11	5	2	2

	1.2.2. Review of National Seed Policy	National Seed Policy reviewed, and implementation matrix developed	MOALF&C, CoGs & CECs, NPCK, STAK, Stakeholders	Implementation of National Seed Policy	21	15	3	1	1	1
	1.2.3 Lobby for reduction/ harmonization of potato levies 1.2.4 Support full implantation of enacted regulation 1.2.5 Develop and promote standards and code of practice for industry actors	Quarterly meetings Full implementation of regulations Harmonized potato levies	MOALF&C/ AFA/ KEPH- IS/ County Government/ NPCK/ Stakeholders	No. of meetings held Harmonized potato levies Full implementations of regulations. Standards and code of practice in place	3	3	0	0	0	0

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.	At least 1 grassroots producer group formed in each of 14 counties. One national level producer's association formed and strengthened.	MOALF&C/ CG/ NPCK/ KENAFF,	The number of producer groups formed.	7	1.4	1.4	1.4	1.4	1.4
1.4 Strengthen PPP in seed potato production	1.4.1. Develop and adopt PPP business models.	At least three business models strengthened and adopted.	MOALF&C/ KALRO/ ADC/ KEPHIS/ NPCK/ KENAFF/ stakeholders	Business models adopted.	3	1	1	1	0	0
1.5 Strengthen industry linkage platform and communication	1.5.1. Create and build the capacity of potato industry platform.	One platform established Quarterly meetings held	MOALF&C/ NPCK/All stakeholders	Potato industry platform registered. No. of meetings held	1	1	0	0	0	0
1.6. Land for seed potato multiplication	1.6.1. Lobby Government to avail extra land	Quarterly meetings Delineate Pest Free Areas for seed production Irrigation facilities	NG/CG/ MoALF&C/ KEPHIS/ADC /KALRO	Ha under seed production No. of meetings held	100	20	20	20	20	20

		developed								
	1.6.2. Support irrigation facilities for basic seed production in KALRO.									
1.7 Support capacity building and registration of private seed inspectors under KEPHIS license	1.7.1. Identify potential private seed inspectors and train them. 1.7.2 Promote private testing labs	25 private seed inspectors identified and trained. 2 private labs operating	MoALF&C/ KEPHIS/ KENAFF/ NPCK/ STAK, stakeholders	No. of private seed inspectors licenced.	2.5	0.5	0.5	0.5	0.5	0.5
1.8. Development and implementation of county potato strategy	1.8.1 Cascade NPS to counties Strategies 1.8.2. Implementation of county potato strategy	Development of County strategies for potato producing counties	CG/ MoALF&C/ AFA/NPCK/ Stakeholders	No. of county potato strategies developed	13	2.6	2.6	2.6	2.6	2.6
					1,272	280	256	248	244	244

STRATEGIC OBJECTIVE 2: Enhance Research in the potato industry										
2.1 Research in appropriate agronomic package (soil fertility, appropriate varieties and seed rate, fertilizer types and rates, agro chemicals usage and postharvest handling), for potato production	2.1.1 Carry out research for appropriate agronomic technologies	6 Agronomic packages available and disseminated	KALRO/ Universities/ Development partners/ Seed & Agro-chemical Co's.	No. of agronomic packages developed	10	2	2	2	2	2
	2.1.2 Demonstrations in best practices of potato production	One demonstration conducted per ward Best practices demonstrated and adopted	KALRO / Universities/ Development partners, seed & /Agrochemical Co's. / NGO's	No. of demonstration sites set up No. of technologies and best practices demonstrated	36	7.2	7.2	7.2	7.2	7.2
2.2 Search and Identify, Research, fabricate or acquire appropriate	2.2.1 Carry out research on appropriate and afford	Appropriate potato land preparation and harvesting	KARLO/KIRDI, University, DK engineering	Potato planters, Ridgers sprayers and harvested identified	40	8	8	8	8	8

and affordable machinery	able potato machinery	equipment researched. Appropriate storage solutions researched. Appropriate Processing equipment researched		Storage solutions for different AEZ developed Appropriate processing equipment developed						
	2.2.2 Fabricate appropriate machinery	Prototypes developed Appropriate potato machinery fabricated	KIRDI, University, DK engineering, <i>Jua Kali</i>	No. of fabricated machinery and equipment. No. of stores developed	5	1	1	1	1	1
	2.2.3 Acquire appropriate machinery	Appropriate potato machinery acquired	KALRO/ADC, FMD, seed producers and other stakeholders	No. of machinery and equipment acquired and used No. of stores acquired and adopted. Improved farm efficiency. Reduced post-harvest losses	60	12	12	12	12	12

