

DEPARTMENT OF AGRICULTURE, LIVESTOCK & FISHERIES

NYANDARUA COUNTY



COUNTY POTATO STRATEGY - 2018 TO 2022



**DEPARTMENT OF AGRICULTURE, LIVESTOCK & FISHERIES
NYANDARUA COUNTY**



THE COUNTY
POTATO STRATEGY
2018-2022

PREFACE

Agricultural growth and development is crucial for Kenya's economic and social development. It directly contribute to 25% of the GDP and 65% of export earnings. The National Government has outlined the key role the Agriculture Sector will play in its policy papers, Kenya Vision 2030 and the Agriculture Sector Development Strategy (ASDS) 2009 -2020. Both of these policies aim at improving the standard of living of Kenyans by substantially reducing the number of people affected by hunger, famine and starvation. Irish Potato (*Solanum tuberosum*) is one of the enterprises that will play a great role towards the realization of the set objectives of Kenya vision 2030 under the economic pillar because of its substantial contribution to food availability in the Country.

Agriculture is the key economic driver of Nyandarua County and over 70% of the Counties residents draw their livelihood directly or indirectly from agriculture. Irish Potato is the most important crop in County for food security, employment creation and wealth generation. The County is the leading Irish potatoes producer in Kenya and value chain directly and indirectly supports over 100,000 farm families in the County. The County produces over 500,000 tonnes of potatoes with a market value at over Ksh 8.0 billion annually.

The Nyandarua County Potato Strategy 2018 -2022 has been developed through collaboration of the County Government, potato stakeholders and development partners. The Strategy is aligned with the National Potato strategy and THE National Government's vision 2030. It is aimed at guiding the County government, stakeholders, and the development partners in aligning development initiatives and interventions in order to accelerate growth and development of the potato industry in the County. This will create synergy in tackling challenges in the potato value chain for the benefits of all the value chain players.

The strategy focuses on the following strategic objectives;

- i) Increasing potato production and productivity by facilitating supply of certified seeds, promotion of irrigation, assisting farmers to access affordable and quality inputs, promotion good agronomic practices, facilitating availability of potato production machinery, management of pests and diseases, promotion of proper harvesting techniques.

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- ii) Reducing post-harvest losses and increase value addition through improved handling of potato, improving storage capacity of potato seed, and increase processing.
- iii) Improving market access by improvement of market networks, improvement of road networks, and creation of collection centers.
- iv) Increasing involvement of women and youth in the higher segments of potato value chain by ensuring gender responsive business trainings, involving youth and women in certified seed businesses, promoting active involvement of youth and women in marketing, linking women and youth to access produce market and seed information through use of ICT, assisting them to acquire gender responsive business loans.

I acknowledge the role of everyone who have participated in the preparation of the Strategy. Special thanks to His Excellency the Governor Hon. Francis Kimemia and his County cabinet members. I am thankful for the role played by Honorable members of the county Assembly led by the Speaker Hon. Ndegwa Wahome and the chairman Agriculture, Livestock and Fisheries Committee.

I highly appreciate the KEPHIS Team lead by the Director Dr. Esther Kimani, The Kalro Team led by Dr. Nyongesa, the Officers of Nyandarua County department of Agriculture, Livestock and Fisheries led by the Chief Officer Mr. William Cheruiyot, County Director of Agriculture Margret Kambo and her staff for their roles in Coordination of the preparation meeting.

The role of the various stakeholders from processors, Non- Governmental organizations, Development partners and private sector in potato value chain is highly appreciated.

Finally, let me express my gratitude to institutions and programmes working in Nyandarua County that have continuously supported activities in the potato value chain. In this regard, we want to thank GIZ, NPCK, ASDSP, KAPAP, CIP, & SNV.

It is my sincere hope that this Potato Strategy will guide the stakeholders in addressing the challenges facing the value chain in the County.