	2.2.4Aware- ness creation on importa- tion require- ment	30 meetings Increased demand for various ma- chinery and equipment	Stakeholders/ MoALF&C/ NG	% increase in no. of enquiries and application for importation. No of ma- chinery and equipment imported	5	1	1	1	1	1
	2.2.5. lobby for Duty and Tax exemptions	20 meetings Increased importation of various ma- chinery and equipment	NG/ Stake- holders	Reduction in Tax duty regimes. No of Tax and duty exemptions	5	1	1	1	1	1
2.3 Packaging and dissem- ination of appropriate technology information	2.3.1 Devel- opment of mechanisms for collection, collating, storing and dissemination of appropriate information	Online Potato platform, depository in- formation re- source centre E-newsletter Workshops and confer- ences	NPCK/ Research institutions/ Development partners/ Stakeholders	Online Plat- form and re- source centre Dissemination through no of workshops and confer- ences	2	0.4	0.4	0.4	0.4	0.4

2.4. Market research and product development	2.4.1 conduct market research on various/ diverse potato products 2.4.2 Conduct research on various potato products and their utilization	Diversified potato products and their markets Varieties suitable for various potato products	Universities/ KALRO/ Processors	No. of markets identifies No. of potato products No. of potato varieties identified	5	1	1	1	1	1
2.5 Potato waste management	2.5.1. Conduct o study on types and quantities of potato waste 2.5.2 Research on utilization of potato waste	One study on quantities and types of potato waste. Utilization of potato waste	Universities/ NGOs/ Development partners	Potato waste management	2	1	1	0	0	0
2.6 Research on control and management of existing and emerging pests and diseases of potato	2.6.1Potato Disease and pest surveillance	Identification of available pests and disease, prevalence damage caused	KALRO/ Universities/ seed companies/ KEPHIS/ CIP/ ICIPE, CABI/ Development partners	No. of pests and diseases identified, prevalence and damage caused	15	0	7.5	0	7.5	0

	2.6.2 Develop mechanisms for responding to emerging pests and diseases of potatoes	10 meetings held Identification mechanism Reporting mechanism	KALRO/ Universities/ seed co's, KEPHIS / CIP/ ICIPE, NPCK/ CABI/Development partners/ Farmers	No. of pests and diseases identified and reported	10	2	2	2	2	2
	2.6.3. Crop Pest and disease management	Employ GAP and IPM. Capacity building on Safe and effective use of crop pests control products. Introduction of low-risk pesticides	KALRO, /Universities, seed & Agro-chemical co's / KEPHIS/ CIP/ ICIPE, NPCK / CABI/ Development partners/ farmers	Increased productivity. Reduced crop loss. Increased quality of ware potatoes. Conserved environment	30	6	6	6	6	6
					225	42.6	50.1	41.6	49.1	41.6
STRATEGIC OBJECTIVE 3: Promote Variety Development and Seed Production										
3.1Strengthen breeding programs in the country	3.1.1 Acquire new germplasm from diverse places	New germplasm acquired from diverse places for breeding	KALRO/CIP/ Universities	No. of new germplasm acquired	5	1	1	1	1	1

	for specific characteristics									
	3.1.2 Develop models for PPP in seed breeding	Models developed and adopted Private investors to fund breeding programmes.	KALRO, /Seed Multipliers/ public and private entities	No. of models developed and adopted No. of Private investors funding breeding programs	1	1	0	0	0	0
	3.1.3 Investment in Infrastructure development	Construction of TC labs, Installation of Aero-ponics and hydroponics Installation of green houses	KALRO, ADC/ Tumaini/ KEPHIS, universities/ National and county governments/ Private entities	No. of TC labs put up and operationalized No. of Aero-ponics and hydroponics installed, and operationalized No. of greenhouses installed and operationalized. Tons of breeders' seed produced	45	0		22.5	22.5	