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NYANDARUA COUNTY

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List of Acronyms and Abbreviations

AFA	Agriculture and Food Authority
ADC	Agricultural Development Corporation
AMS	Agriculture Mechanization Services
ATC	Agriculture Training Centre
CBO	Community Based Organization
CIP	International Potato Center
DLS	Diffuse Light Store
GAP	Good Agronomic Practices
GIZ	Germany International Development Agency
IFDC	International Fertilizer Development Centre
KALRO	Kenya Agriculture and Livestock Research Organization
KEPHIS	Kenya Plant Health Inspectorate Service
NPCK	National Potato Council of Kenya

Executive Summary

Irish potato is the most important crop enterprise in Nyandarua County being key in wealth creation, food security and employment creation. The crop is adapted to the climatic conditions in most parts of the county with high production per unit area and it is well accepted as a food crop, for food security and for commercial purposes.

Potato production in the county faces a number of challenges which impends the realization of the County's full potato production potential. The challenges includes inadequate and inappropriate storage facilities, fluctuating market prices, inaccessibility of clean good quality seeds, high post-harvest losses, low yields, pest and diseases, over dependence on rain fed Agriculture, poor marketing systems, erratic weather conditions due climate change, and cost of input.

This strategy has an overarching goal of making the potato value chain in Nyandarua County competitive to support wealth creation, income generation and food security with specific objectives of increasing production from the current 37,000 ha to 45,000 Ha and productivity from an average of 15 tons per ha to 20 tons per ha (this translates into an increase in potato income to KShs. 4.5 billion annually by the fifth year), reducing post-harvest losses from 19 % to less than 10 %, improving market access to having at least 25 % of the farmers selling directly or through organized groups from the current less than 5 % and increasing involvement of women and youth in the higher segments of potato value chain by 10 % by 2022.

The potato strategy will guide various stakeholders' initiatives to ensure there is no duplication of activities by various stakeholders and development partners. This will lead to appropriate utilization of resources by all in the implementation of activities and interventions in the potato value chain.

The County Government is committed to ensure full implementation of the Potato Strategy. The development partners and stakeholders are encouraged to fully participate in this endeavor. Let me take this opportunity to welcome private sector investors to invest in potato value chain in the County.

It is also my hope that this strategy will harmonize the initiatives of various actors and players in potato value chain.

In the implementation of the strategy, adherence to the constitutional requirements on gender, youth, marginalized groups will be put into consideration.

Introduction

The national government has identified food security as one of the key pillars in the country's development policy. The agricultural component is placed under the jurisdiction of the county government. Nyandarua is one of high potential counties in terms of agricultural production. Agriculture is the key economic driver of Nyandarua County and over 70% of the County's residents draw their livelihood directly or indirectly from agriculture. The county is well endowed for production of many crops including Irish potatoes, vegetables such as peas and Brassicas, temperate fruits, cutflowers.

This implementation plan focuses on the potato value chain in Nyandarua County from production to marketing for the period 2018 to 2022.

1.1 Irish Potato production in Nyandarua County

The Irish potato value chain is key to wealth creation, food security and employment creation in Nyandarua County. The value chain directly and indirectly supports over 100,000 families in the County (among the ones benefiting are women and youth involved in production and marketing) and is the most important crop enterprise in the County. In 2017, a total of 37,000 ha were put under Irish potatoes cultivation in the county which gave an estimated production of 555,000 tones worth Ksh. 9 billion.

Almost all the potatoes grown in the County are sold as unprocessed tubers in the domestic markets. The most preferred varieties include Shangi, Asante, Tigoni, Kenya mpya, Desiree, Kenya Karibu and Sherekea. Newly released varieties introduced in Nyandarua which are high yielding include Jelly, Markies, Ruddolf, Caruso, Destiny, Unica, Acoustic, Lady Amarila, Lady Terra, Musica and Sagita. These varieties are currently being promoted.

1.2 Challenges and problem statement

The national average is 10 tones per hectare; while the current potato production in Nyandarua stands at 15 tones per Ha on average. This is below the potential production level of 60 tones per Ha.