	3.1.4. Research on Hybrid True Potato Seed	Demonstration on performance of Hybrid TPS. No. of varieties under TPS	Seed breeders	No. of Varieties identified. Ha under TPS	10	2	2	2	2	2
3.2 Promote officially released potato varieties that are high yielding, resistant to diseases and suitable for various utilization demands	3.2.1 Develop technology packages for released potato varieties	4 manuals developed	MOALF&C/ KEPHIS, Universities, KALRO, CIP, GIZ, /Seed potato multipliers	2 manuals developed	2.5	1.25	0	1.25	0	0
	3.2.2 Update potato variety catalogues	Potato variety catalogue updated	NPCK/ MoALF&C/ KALRO/ CIP/ GIZ/ Seed potato breeders and Multipliers	1 potato variety catalogue updated	4.5	1.5	0	1.5	0	1.5

	3.2.3 Carry out field days and demonstration, potato business days in various appropriate agro-ecological zones	30 Field days and demonstrations held in the various appropriate agro-ecological zones	County Governments, KALRO, CIP, GIZ/ Kenya-Netherlands seed potato project	20 field days and demonstrations held	40	8	8	8	8	8
	3.2.4 Create and inform seed users on seed situation on regular basis	Seed potato portal	NPCK, Development partners	1 seed potato portal Seasonal seed potato situation updates	1	0.2	0.2	0.2	0.2	0.2
3.3 Strengthen seed production, multiplication and certification	3.3.1 Avail breeders seed for subsequent multiplication	Tons of breeders' seed produced and availed	KALRO, CIP, KEPHIS	% Increase in breeders' seed produced	10	2	2	2	2	2
	3.3.2. Multiplication of Local seed potato of preferred varieties	Multiplication of local varieties	ADC, other seed multipliers, KEPHIS	% increase in acreage under seed potato % increase in availed seed potato of preferred varieties	20	4	4	4	4	4

				% increase in seed potato multiplied and certified No of farmers reached						
	3.3.3 Im- portation of suitable seed of preferred varieties	Tons of imported seed varieties	KEPHIS/ Seed multipliers,	No. of seed potato vari- eties import- ed Tons of seed potato imported % increase in acreage under seed production % increase in seed potato multiplied and certified No of farmers reached	45	9	9	9	9	9
	3.3.4 Encour- age more seed companies to take up seed potato trade	20 meetings Increase in No of companies trading in seed potato	Seed compa- nies/ KEPHIS NPCK,	No. of compa- nies trading in seed potato	1.3	0.3	0.2	0.3	0.2	0.3

	3.3.5 Investment in seed potato multiplication infrastructure	Improve infrastructure for seed potato production and storage	Seed companies/National and county governments/ Projects/ NGOs	No. of potato machinery and equipment purchased. No. of seed storage facilities put up (cold stores) No. of DLSs put up	500	100	100	100	100	100
	3.3.6 Capacity build farmers to produce good quality seed for their own use	Trained farmers	County Government/ Seed Multipliers/ NPCK / NGOs e.g. SNV, IFDC stakeholders, KENAFF	No. of trained farmers in production of quality declared seed for their use	10	2	2	2	2	2
3.4 Develop and operationalize an efficient seed distribution system to ensure all farmers have access to quality seed	3.4.1 Facilitate partnerships between seed potato companies, ATCs, and agro chemical companies	Partnerships created	Seed Companies/KEPHIS NPCK/NGOs	No. of Partnerships created	2	0.4	0.4	0.4	0.4	0.4

quantities at the right time										
	3.4.2. Facilitate bulk purchase of seed by farmer cooperatives and groups	Farmers accessing certified seed	CG/Seed Multipliers / NPCK/ Projects / NGOs e.g. SNV, IFDC stakeholders, KENAFF	No. of cooperatives /Farmer groups doing bulk purchase Tons of seed potato purchased. No. of farmers reached	5	1	1	1	1	1
	3.4.3 Facilitate seed distribution from companies to farmers	Seed potato distributed	Seed companies, NGO, NPCK	No. of effective distribution channels identified Quantity of Seed potato distributed	5	1	1	1	1	1
					707.4	134.7	130.8	156.2	153.3	132.4
STRATEGIC OBJECTIVE 4: Increased Potato Production										
4.1 Access to timely quality seed potato and other inputs	4.1.1 Subsidize purchase of certified seed potato	30000 e-vouchers	MOALF&C/ CG / Projects/ NGOs	Subsidized 200 tons of seed purchased and distributed to farmers	30	6	6	6	6	6