A number of challenges impends the realization of the potato production potential. Among these challenges are:-

- **Production**
 - Erratic weather conditions due climate change
 - High cost of inputs
 - Poor agronomic practices
 - Inadequate supply of certified seeds

- Limited potato mechanization operations – cultivation
- low soil fertility
- low level of inputs use
- High incidences of pest and diseases
- Over dependence on rain fed Agriculture
- Harvesting – wrong tools, harvesting time, maturity
- Inadequate knowledge on potato production and handling

- **Post-harvest & value addition**
 - Poor handling
 - Inadequate and inappropriate storage facilities,
 - High post-harvest losses,
 - Limited processing
 - Packaging
 - Storage

- **Marketing**
 - Fluctuating market prices,
 - High cost of transportation
 - Poor infrastructure
 - Poor marketing systems – middleman, brokers

1.3 Situational analysis

This implementation plan is developed to address these challenges in order to improve income and food security in the County, however some measures are in place that include:-

- Training farmers on good agriculture practices.
- Linking the farmers with the relevant value chain players but is not adequate and will be expanded in this new plan.
- Infrastructure improvement like storage facilities, roads and markets.
- Encouraging the farmers in this county to form groups and cooperative societies to enable them market their produce, access credit and funding.
- To deal with problems of high input prices, there has been limited support to farmers with subsidized fertilizer.
- Demonstrating and offering services to farmers on mechanized potato farming.
- Encourage youth and women to take up potato production and marketing as a business.
- Collaborating with breeders, National Potato Council of Kenya, private investors, GIZ, public organizations (KEPHIS, AFA, HCD, PCPB, ADC, KALRO, KEBS), CIP, Educational institutions and input suppliers to enhance potato value like training, certified seed availability, pest management, good agronomic practices, food safety, soil testing, potato nutrition and input supply.
- Involvement in development of marketing standards and regulations.

1.4 Problem statement

Despite potato value chain having high potential to contribute to food security, increased wealth and improved livelihoods in Nyandarua County, its contribution remains low due to challenges in production, post-harvest management, marketing and limited value addition.

1.5 Objectives

The broad objective is to make the potato value chain in Nyandarua County competitive to support wealth creation, income generation and food security.

1.5.1 Specific objectives

1. Increase production and productivity. Production will increase from 37,000 ha to 45,000 Ha and productivity from 15 tons per ha to 20 tons per ha (this translates to an increase in potato income by KShs. 4.5 billion annually by the fifth year).
2. Reduce post-harvest losses and increase value addition. From 19 % losses to less than 10 %.
3. Improved market access. At least 25 % of the farmers selling directly or through organized groups from less than 5 %.
4. Increased involvement of women and youth in the higher segments of potato value chain by 10 %.

2. Activities

Objective	Activities	Sub-activities	Outcome	Timeline					Responsible	Budget			
				2018				2019			2020	2021	2022
				Q 1	Q 2	Q 3	Q 4						
1. Increase production and productivity.	Supply of certified seeds	Identification of desired varieties / certified seed	List of desired varieties at county level, promotion and updates of new varieties	x				x	x	x	x	County Gov.,	2m
		Sources of desired varieties / certified seed	Updated database of companies selling certified seed	x				x	x	x	x	County Gov., NPCK, KEPHIS, Private sector	2m
		Identify, register and train potential seed producers at county level	Number of seed producers identified, trained, equipped and registered				x	x	x	x	x	County Gov., KEPHIS, KALRO, Private sector	30m
		Identify and promote technologies of increasing certified seed	Number of technologies identified and adopted by entities e.g.					x	x	x	x	County Gov., KALRO, Stokman Rozen, GTIL, CIP,	150m

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		availability	Tissue culture, Cuttings, true seed; number of entities										Hygrotech, Suera,	
	Promotion of irrigation	Expansion of irrigated area by identifying new areas	Increased hectareage for irrigated area for farming				x	x	x	x	x		County Gov.	25m
		Promotion of potato production in irrigated areas	Increase in hectareage under potato in irrigated areas					x	x	x	x		County Gov.	5m
	Support farmers to access affordable and quality inputs	Facilitate availability of fertilizer and lime	Percentage of farmers using recommended rates of fertilizer and lime	x		x		x	x	x	x		County Gov., MoALF, input suppliers	20m
		Facilitate availability of Certified seed	Percentage of farmers using recommended rates of Certified seed		x	x		x	x	x	x		County Gov., seed companies,	15m
		Facilitate availability of Chemical inputs	Percentage of farmers using recommended rates of Chemical inputs		x	x	x	x	x	x	x		County Gov., input suppliers	5m
	Promote	Training and	Number of	x	x	x	x	x	x	x	x		County Gov.,	15m