	4.1.2 Support construction of group DLS facilities	60 DLSs constructed (1 per ward)	MOALF&C/ CG / Projects/ NGOs	No. of stores constructed	14	2.8	2.8	2.8	2.8	2.8
	4.1.3 collective purchase of inputs	Timely access to inputs	Seed multipliers,	Timely access to quality inputs	0	0	0	0	0	0
4.2 Improve access to extension services	4.2.1 Trade fairs, print and electronic media (e-extension)	20,000 Extension materials developed and distributed.	CG / KE-NAFF/ other partners/ Media houses	No. of extension related programmes on air and in print	0.5	0.1	0.1	0.1	0.1	0.1
		8 trade fairs conducted annually	CG/ KENAFF/ NPCK/other partners/ Media houses	No. of trade fairs planned and executed	60	12	12	12	12	12
	4.2.2 ToT's	10 Capacity built extension service providers on latest technologies (ToT's)		No. of trainings conducted	100	20	20	20	20	20
	4.2.3. Capacity built farmers	Capacity built farmers on latest technologies and GAP		Number of trainings organised and executed	195	39	39	39	39	39

		Capacity building on Agribusiness/ entrepreneurship		Commercialization of potato production Linkage to markets	100	20	20	20	20	20
4.3 Promote appropriate technologies	4.3.1 Establish demonstrations on new and emerging technologies (applicable mechanised operations, irrigation, Certified seed and varieties etc.)	4 demonstration carried out per ward	MoALF&C/ CG/ Development partners/ NPCK/ NGOs	No. of specialised demonstration carried out	975	195	195	195	195	195
	4.3.2 Purchase of appropriate machinery and equipment	15 sets of potato implement purchased by counties	MoALF&C/ CG/ Development partners/ NPCK/ NGOs	No. of counties invested in machinery No. of farmers adopting mechanized operations	90	18	18	18	18	18

4.4 Safe and effective use of agrochemicals	4.4.1 Capacity building on IPM 4.4.2. Demonstrate on safe use of agrochemicals 4.4.3. Promote use of Biologicals	Project monitored and evaluated regularly	MoALF&C/ CG	Increased productivity. Reduced cost of production. Environmental sustainability	12	2.4	2.4	2.4	2.4	2.4
4.5 Economics of potato production	4.5.1 Capacity building on potato input and output relationships (cost and benefit)	360 staff trained on economics of potato production	CG/ KENAFF/ NPCK/other partners	Commercialization of potato production Linkage to markets	100	20	20	20	20	20
4.6 Control wide spread of pests and diseases	4.6.1 Establish a mechanism of reporting emerging pests and diseases	Mechanism of reporting emerging pests and diseases established	MoALF&C/ County Governments/ Development partners	monthly reports	1	1	0	0	0	0
		360 staff trained on early warning	MoALF&C/ County Governments	No. of staff trained	18	3.6	3.6	3.6	3.6	3.6

	4.6.2 Finance and support establishment of surveillance activities and diagnostic lab	1 diagnostic lab built and equipped in Kitale, and Nakuru lab equipped	MoALF&C/ KEPHIS/ Development partners	Kitale Lab built and equipped; Nakuru Lab equipped	50	25	0	25	0	0
					1745.5	364.9	338.9	363.9	338.9	338.9
STRATEGIC OBJECTIVE 5: Improve Post-Harvest Handling, Value Addition, and Marketing										
5.1 Promote Agribusiness in potato industry	5.1.1 Capacity build youth on agribusiness opportunity	20 Youth per ward sensitized in Agribusiness	CG/ NPCK/ development partners	No. of youth trained	39	7.8	7.8	7.8	7.8	7.8
	5.1.2 Capacity build other players on entrepreneurship.	ToTs for other industry actors conducted	CG/ development partners/ NGOs	No. of ToTs conducted	5	1	1	1	1	1
5.2 Promote viable business models	5.2.1 Develop and promote sustainable business models	2 business models developed and tried	CG/ NPCK/ development partners/ KENAFF	No. of business models working	1	0.2	0.2	0.2	0.2	0.2
5.3 Ware potato storage solutions	5.3.1 Construction of potato storage solutions	5 potato stores constructed	MOALF&C/ farmers/ Projects/NGOs	No. of potato storage solutions established	400	160	0	160	0	80