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good agronomic practices	awareness creation	training and awareness; number of farmers trained										KALRO, KEPHIS	
	Field days	Number of field days and persons reached			x	x	x	x	x	x		County gov., Private sector, Stakeholders, KEPHIS	10m
	Demonstrations	Number of demonstrations		x	x		x	x	x	x		County gov., KEPHIS, Private sector,	12.5m
	Identification and establishment of model farms	Number of model farms in the county		x			x	x	x	x		County Gov., KEPHIS, KALRO, Suera, other private sector	5m
	Extension services to the farmers	Number of extension visits; No. of farmers reached	x	x	x	x	x	x	x	x		County Gov., Private sector, NGOs, CGIAR e.g. CIP, Partners e.g. GIZ, Embassies e.g. Danish, Irish; Faith based organizations;	50m
	Facilitate and promote soil	% of farmers adopting soil	x		x		x	x	x	x		County Gov., KEPHIS,	42m

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		testing and remedies	testing services and remedies e.g. liming, diseases									KALRO, Private sector	
	Support availability of potato production machinery	Facilitate access and affordable machinery services	% of farmers accessing potato mechanization services	x		x		x	x	x	x	County Gov., private sector,	45m
		Promote the use of walking tractors	Number of farmers using walking tractors					x	x	x	x	County Gov., Private sector,	3m
		Training on use of machinery e.g. handling, hygiene, maintenance	Number of users trained	x		x		x	x	x	x	County Gov., Private sector, Chemical companies, KEPHIS	3m
	Management of pests and diseases	Awareness and training on pests and diseases detection and identification	Number of persons trained; pest & diseases cards issued to farmers	x	x	x	x	x	x	x	x	County Gov., KALRO, KEPHIS, PCPB, Private sector, CIP	6.25m
		Training on sampling for lab analysis	Number of samples submitted and samplers trained	x	x	x	x	x	x	x	x	County Gov., KEPHIS, Private sector	4m
		Training on	% of farmers	x	x	x	x	x	x	x	x	County Gov.,	5m

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		management practices	adopting good management practices									KEPHIS, Private sector, KALRO,	
		Establishment of early warning system	Early warning system in place and functional; weather station; info dissemination				x					KEPHIS (Coordinate), County Gov., KALRO, Private, CIP	10m
		Pest reporting	Number of reports received		x			x	x	x	x	KEPHIS (Coordinate), County Gov., KALRO, Private sector	5m
		Create awareness and provision of diagnostic services, pest surveillance	Number of sample analyzed; pest surveillance reports; plant health clinics; Rapid diagnostic kits for disease and soil analysis					x	x	x	x	KEPHIS (Coordinate), County Gov., KALRO, Private sector	26m
	Proper harvesting	Training on use and handling of tools and	Number of farmers trained and using		x			x	x	x	x	County Gov., Private sector, KEPHIS	5m

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		proper timing for harvesting	appropriate tools										
		Demonstration of harvesting practices	Number of harvesting demos done				x	x	x	x	x	County Gov., Private sector	5m
2. Reduce post-harvest losses and increase value addition	Improved handling of potato	Training on appropriate post-harvest practices	Number of persons trained and adopted appropriate post-harvest practices				x	x	x	x	x	County Gov., Private sector, KEPHIS,	5m
		Establishment of appropriate storage facilities	Number of established facilities					x	x	x	x	County Gov., Private sector	525m
		Training on control of post-harvest diseases and pests	Number of trainings held and number of persons trained				x	x	x	x	x	County Gov., Private sector, KEPHIS, KALRO, PCPB,	5m
	Storage of seed	Encourage use of cold storage	Expand and maintain existing cold stores				x	x	x	x	x	County Gov., Private sector	50m
			Construction of new ones					x	x	x	x	County Gov., Private sector	300m