	5.3.2 Capacity building in ware potato store management	Quarterly capacity building of store managers	MOALF&C/ farmers/ Projects/NGOs	Operating ware potato stores Increased Turnover in potato traded volumes % of Reduced storage losses	5	1	1	1	1	1
	5.3.3 Finalize guidelines for storage facilities	Guidelines developed	MOALF&C/ AFA/ CG/ NPCK / KENAFF/ other farmer groups/ Projects/NGOs-MOALF&C/ AFA, /CG/ NPCK / KENAFF/	Guidelines developed disseminated	0.25	0.25	0	0	0	0
	5.3.4. Introduce warehouse receipt systems	3 counties pilot the system	other farmer groups/ Projects/NGOs	warehouse receipt system operationalized in potato industry	6	2	2	2	0	0

5.4 Value addition and processing	5.4.1 Develop, document and disseminate technologies for value addition	Inventory of technologies for value addition documented and disseminated	MOALF&C/ AFA, NPCK/ KEPHIS/ KEBS/ Seed Producers	One document on technologies	0.25	0.25	0	0	0	0
	5.4.2 Create linkages to business incubation centres	Document adopt and avail appropriate technologies for value addition	MOALF&C/ AFA, NPCK/ KENAFF, and other industrial players	No of new products	1	0.2	0.2	0.2	0.2	0.2
5.5. Potato quality assurance and traceability	5.5.1 Establish guidelines for quality assurance and traceability	No. of meetings Guidelines developed	MoALF&C/ AFA, NPCK/ KENAFF, and other industrial players	Guidelines developed and adopted	1	1	0	0	0	0
5.6. Utilization of potato	5.6.1. Develop various recipes and demonstrate on their preparation	Various recipes developed and adopted	MoALF&C/ NGOs/Development partners/ Hoteliers	Recipes developed and adopted	2	0.4	0.4	0.4	0.4	0.4
	5.6.2. Develop products from potato waste	No. of products developed	Universities/ Processors/ NGOs	Products developed and adopted	2.5	0.5	0.5	0.5	0.5	0.5

5.7 Create market linkages through contract farming	5.7.1. Encourage contract farming	(60) One group per ward signs an MoUs on contract farming	MOALF&C/ AFA, CG/ NPCK /KE-NAFF/other farmer groups	No of contract and MoUs	1	0.2	0.2	0.2	0.2	0.2
	5.7.2. Develop regulations on contract farming.	Conflict resolution mechanisms in contract farming put in place	MOALF&C/ AFA/CG/ NPCK/ KE-NAFF / other farmer groups	Guidelines for conflict resolutions put in place	0.5	0.5	0	0	0	0
	5.7.3. Establish collection centres	(60) One collection centre per ward established	MOALF&C/ AFA/ CG / NPCK / KENAFF / other farmer groups/ Projects/NGOs	No of collection Centres established	6	1.2	1.2	1.2	1.2	1.2
		Support establishment of quality assurance and traceability.	MOALF&C/ AFA/CG/ NPCK / KENAFF/ other farmer groups/ Projects/NGOs	Structured marketing of potatoes Development of traceability guidelines e.g. labels Consistent	0.5	0.5	0	0	0	0
				supply of quality ware potatoes						

5.8 Promote formation of ware potato producer business organizations (MSMEs);	5.8.1 Formation of potato Producer organisations (PO)	(15) One PO formed per county	MOALF&C/ AFA/ CG / NPCK / KENAFF / other farmer groups/Projects/NGOs	No. of potato Producer organizations formed	4.6	1	1	1	1	0.6
	5.8.2 Train PO on Potato business management	Quarterly capacity building on business management	CG/ NPCK / KENAFF/ other farmer groups	No. of ware potato producers formed and trained, No. of ToTs held	5	1	1	1	1	1
	5.8.3 Monitor business activities of PO	% increase in potato business transactions	MOALF&C/ AFA, CG/ NPCK / KENAFF/ other farmer groups/Projects/NGOs	% increase in incomes % increase in membership Investments made	12	2.4	2.4	2.4	2.4	2.4
5.9. Market information	5.9.1. Collect, collate, and disseminate market information	Daily provision of market information	MoALF&C / CG/ NPCK/ Media	No. Available markets Traded Volumes. Price differentials	2.6	0.52	0.52	0.52	0.52	0.52
					495.2	181.92	19.42	179.42	17.42	97.02

STRATEGIC OBJECTIVE 6: Enhance Export, Import, and Trade										
6.1. Create awareness of harmonised regional regulations and standards	6.1.1. Avail harmonised regional regulations and standards	Documents availed	KeBS/ KEPHIS/ Development partners/ Stakeholders	Improved business environment	1	0.5	0.5	0	0	0
6.2. Regional standards	6.2.1. Finalize EAC Standards.	Adoption and implementation of regional standards	KEPHIS/EAC Secretariat	Implementation of regional standards	5	0	0	1.5	1.5	2
6.3 Monitor import/export volumes of potato products	6.3.1 Data collection and collation of all potato products	Data and statistics of flow of products	KEPHIS/ KEBS/KBS/ Stakeholders	Traded volumes of all products	5	1	1	1	1	1
6.4 Improved linkages and communications	6.4.1 Quarterly review meetings	Improved business environment	KeBS/ KEPHIS/ Development partners/ Stakeholders	Reduced transaction costs and turn-around time Increased linkages to larger markets in EAC	1.25	0.25	0.25	0.25	0.25	0.25

6.5 Review seed export procedure	6.5.1 Clarity in the import export process	I review	KeBS/ KEPHIS/ Development partners/ Stakeholders	1 guideline on harmonised export/import requirements	2.5	0.5	0.5	0.5	0.5	0.5
6.6. Opportunities within the region and beyond	6.6.1. Study to identify opportunities in seed and ware potato within the region	One report	KEPHIS / NPCK/ NGOs/De-velopment partners	One report highlights opportunity within the region	5	0	0	3	1	1
					19.75	2.25	2.25	6.25	4.25	4.75
STRATEGIC OBJECTIVE 7: Potato Value Chain Data Management and involvement of Youths and Women										
7.1 Baseline data indicators	7.1.1 Establish seed and ware potato baseline information	Established Seed and ware potato production data	MoALF&C/ NPCK/KEPHIS/CG/AFA/ Seed multipliers	Document-ed data set for seed and ware potato production figures	1	1	0	0	0	0
7.2. Building baseline data Indicators	7.2.1 Determine sources of data	No of seed multipliers Seed classes, varieties, and production figures			0.2	0.2	0	0	0	0

7.3. Develop potato data MIS	7.3.1 Develop data MIS	one data MIS developed	MoALF&C/ NPCK/AFA	One data MIS developed and operationalized	1	1	0	0	0	0
7.4 Piloting data collection	7.4.1. Data collection from seed multipliers. 7.4.2 Data collection from farmers in pilot counties	No. of counties carrying out data collection	MoALF&C/ NPCK/AFA/ CG	Harmonised county and national production figures	23	4.6	4.6	4.6	4.6	4.6
7.5 Establish ICT Platform	7.5.1 Establish ICT platform. 7.5.2 Host ICT platform	Establish ICT platform Linkages to the ICT platform		One ICT platform established. Number of links established	3	2	0.25	0.25	0.25	0.25
7.6 Establish support mechanisms of women and youth generated ideas	7.6.1 support women and youth ideas	Number of women and youth ideas supported		Number of women and youths participating in the VC increases	3	2	0.25	0.25	0.25	0.25
7.7 Develop innovative technologies	7.7.1 Support development of innovative technologies	Number of innovative technologies supported		Number of innovative technologies developed and up taken	3	2	0.25	0.25	0.25	0.25