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			Promotion of On-farm storage (40 Ton)		x				x	x	x	x	County Gov., Private sector	5m
		Establishment of diffused light stores for sprouting of seed	No. of established stores						x	x	x	x	County Gov., Private sector, Cooperative Societies, KALRO	10m
	Increase processing	Establishment of processing facility	No. of established processing facilities						x				County Gov., Private sector,	2.0 Bil.
		Training on processing	Number of processing technologies adopted						x	x	x	x	County Gov., Private sector,	5m
3. Improved market access	Improvement of market networks	Linking value chain actors	Number of linkages and contracts established and implemented	x					x	x	x	x	County Gov., Private sector (e.g. Sereni fries, Gaea foods, Java), KDF	50m
	Improvement of road networks	Gravelling, murraming and tarmacking of roads	Number of Kilometres of road improved	x					x	x	x	x	County Gov., National Gov., Private sector,	To be done by National and County Gov.

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	Creation of collection centres	Coordinating the producers to market in groups; construction of collection centres	Number of group formed and selling together	x		x		x	x	x	x	County Gov., National Gov., Private sector,	10m
4. Increased involvement of women and youth	Gender responsive business training	Training on business planning, profit and loss calculation	Number of youth and women groups trained		x			x	x	x	x	County Gov., Private sector,	5m
		Helping youth & women to make business plan	No. of business plans		x			x	x	x	x	County Gov., Private sector,	5m
	Involving youth and women in certified seed businesses	Training on youth and women in certified seed businesses	Number of youth and women groups involved in certified seed business		x			x	x	x	x	County Gov., KEPHIS, KALRO, Private sector	5m
		Promoting active involvement of youth and women in marketing	Training for young people and women in farmer groups and cooperatives	Number of groups trained in marketing				x	x	x	x	County Gov., Private	5m
	Linking	Linking	No. of		x							County Gov.,	5m

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	women and youth to access produce market and seed information through use of ICT	women & youth to use existing marketing platforms e.g. Viazi soko	linkages established; training on market requirement; contract farming			x		x	x	x	x	Private sector, AFA,	
	Gender responsive business loans	Linking women and youth to business loan providers	No. of women and youth groups linked to trade funds ;		X			x	x	x	x	County Gov., Private sector, Government funds,	1m
5. Impact study	Conduct the study	Impact of the strategy	Report of the impact study							X		Consultant	5m

- To improve on post-harvest and marketing challenges we have targeted to put up potato storage facilities and renovate some of those available with the cooperatives in order to improve on our storage capacities. The facilities will save farmers from post-harvest losses and selling their produce at throw away price during pick production seasons as they will be able to time better prices as they can temporarily withhold their produce until prices become favourable.
- The County is also planning to put up a potato processing factory so as to create market and value to our potatoes.

Monitoring and Evaluation

3.1 Performance Indicators

Objective	Activities	Sub-activities	Output	Performance Indicators	Baseline	Target	Remark
1. Increase production and productivity.	Supply of certified seeds	Identification of desired varieties / certified seed	List of desired varieties at county level	Updated List	1	1	Once a year; CEC Nyandarua (linked to agriculture)
			Adoption of new varieties	Number of new varieties	1	3	Adoption will depend on availability of seed, market demand, management practices required
		Sources of desired varieties / certified seed	Updated database of companies selling certified seed	Updated list	1	1	Once a year; CEC Nyandarua (linked to agriculture); name of the company, contact persons, use of variety,
		Identify, register and train potential seed producers at county level	Seed producers identified, trained and registered	Number of seed producers identified, trained and registered	1	10	1 ATC be registered as seed company; consider youth and women in seed production
		Identify and	Technologies	Number of	1	2	TC lab to be put

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		promote technologies of increasing certified seed availability e.g. Tissue culture, Cuttings, true seed; number of entities	identified and adopted by entities	technologies identified and adopted by entities			up through support of EU; private sector initiatives; The technologies will be: TC, minitubers and cuttings
	Promotion of irrigation	Expansion of irrigated area by identifying new areas	Increased hectarage of irrigated area for farming	Increase in hectarage for irrigated area	10	50	Njabini ATC will be targeted to produce TC material including mini tubers and cuttings in addition to training other farmers in irrigation
		Promotion of potato production in irrigated areas	Increased hectarage under potato in irrigated areas	Increase in hectarage under potato in irrigated areas		50	Extension staff work; Kshs. 1 million per year.
	Support farmers to access affordable and quality inputs	Facilitate availability of fertilizer and other soil amendments	Farmers using recommended rates of fertilizer and other soil amendments	Percentage of farmers using recommended rates of fertilizer and other soil amendments	20%	40%	CIP to share information on soil amendments with Nyandarua County; a survey (impact study) to be done to

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							confirm change in use of fertilisers and other amendments
		Facilitate availability of Certified seed	Farmers using recommended rates of Certified seed	Percentage of farmers using recommended rates of Certified seed	1%	5%	The 5 % is from growers affiliated to ATC; plus other sources of certified seed;
		Facilitate availability of Chemical inputs	Farmers using recommended rates of Chemical inputs	Percentage of farmers using recommended rates of Chemical inputs	60	80	
	Promote good agronomic practices	Training and awareness creation	Farmers trained and awareness creation done	Number of trainings and awareness creation fora	800	1,500	A brochure with all the recommended agronomic practices will be availed to all farmers.
Number of farmers trained				20,000	37,500	Based on 25 farmers per training	
Field days		Number of field days and farmers reached	Number of field days focused on potato value chain	1	10	500 persons per field days; 1 field days per year; 1 Champion farmers field day per year	
Demonstrations		Number of	Number of	25	125	1 per ward per	

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			demonstrations	demonstrations		demos	year
		Identification and establishment of model farms	Model farms identified and established in the county	Number of model farms identified and established	2	3	Njabini and Ol Jorok to be refurbished to display new technologies; plus one private farm
		Extension services to the farmers	Extension visits	Number of extension visits	2,000	13,000	Estimated cost of a visit is KShs. 2,000 per visit.
			Farmers reached	No. of farmers reached	10,000	70,000	
		Facilitate and promote soil testing and remedies	Farmers adopting soil testing services and remedies e.g. liming	% of farmers adopting soil testing services and remedies e.g. liming	0.1%	5%	700 samples per year tested; the tests will be Soil fertility, Bacteria Wilt, Black leg and Viruses (Leaf samples)
	Support availability of potato production machinery	Facilitate access to affordable machinery services	Farmers accessing potato mechanization services	% of farmers accessing potato mechanization services	2 incomplete sets	3	A full set of machinery for seed potato production – every Sub-county to have a set and procure equipment for the existing 2 incomplete sets

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		Promote the use of walking tractors	Farmers trained on use of walking tractors	Number of farmers trained on use of walking tractors	0	500	one tractor per sub-county
		Training on use of machinery e.g. handling, hygiene, maintenance	Machinery users trained	Number of users trained	30	250	Individuals, private and institutions with machines
	Management of pests and diseases	Awareness and training on pests and diseases detection and identification	Staff and farmers trained	Number of persons trained	300	2500	Unit cost of one training is Kshs. 2500 per farmer
		Training on sampling for lab analysis	Samples submitted for lab analysis	Number of samples submitted	25	200	Comprehensive test is Kshs. 10,000; training cost is Kshs. 25000 per sampler.
			People trained	No. of people trained	0	60	60 county staff
		Training on management practices	Farmers adopting good management practices	% of farmers adopting good management practices	20%	50%	Currently being done through estimates but a document will be created on a guideline on good management practices

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		Establishment of early warning system	Early warning system in place and functional	Early warning system in place and functional	0	1	5 weather stations in place; pest traps; data collection
		Pest reporting	Reports received	Number of reports received	12	60	Structured pest reporting; train on new pest reporting structure – 60 staff trained
		Create awareness and provision of diagnostic services	Samples analyzed	Number of sample analyzed	5	50	Provide rapid diagnostic kits for disease and soil analysis at county level i.e. diseases (12m one piece), soil rapid testing kit (400000 per piece x 5 pieces), KEPHIS to do diseases analysis
	Proper harvesting	Training on use and handling of tools and proper timing for harvesting	Farmers trained	No. of farmers trained	1500	10,000	Tools include – harvester, lifter,
Farmers using appropriate tools			% of farmers using appropriate tools	0.1%	5%		
Demonstration of harvesting practices		Harvesting demos done	Number of harvesting demos done	20	50		