					34.2	12.8	5.35	5.35	5.35	5.35
STRATEGIC OBJECTIVE 8: Industry Coordination, Collaboration and Networking										
8.1 Promote Public-Private Partnerships	8.1.1 Consultative meetings	Partnerships developed	All stakeholders	No of partnerships developed	2.5	0.5	0.5	0.5	0.5	0.5
8.2 Harmonize and prioritize the activities of the different actors in the potato industry	8.2.1 Identify and create an inventory of all the stakeholders	Registration and update exercise for all stakeholders	MOALF&C/ NPCK/AFA/ CG	National register in place. Country registers in place	1.4	1	0.1	0.1	0.1	0.1
	8.2.2. Provision of partners platform in NPCK website	Update of partners activities	NPCK and Partners	Number of partner platforms in the website	0.5	0.1	0.1	0.1	0.1	0.1
8.3 Communication and coordination	8.3.1 Organize National fora of all actors in the value chain	National Fora on different issues organized annually	MoALF&C/ NPCK/ Stakeholders	No of conferences and trade fairs organised No of specialised meetings held	2.5	0.5	0.5	0.5	0.5	0.5

	8.3.2 Promote county fora for information processing and sharing along the value chain eg trade fairs	County Fora on different issues organized annually	KENAFF and MOALF&C/ CG and other partners	No of trade fairs organised No of meetings held	23	4.6	4.6	4.6	4.6	4.6
8.4 Facilitate linkages between the farmers, research, extension and the market	8.4.1 Carry out linkage fora of all concerned groups	Linkage fora held	Research institutions/ MoALF&C/ NPCK/AFA/ Farmers/Market Representatives	No of forums held	2	0.4	0.4	0.4	0.4	0.4
	8.4.2 Hold Research Extension liaison meetings	Quarterly Priority setting and performance review meetings held	Research Institutions/ MoALF&C/ NPCK/ County rep/ Farmers/Market Representatives	No. of meetings/forums	5	1	1	1	1	1
8.5 Establish implementation and monitoring committees at the national	8.5.1 Constitute M and E committees from key institutions	At least one at National and one each in County level held	MOALF&C/ AFA/ CG/ NPCK/ KENAFF and other partners	No. of M&E committees formed at both levels	2	0.4	0.4	0.4	0.4	0.4

and county level										
	8.5.2 Carry out M&E activities	At least 2 M&E visits done		No. of M&E carried out No of M&E reports produced	5	1	1	1	1	1
	8.5.3 Hold national and county M&E consultative meetings	Quarterly meetings held		No. of meetings held. No. of reports produced	5	1	1	1	1	1
					48.9	10.5	9.6	9.6	9.6	9.6
STRATEGIC OBJECTIVE 9: Industry Resource Mobilization										
9.1 Establishing mechanisms to access funds in the commodity fund	9.1.1 Establish mechanism to access fund in the commodity fund	Increased funding to the potato sector	MoALF&C/ AFA	No. of farmers accessing Commodity fund	2.7	0.7	0.5	0.5	0.5	0.5
9.2 Improving GOK and donor funding to potato industry	9.2.1 Lobbying for increased funding to potato sector	Increased funding to the potato sector	MoALF&C/ Stakeholders	Increased funding to potato sector	3	0.6	0.6	0.6	0.6	0.6

9.3. Government to implement the 10% of the GDP funding to the agriculture sector.	9.3.1 Lobbying for increased funding to agriculture sector	Increased allocation to the agriculture sector	MoALF&C/ Stakeholders	10% of GDP Allocated to agriculture sector	3	0.6	0.6	0.6	0.6	0.6
9.4 Financial & Insurance institutions to offer appropriate services and products to the industry	9.4.1 Lobby for development of financial & Insurance services and products	Affordable financial & Insurance services and products la	Financial & Insurance institutions / Stakeholders/	No of financial and insurance institutions offering services and products No of new financial and insurance services and products offered	1	0.2	0.2	0.2	0.2	0.2
					9.7	2.1	1.9	1.9	1.9	1.9
Grand Total					4,557.65	1,031.77	814.32	1,012.22	823.82	875.52

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