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2. Reduce post-harvest losses and increase value addition	Improved handling of potato	Training on appropriate post-harvest practices	Persons trained	Number of persons trained	500	5000	
			Farmers adopted appropriate post-harvest practices	% of farmers adopted appropriate post-harvest practices	1	25	
		Establishment of appropriate storage facilities	Storage facilities established	Number of established facilities	7	20	
		Training on control of post-harvest diseases and pests	Trainings held	Number of trainings	10	125	5 training per ward.
	Number of persons trained			250	3000		
	Storage of seed	Encourage use of cold storage	Cold storage expanded	Expansion of existing cold storage	1	5	These are private stores which serve the public.
			Construction of ambient stores	No. of ambient stores constructed	2	5	One per sub-county
		Establishment of diffused light stores for sprouting of seed	Stores established	No. of stores established	3	10	1 diffuse light store for seed costs 1 million Kshs and holds 10 tons.
	Increase processing	Establishment of processing facility	Processing facilities established	No. of processing facilities established	1	2	1 unit will cost 2 billion Kshs with a processing capacity of 100

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							tons/day.
		Training on processing	Processing technologies adopted	Number of processing technologies adopted	2	2	2 technologies adopted widely in the county in tandem with market demand; business plan to run processing businesses
3. Improved market access	Improvement of market networks	Linking value chain actors	linkages and contracts established and implemented	Number of linkages and contracts established and implemented	3	10	Linkages are contracts with processors, supermarkets (Branding Nyandarua potatoes – distinct qualities), consumers,
	Improvement in acceptability of Nyandarua potato	Promotion of food safety, quality and nutrition	Increased volume of quality potatoes sold through contracts	Tons produced per year	333,000 tons	540,000 tons	60 % of total production is sold for eating; 13 % saved for seed and 27 % is for home use.
		Marketing certified seed potato	Increased usage of certified seed potato	Percentage	1%	5%	
		Branding, traceability and packaging	Increased average price per kg	Price per kg	Kshs. 15 per kg	Kshs. 25 per kg	These prices are farm gate

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	Improvement of road networks	Gravelling, murraming and tarmacking of roads	Roads improved	Number of Kilometres of road improved			This is an activity under National Government and County Department of Roads
	Creation of collection centres	Coordinating the producers to market in groups	Groups formed and selling through collection centres	Number of group formed and selling through collection centres	3	10	Two collection centres per sub-county
4. Increased involvement of women and youth	Gender responsive business training	Training on business planning, profit and loss calculation	Youth and women groups trained	Number of youth and women groups trained		200 persons (100 Y +100 W)	Model business plans focused on processing, growers of certified seed and ware
	Involving youth and women in certified seed businesses	Training on youth and women in certified seed businesses	Youth and women groups involved in certified seed business	Number of youth and women groups involved in certified seed business		10 groups	Ensure the recruitment is proper; each group has a minimum of 20 members.
	Promoting active involvement of youth and women in marketing	Training for young people and women in farmer groups and cooperatives	Youth and women groups trained in marketing	Number of Youth and women groups trained in marketing		10 groups	
	Linking women and	Linking women & youth to use	linkages established	Number of linkages		10 groups	

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	youth to access produce market and seed information through use of ICT	existing marketing platforms e.g. Viazi soko		established			
	Gender responsive business loans	Linking women and youth to business loan providers	women and youth linked to business loan providers	No. of women and youth linked to business loan providers		10 groups	
		Helping youth & women to make business plans	Business plans made	No. of business plans made		10 groups	

3.2 Monitoring

Monitoring, evaluation and reporting will be a central feature of this strategy. It will involve routine data collection and analysis. The results will be used to inform decision making at all levels. The coordination, monitoring and evaluation of the strategy implementation will be the responsibility of the County Government of Nyandarua together with the other key stakeholders from the public and private sector. A report will be produced after every monitoring session.

3.3 Evaluation

Evaluation will be through a six-monthly stakeholders meeting, a mid-term and an end term evaluation during the implementation period.

3.4 Impact assessment study

This will be done at the end of the 4th year. A consultant will be hired.